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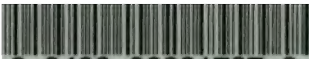
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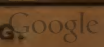
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ANNUAL EXAMINATION,

NOVEMBER, 1906.

FOR THE

DEGREES OF B.A., B.Sc., LL.B., M.B., B.S.,
B.C.E., AND B.M.E., AND FOR THE
DIPLOMAS OF EDUCATION, MUSIC,
MINING, AND METALLURGY.

GREEK.—PART I. (TRANSLATION OF
PREPARED BOOKS.)

The Board of Examiners.

1. Translate, with brief notes in the margin where
you think them called for—

- (11) μηδὲν φοβηθῆς· φιλία
γὰρ ἦδε τάξις πτερύγων
θοαῖς ἀμίλλαις προσέβα
τόνδε πάγον, πατρώας
μόγις παρειπούσα φρένας.
κραιπνοφόροι δὲ μ' ἔπεμψαν αὔραι·
κτύπου γὰρ ἀχὼ χάλυβος
διῆξεν ἀντρῶν μυχόν, ἐκ δ' ἔπληξέ μου
τὰν θεμερῶπιν αἰδῶ·
σύθην δ' ἀπέδιλος ὄχω πτερωτῶ.

B

- (b) ἐγὼ γὰρ οὐκ εἰ δυστυχῶ, τοῦδ' εἵνεκα
 θέλοισμ' ἂν ὡς πλείστοισι πημονὰς τυχεῖν.
 οὐ δῆτ', ἐπεὶ με καὶ κασιγνήτου τύχαι
 τεύρουσ' Ἄτλαντος, ὃς πρὸς ἑσπέρους τόπους
 ἔστηκε κίον' οὐρανοῦ τε καὶ χθονὸς
 ὤμοις ἐρείδων, ἄχθος οὐκ εὐάγκαλον.
- (c) IΩ. ἦ γάρ ποτ' ἔστιν ἐκπεσεῖν ἀρχῆς Δία ;
 ΠΡ. ἦδοι' ἂν, οἶμαι, τήνδ' ἰδοῦσα συμφορὰν.
 IΩ. πῶς δ' οὐκ ἂν, ἦτις ἐκ Διὸς πάσχω κακῶς ;
 ΠΡ. ὡς τοίνυν ὄντων τῶνδ' εἰ σοὶ μαθεῖν πάρα.
 IΩ. πρὸς τοῦ τύραννα σκῆπτρα συληθήσεται ;
 ΠΡ. πρὸς αὐτὸς αὐτοῦ κενοφρόνων βουλευμάτων.
 IΩ. ποίῳ τρόπῳ ; σήμερον, εἰ μὴ τις βλάβη.
 ΠΡ. γαμῆ γάμον τοιοῦτον, ᾧ ποτ' ἀσχαλᾶ.
- (d) κᾶκρινα πρῶτος ἐξ ὄνειράτων ἄ χορῆ
 ἔπαρ γενέσθαι, κληδόνας τε δυσκρίτους
 ἐγνώρισ' αὐτοῖς· ἐνοδίους τε συμβόλους
 γαμψωνύχων τε πτήσιν οἰωνῶν σκεθρῶς
 διώρισ', οἵτινές τε δεξιῶν φύσιν,
 εὐωνύμους τε, καὶ δίαίταν ἦντινα
 ἔχουσ' ἕκαστοι, καὶ πρὸς ἀλλήλους τίνες.
 ἔχθραι τε καὶ στέργηθρα καὶ ξυνεδρίαί·
 σπλάγχων τε λειότητα, καὶ χροῖαν τίνα
 ἔχοντ' ἂν εἴη δαίμοσιν πρὸς ἡδονήν.
2. (a) Give a terse account of the conditions under which a drama was exhibited in the time of Aeschylus.
- (b) What rational account can be given of the myth of Prometheus ?
3. Explain the meaning of—ἀνήριθμον γέλασμα—τὴν σιδηρομήτορα αἶαν—'Αραβίας ἄρειον ἄνθος, οἱ πόλισμα Καυκάσον πέλας νέμονται—'Ερινύες—κηρόπλαστος δόναξ—αὐλῶν Μαιωτικός—αἱ προσήγοροι δρῦες.

And the grammar of—*εἰ γάρ μ' ὑπὸ γῆν ἦκεν, ὡς μὴ θεὸς ἐπεγήθει—ἐξελευσάμην βροτοὺς τοῦ (οἱ τὸ) μὴ εἰς "Αἰδοῦ μολεῖν—οὐκ ἔστιν ὄψω μείζονα μοῖραν νείμαιμ' ἢ σοί—τίνος ἀμπλακίας ποινας ὀλέκει;*

4. Translate, with notes, as above—

(a) *ἀλλ' εἰ σοι εἶπεν· ὦ Θρασύμαχε, πῶς λέγεις; μὴ ἀποκρίνωμαι ὧν προεῖπες μηδέν; πότερον, ᾧ θαυμάσιε, μηδ' εἰ τούτων τι τυγχάνει ὄν, ἀλλ' ἕτερον εἶπω τι τοῦ ἀληθοῦς; ἢ πῶς λέγεις; τί ἂν αὐτῷ εἶπες πρὸς ταῦτα; Εἶεν, ἔφη· ὡς δὴ ὅμοιον τοῦτο ἐκείνῳ. Οὐδέν γε κωλύει, ἦν δ' ἐγώ· εἰ δ' οὖν καὶ μὴ ἔστιν ὅμοιον, φαίνεται δὲ τῷ ἐρωτηθέντι τοιοῦτον, ἦν τὸν τι αὐτὸν οὔτε ἀποκρινεῖσθαι τὸ φαινόμενον ἑαυτῷ, ἔάν τε ἡμεῖς ἀπαγορεύωμεν ἔάν τε μή; Ἄλλο τι οὖν, ἔφη, καὶ σὺ οὕτω ποιήσεις; ὧν ἐγὼ ἀπεῖπον, τούτων τι ἀποκρινεῖ; Οὐκ ἂν θαυμάσαιμι, ἦν δ' ἐγώ, εἰ μοι σκεψαμένῳ οὕτω δόξειεν.*

(b) *ἀγύρται δὲ καὶ μάντις ἐπὶ πλουσίων θύρας ἰόντες πείθουσιν ὡς ἔστι παρὰ σφίσι δύναμις ἐκ θεῶν ποριζομένη θυσίαις τε καὶ ἐκφθαῖς, εἴτε τι ἀδίκημά του γέγονεν αὐτοῦ ἢ προγόνων, ἀκεῖσθαι μεθ' ἡδονῶν τε καὶ ἐορτῶν, ἔάν τε τινα ἐχθρὸν πημῆναι ἐθέλῃ μετὰ σμικρῶν δαπανῶν, ὁμοίως δίκαιον ἀδίκῳ βλάψειν ἐπαγωγαῖς τισὶν καὶ καταδέσμοις, τοὺς θεοὺς, ὡς φασιν, πείθοντές σφισιν ὑπηρετεῖν. τούτοις δὲ πᾶσιν τοῖς λόγοις μάρτυρας ποιητὰς ἐπάγονται, οἱ μὲν κακίας περὶ εὐπετείας διδόντες, ὡς*

τὴν μὲν κακότητα καὶ ἰλαδὸν ἔστιν ἐλέσθαι ῥηϊδίως· λείη μὲν ὁδὸς, μάλα δ' ἐγγύθι ναίει· τῆς δ' ἀρετῆς ἰδρῶτα θεοὶ προπάραιθεν ἔθηκαν

καὶ τινα ὁδὸν μακρὰν τε καὶ ἀνάτην·

5. Translate, with grammatical and explanatory notes where necessary :—
- (a) Κελεύεις δὴ ἡμᾶς προσθεῖναι τῷ δίκαιῳ ἢ ὡς τὸ πρῶτον ἐλέγομεν, λέγοντες δίκαιον εἶναι τὸν μὲν φίλον εὖ ποιεῖν, τὸν δ' ἐχθρὸν κακῶς, νῦν πρὸς τούτῳ ὧδε λέγειν, ὅτι ἔστιν δίκαιον τὸν μὲν φίλον ἀγαθὸν ὄντα εὖ ποιεῖν, τὸν δ' ἐχθρὸν κακὸν ὄντα βλάπτειν.
- (b) ἔστιν δὲ τοῦτο τυραννίς, ἢ οὐ κατὰ μικρὸν τὰλλότρια καὶ λάθρα καὶ βία ἀφαιρεῖται, καὶ ἱερά καὶ θσια καὶ ἴδια καὶ δημόσια, ἀλλὰ ξυλλήβδην, ὧν ἐφ' ἐκάστῳ μέρει ὅταν τις ἀδικήσας μὴ λάθρῃ, ζημιούται τε καὶ ὀνειδῆ ἔχει τὰ μεγιστα·
- (c) δῆλον γὰρ ὅτι οὐ τοῦτο λέγει, ὅπερ ἄρτι ἐλέγομεν, τό τινος παρακαταθεμένου τι ὄψου μὴ σωφρόνως ἀπαιτοῦντι ἀποδιδόναι· καίτοι γε ὀφειλόμενόν πού ἐστιν τοῦτο, ὃ παρακατέθετο· ἢ γάρ; Ναί. Ἄποδοτέον δὲ γε οὐδ' ὅπως οὖν τότε ὅποτε τις μὴ σωφρόνως ἀπαιτοίη.
6. What is the meaning of — εἰρωνένεσθαι, ἔρμαιον, κατατείνας, εὐφύης, ἴδιοι λόγοι, δημιουργός? Distinguish in meaning between — θεῖναι νόμους, θέσθαι νόμους; εὐχερής, εὐπετής; δεῖ, χρή, προσήκει; οὐ πάνυ, οὐ πάνυ τι; οἶδα τὸν ἄνθρωπον, ὁ ἄνθρωπος γνώριμός ἐστιν ἐμοί.
7. Explain why a discussion on the nature of justice formed the proem to Plato's Ideal Commonwealth.
8. Outline the arguments by which Socrates, starting from Simonides' definition of Justice, forces Polemarchus to admit that the just man is a thief.

LATIN.—PART I. (TRANSLATION OF
PREPARED BOOKS.)

The Board of Examiners.

1. Translate, with concise notes in the margin where you think them necessary—

(a) Sin autem ad pugnam exierint, nam saepe
duobus

Regibus incessit magno discordia motu,
Continuoque animos vulgi et trepidantia bello
Corda licet longe praesciscere : namque morantes
Martius ille aeris rauci canor increpat, et vox
Auditur fractos sonitus imitata tubarum ;
Tum trepidae inter se coeunt, pennisque coruscant,
Spiculaque exacuunt rostris, aptantque lacertos,
Et circa regem atque ipsa ad praetoria densae
Miscentur, magnisque vocant clamoribus hostem.

(b) Ac veluti lentis Cyclopes fulmina massis
Cum properant, alii taurinis follibus auras
Accipiunt redduntque, alii stridentia tingunt
Aera lacu ; gemit impositis incudibus Ætna ;
Illi inter sese magna vi bracchia tollunt
In numerum, versantque tenaci forcipe ferrum :
Non aliter, si parva licet componere magnis,
Cecropias innatus apes amor urget habendi,
Munere quamque suo. Grandaevis oppida curae,
Et munire favos, et daedala fingere tecta.

(c) Nam qua Pellaei gens fortunata Canopi
Accolit effuso stagnantem flumine Nilum
Et circum pictis vehitur sua rura phaselis ;

Quaque pharetratae vicinia Persidis urget,
 Et viridem Aegyptum nigra fecundat harena
 Et diversa ruens septem discurrit in ora
 Usque coloratis amnis devexus ab Indis :
 Omnis in hac certam regio iacit arte salutem.

2. (a) Discuss the object of Vergil in writing the Georgics. Comment on any means which he adopts of making a didactic work "poetical."
 (b) What are the chief errors which he commits in regard to bees ?

3. Explain—*imbrex, insincerus cruor, invisae Minervae aranea, viva volare sideris in numerum, suspendunt ceras, Curetum sonitus, vellere signa, vestibulum.*

4. State the grammar of—*trunca pedum—neque enim plus septima ducitur aestas—pabula venti ferre domum prohibent.*

5. Translate, as above—

(a) *virtus repulsae nescia sordidae
 intaminatis fulget honoribus
 nec sumit aut ponit secures
 arbitrio popularis aurae.*

*virtus recludens inmeritis mori
 caelum negata temptat iter via
 coetusque volgares et udam
 spernit humum fugiente penna.*

- (b) *hic dies anno redeunte festus
 corticem adstrictum pice dimovebit
 amphorae fumum bibere institutae
 consule Tullo.*

- (c) aurum per medios ire satellites
 et perrumpere amat saxa potentius
 ictu fulmineo : concidit auguris
 Argivi domus ob lucrum
 demersa exitio ; diffidit urbium
 portas vir Macedo et subruit aemulos
 reges muneribus ; munera navium
 saevos inlaqueant duces.
- (d) campestres melius Scythae,
 quorum plaustra vagas rite trahunt
 domos,
 vivunt et rigidi Getae,
 inmetata quibus iugera liberae
 fruges et Cererem ferunt,
 nec cultura placet longior annua,
 defunctumque laboribus
 aequali recreat sorte vicarius.

6. Explain the epithets in—

Vester, Camenae, vester in *arduos*
 Tollor Sabinos, seu mihi *frigidum*
 Præneste, seu Tibur *supinum*
 Seu *liquidæ* placuere Baiae.

7. What is meant by "Epicurean" as applied to Horace? Illustrate such principles from anything you may remember in the Odes.
8. Explain the grammar of—*abstineto irarum—testudo resonare septem callida nervis—donec non alia magis arsisit.*
9. Where were—Lipara, Algidus, Rhodope, Cantabri, Castalia, Galaesus?

10. Translate with notes—

- (a) phalarica erat Saguntinis missile telum hastili abiegno et cetera tereti praeterquam ad extremum, unde ferrum exstabat; id, sicut in pilo, quadratum stuppa circumligabant linebantque pice; ferrum autem tres longum habebat pedes, ut cum armis transfigere corpus posset. sed id maxime, etiam si haesisset in scuto nec penetrasset in corpus, pavorem faciebat, quod, cum medium accensum mitteretur conceptumque ipso motu multo maiorem ignem ferret, arma omitti cogebat nudumque militem ad insequentes ictus praebat.
- (b) tum nemini visum id longum, cum ab occasu solis ad exortus intenderent iter; nunc, postquam multo maiorem partem itineris emensam cernant, Pyrenaeum saltum inter ferocissimas gentes superatum, Rhodanum, tantum amnem, tot milibus Gallorum prohibentibus, domita etiam ipsius fluminis vi traiectum, in conspectu Alpes habeant, quarum alterum latus Italiae sit, in ipsis portis hostium fatigatos subsistere—quid Alpes aliud esse credentes quam montium altitudines? fingerent altiores Pyrenaei iugis; nullas profecto terras caelum contingere nec inexcuperabiles humano generi esse.
- (c) id vero laboris velut de integro initium fuit; nam nec explicare quicquam nec statuere poterant, nec, quod statutum esset, manebat, omnia perscendente vento et rapiente; et mox aqua levata vento cum super gelida montium iuga concreta esset, tantum nivosae grandinis deiecit, ut omnibus omissis procumberent homines tegminibus suis magis obruti quam tecti; tantaque vis frigoris insecuta est, ut ex illa miserabili hominum

iumentorumque strage cum se quisque attollere ac levare vellet, diu nequiret, quia torpentibus rigore nervis vix flectere artus poterant.

11. Translate and explain—

- (a) ipsi triumviri Romani, qui ad agrum venerant adsignandum.
- (b) Aegates insulas Erycemque ante oculos proponite.

12. Comment on—

- (a) adversum femur tragula graviter ictus.
- (b) nox una Hannibali sine equitibus acta est.

13. Explain praetorium missum; agmen quadratum; de re publica referre, votorum nuncupatio, solum vertere, animam reciprocare, navales socii, adfatim.

14. Summarize the chief events in the histories of Rome and Carthage between the first and second Punic wars.

GREEK.—PART II. (TRANSLATION OF
PREPARED BOOKS.)

The Board of Examiners.

[N. B.—Second Year Candidates need not attempt more than SIX, nor Third Year Candidates more than EIGHT, of the passages for translation.]

1. Translate, with brief notes in the margin if necessary—

- (a) αὐτὰρ ἐπεὶ ῥ' εὐξαντο καὶ οὐλοχύτας προβάλλοντο,
αὐέρουσαν μὲν πρῶτα καὶ ἔσφαξαν καὶ ἔδειραν,
μηρούς τ' ἐξέταμον κατὰ τε κνίσῃ ἐκάλυψαν
δίπτυχα ποιήσαντες, ἐπ' αὐτῶν δ' ὠμοθέτησαν·
καῖε δ' ἐπὶ σχίζῃς ὁ γέρων, ἐπὶ δ' αἰθοπα οἶνον
λεῖβε· νέοι δὲ παρ' αὐτὸν ἔχον πεμπώβολα χερσίν.
αὐτὰρ ἐπεὶ κατὰ μῆρα κἀη καὶ σπλάγχχνα πάσαντο,
μίστυλλον τ' ἄρα τὰλλα καὶ ἀμφ' ὀβελοῖσιν ἔπειραν,
ὦπτησάν τε περιφραδέως ἐρύσαντό τε πάντα.
αὐτὰρ ἐπεὶ παύσαντο πόνου τετύκοντό τε δαῖτα,
δαίνυντ', οὐδέ τι θυμὸς ἐδευέτο δαιτὸς εἴσης.
αὐτὰρ ἐπεὶ πόσιος καὶ ἐδητύος ἐξ ἔρον ἔντο,
κοῦροι μὲν κρητῆρας ἐπεστέψαντο ποτοῖο,
νώμησαν δ' ἄρα πᾶσιν ἐπαρξάμενοι δεπάεσσιν.
- (b) ὧς ἄρ' ἔφη, σκήπτρῳ δὲ μετάφρενον ἠδὲ καὶ ὦμῳ
πλήξεν· ὃ δ' ἰδνώθη, θαλερὸν δέ οἱ ἔκπεσε δάκρυ.
σμῶδιξ δ' αἱματόεσσα μεταφρένου ἐξυπανέστη
σκήπτρου ὑπο χρυσεῖον· ὃ δ' ἄρ' ἔζετο τάρβησέν τε,
ἀλγῆσας δ' ἀχρεῖον ἰδὼν ἀπομόρξατο δάκρυ.
οἱ δὲ καὶ ἀχρῦμενοί περ ἐπ' αὐτῷ ἠδὺ γέλασαν.
ὦδε δέ τις εἶπεσκε ἰδὼν ἐς πλησίον ἄλλον·

ὦ πόποι, ἧ δὴ μυρὶ Ὀδυσσεὺς ἐσθλὰ ἔοργεν
 βουλὰς τ' ἐξάρχων ἀγαθὰς πόλεμόν τε κορύσσων·
 νῦν δὲ τόδε μέγ' ἄριστον ἐν Ἀργεῖοισιν ἔρεξεν,
 ὅς τὸν λωβητῆρα ἐπεσβόλον ἔσχ' ἀγοράων.

2. Explain—*νηῆς ἀμφιέλισσαι—δινωτοῖσι λέχεσσι—εἰ δέ ποτ' ἔς γε μίαν βουλευσομεν—δέπας ἀμφικύπελλον—ἐπὶ ἧρα φέρειν—ὄν Βριάρεων καλέουσι θεοὶ ἄνδρες δέ τε πάντες Αἰγαίωνα—θέμιστες—Σμινθεῦ.*
3. Give a succinct account of—
 (a) the probable dialect of the original Achilles-poem;
 (b) indications in Homer of the physique and armour of the Achæans as distinguished from other Aegean peoples.
4. Write down the Attic equivalents of—*ἤγερθεν, χέρη, ἐπιτετράφαται, ἦατο.*
5. Translate (as above)—
 (a) *χαῖρε. τόδε μὲν κατὰ Φοίνισσαν ἐμπολὸν μέλος ὑπὲρ πολιᾶς ἀλὸς πέμπεται· τὸ Καστόρειον δ' ἐν Αἰολίδεσσι χορδαῖς θέλων ἄθρησον χάριν ἐπτακτύπου φόρμυγος ἀντόμενος. γένοι' οἷος ἐσσι μαθῶν· καλὸς τοι πίθων παρὰ παισίν, αἰεὶ καλός. ὁ δὲ Ῥαδάμανθυς εὖ πέπραγεν, ὅτι φρενῶν ἔλαχε καρπὸν ἀμώμητον, οὐδ' ἀπάταισι θυμὸν τέρπεται ἔνδοθεν, οἷα ψιθύρων παλάμαις ἔπετ' αἰεὶ βροτῶν. ἄμαχον κακὸν ἀμφοτέροις διαιβολιᾶν ὑποφάτιες, ὄργαις ἀγενὲς ἄλωπέκων ἵκελοι.*

- (b) Σάμερον μὲν χρή σε παρ' ἀνδρὶ φίλῳ
 στᾶμεν, εὐίππου βασιλῆι Κυράνας, ὄφρα κωμά-
 ζοντι σὺν Ἀρκεσίλῳ,
 Μοῖσα, Λατοῖδαισιν ὀφειλόμενον Πυθῶνι τ' αὐξῆς
 οὔρον ὕμνων,
 ἔνθα ποτε χρυσέων Διὸς αἰητῶν πάρεδρος
 οὐκ ἀποδάμου Ἀπόλλωνος τυχόντος ἴρεα
 χρῆσεν οἰκιστῆρα Βάττον καρποφόρου Λιβύας, ἱερὰν
 νᾶσον ὡς ἤδη λιπῶν κτίσσειεν εὐάρματον
 πόλιν ἐν ἀργινόεντι μαστῶ.

6. Name any striking features of (a) the grammar and dialect (b) the constructive manner of Pindar.

7. Comment on—λευκαῖς πιθήσαντα φρασίν—εὐμένε-
 οντες ἀνεψιόν—ἐν Πυθῶνι τόσσαις—προοιμίῳν
 ἀμβολάς—Ποίαντος υἱὸν τοξόταν—Ἀρχίλοχον
 ἔχθεσιν πλαινόμενον—Ἀργοῦς χαλινόν.

8. Translate (as above)—

- (a) ὁ λεύκασπις ὄρνυται λαὸς εὐτρεπῆς ἐπὶ πόλιν
 διώκων.

τίς ἄρα ῥύσεται, τίς ἄρ' ἐπαρκέσει θεῶν ἢ θεᾶν ;
 πότερα δῆτ' ἐγὼ ποτικέσω βρέτη δαιμόνων ;
 ἰὼ μάκαρες εὐεδροί.

ἀκμάζει βρετέων ἔχεσθαι· τί μέλλομεν ἀγαστόνοι ;
 ἀκούετ' ἢ οὐκ ἀκούετ' ἀσπίδων κτύπον ;
 πέπλων καὶ στεφάνων πότ', εἰ μὴ νῦν, ἀμφὶ λιτάν'
 ἔζομεν ;

κτύπον δέδορκα· πάταγος οὐχ ἑνὸς δορός.
 τί ῥέξεις, προδώσεις, παλαιχθῶν Ἄρης, τὰν τεᾶν
 γᾶν ;

ὦ χρυσοπήληξ δαῖμον, ἔπιδ' ἔπιδε πόλιν,
 ἄν ποτ' εὐφιλήταν ἔθου.

- (b) οὕτω γένοιτο. τὸν δὲ πέμπτον αὖ λέγω,
 πέμπταισι προσταχθέντα Βορραΐαις πύλαις,
 τύμβον κατ' αὐτὸν Διογενοῦς Ἀμφίονος.
 ὄμνυσι δ' αἰχμὴν, ἣν ἔχει, μᾶλλον θεοῦ
 σέβειν πεποιθῶς ὀμμάτων θ' ὑπέρτερον,
 ἢ μὴν λαπάξειν ἄστυ Καδμείων βία
 Διός· τόδ' αὐδ' ἄ μητρός ἐξ ὄρεσκόου
 βλάστημα καλλίπρῳρον, ἀνδρόπαις ἀνήρ.
 στείχει δ' ἴουλος ἄρτι διὰ παρηΐδων
 ὥρας φουούσης ταρφὺς ἀντέλλουσα θρίξ.
 ὁ δ' ὤμῶν οὔτι παρθένων ἐπώνυμον
 φρόνημα, γοργὸν δ' ὄμμ' ἔχων, προσίσταται.
 οὐ μὴν ἀκόμπαστος γ' ἐφίσταται πύλαις·
 τὸ γὰρ πῶλεως ὕνειδος ἐν χαλκηλάτῳ
 σάκει, κυκλωτῷ σώματος προβλήματι,
 Σφίγγ' ὠμόσιτον προσμεμηχανημένην
 γόμφους ἐνώμα, λαμπρὸν ἔκκρουστον δέμας·

9. (a) Give instances of metaphorical condensation in the style of Aeschylus. In what ways are Greek metaphors qualified or defined?
 (b) Give instances of plays upon words.
10. Comment briefly on the story of Cadmus, of the Sphinx, and on the epithet ἐπτάπυλοι.
11. Write a note on the grammar of—

θεοὶ πολῖται, μή με δουλείας τυχεῖν—ἐκπέρσειν πόλιν φησίν, οὐδὲ τὴν Διὸς ἔριν πεδῶ σκήψασαν ἔμποδῶν σχεθεῖν—

and on the meaning of—

ἐθρέψατ' οἰκιστῆρας, ὅπως γένοισθε πρὸς χρέος τόδε—μελάνδετον σάκος—ἵππικῶν πηδαλιῶν διὰ στόμα, πυριγενετᾶν χαλινῶν—Τηθύος παῖδες—μάστιξι—καμψίπους Ἐρινύς.

12. Translate (as above)—

- (a) παραίνεέ τε προειπεῖν τοῖσι ἔωυτῶν ἑκάστους πῦρ ἀνακαίειν· κομιδῆς δὲ πέρι τὴν ὥρην αὐτῷ μελήσειν, ὥστε ἀσινέας ἀπικέσθαι ἐς τὴν Ἑλλάδα. ταῦτα ἤρεσέ σφι ποιέειν, καὶ ἀντίκα πῦρ ἀνακαυσάμενοι ἐτράποντο πρὸς τὰ πρόβατα. οἱ γὰρ Εὐβοέες παραχρησάμενοι τὸν Βάκιδος χρησμὸν ὡς οὐδὲν λέγοντα, οὔτε τι ἐξεκομίσαντο οὐδὲν οὔτε προεσάξαντο ὡς παρεσομένου σφι πολέμου, περιπετέα τε ἐποίησαντο σφίσι αὐτοῖσι τὰ πρήγματα· Βάκιδι γὰρ ᾧδε ἔχει περὶ τούτων ὁ χρησμὸς·

Φράζεο βαρβαρόφωνον ὅταν ζυγὸν εἰς ἄλα βάλλῃ
βύβλινον Εὐβοίης ἀπέχειν πολυμηκάδας αἰγας.

τούτοισι δὲ οὐδὲν τοῖσι ἔπεσι χρησαμένοισι ἐν τοῖσι τότε παρεούσι τε καὶ προσδοκίμοισι κακοῖσι, παρῆν σφι συμφορῇ χρῆσθαι πρὸς τὰ μέγιστα.

- (b) πρῶτοι γὰρ Ἄνδριοι νησιωτέων αἰτηθέντες πρὸς Θεμιστοκλέος χρήματα οὐκ ἔδοσαν· ἀλλὰ προῖσχομένου Θεμιστοκλέος λόγον τόνδε, ὡς ἤκοιεν Ἀθηναῖοι περὶ ἔωυτοὺς ἔχοντες δύο θεοὺς μεγάλους, Πειθῶ τε καὶ Ἀναγκαίην, οὕτω τέ σφι κάρτα δοτέα εἶναι χρήματα, ὑπεκρίναντο πρὸς ταῦτα λέγοντες, ὡς κατὰ λόγον ἦσαν ἄρα αἱ Ἀθῆναι μεγάλαι τε καὶ εὐδαίμονες, καὶ θεῶν χρηστῶν ἤκοιεν εὖ· ἐπεὶ Ἄνδριους γε εἶναι γεωπεῖναι ἐς τὰ μέγιστα ἀνήκοντας, καὶ θεοὺς δύο ἀχρήστους οὐκ ἐκλείπειν σφέων τὴν νῆσον, ἀλλ' αἰεὶ φιλοχωρέειν, Πενίην τε καὶ Ἀμμηχανίην· καὶ τούτων τῶν θεῶν ἐπηβόλους ἔοντας Ἄνδριους οὐ δώσειν χρήματα·

13. Where were Scione, Ellopia, Hollows of Euboea, Aphetae, Amphissa, Hermione ?

14. Give the Herodotean words for ἠττάω, βλάπτω, and the Attic for ἀναγνώσαι, ἐκέατο. Comment on the Ionic use of πρόβατα, τιμωρή, ἐπίσταμαι, and on the grammar of ἐποιέετο πᾶν ὅκως ἂν ἐξισωθείη.

15. Translate (as above)—

(a) ἽΟτι μὲν οὖν πάντ' ἀνδρα εικότως ἀποδέχονται περὶ ταύτης τῆς ἀρετῆς σύμβουλον διὰ τὸ ἠγγεῖσθαι παντὶ μετεῖναι αὐτῆς, ταῦτα λέγω· ὅτι δὲ αὐτὴν οὐ φύσει ἠγοῦνται εἶναι οὐδ' ἀπὸ τοῦ αὐτομάτου, ἀλλὰ διδακτόν τε καὶ ἐξ ἐπιμελείας παραγίγνεσθαι ᾧ ἂν παραγίγηται, τοῦτό σοι μετὰ τοῦτο πειράσομαι ἀποδείξαι. ὅσα γὰρ ἠγοῦνται ἀλλήλους κακὰ ἔχειν ἄνθρωποι φύσει ἢ τύχῃ, οὐδεὶς θυμοῦται οὐδὲ νοουθετεῖ οὐδὲ διδάσκει οὐδὲ κολάζει τοὺς ταῦτα ἔχοντας, ἵνα μὴ τοιῦτοι ᾤσιν, ἀλλ' ἐλεοῦσιν· οἷον τοὺς αἰσχροὺς ἢ μικροὺς ἢ ἄσθενεῖς τίς οὕτως ἀνόητος ὥστε τι τούτων ἐπιχειρεῖν ποιεῖν;

(b) εἰ γάρ τις λέγοι ὅτι ἽΑλλὰ πολὺ διαφέρει, ᾧ Σώκρατες, τὸ παραχρῆμα ἠδὲ τοῦ εἰς τὸν ὕστερον χρόνον καὶ ἠδέος καὶ λυπηροῦ, Μῶν ἄλλῃ τῃ, φαίην ἂν ἔγωγε, ἢ ἠδονῇ καὶ λύπῃ; οὐ γὰρ ἔσθ' ὅτῃ ἄλλῃ. ἀλλ' ὥσπερ ἀγαθὸς ἰστάναι ἄνθρωπος, συνθεῖς τὰ ἠδέα καὶ συνθεῖς τὰ λυπηρά, καὶ τὸ ἐγγὺς καὶ τὸ πόρρω στήσας ἐν τῇ ζυγῷ, εἰπέ πότερα πλείω ἐστίν. εἰάν μὲν γὰρ ἠδέα πρὸς ἠδέα ἰστῆς, τὰ μείζω αἰεὶ καὶ πλείω ληκτέα· εἰάν δὲ λυπηρά πρὸς λυπηρά, τὰ ἐλάττω καὶ μικρότερα· εἰάν δὲ ἠδέα πρὸς λυπηρά, εἰάν μὲν τὰ ἀνιαρὰ ὑπερβάλληται ὑπὸ τῶν ἠδέων, εἰάν τε τὰ ἐγγὺς ὑπὸ τῶν πόρρω εἰάν τε τὰ πόρρω ὑπὸ τῶν ἐγγύς, ταύτην τὴν πρᾶξιν πρακτέον ἐν ἧ ἂν ταῦτ' ἐνῆ· εἰάν δὲ τὰ ἠδέα ὑπὸ τῶν ἀνιαρῶν, οὐ πρακτέα· μή πῃ ἄλλη ἔχει, φαίην ἂν, ταῦτα, ᾧ ἄνθρωποι;

16. Explain the attitude of Socrates towards sophistic teaching.

17. Comment on—πόρρω ἔδοξε τῶν νυκτῶν εἶναι—ἽΠποκράτη, τὸν τῶν ἽΑσκληπιαδῶν—προσφῶν—τούτοις κατὰ τοῦτο εἶναι οὐ ξυμφέρομαι—Φερεκράτης ὁ ποιητῆς ἐδίδαξεν ἐπὶ Διναίῳ—γνώθι σαυτὸν καὶ μηδὲν ἄγαν.

LATIN.—PART II. (TRANSLATION OF
PREPARED BOOKS.)

The Board of Examiners.

1. Translate, with brief notes in the margin where you think them called for—
 - (a) Illud in his rebus vereor, ne forte rearis
impia te rationis inire elementa viamque
indugredi sceleris. quod contra saepius illa
religio peperit scelerosa atque impia facta.
Aulide quo pacto Triviai virginis aram
Iphianassai turparunt sanguine foede
ductores Danaum delecti, prima virorum.
cui simul infula virgineos circumdata comptus
ex utraque pari malarum parte profusast,
et maestum simul ante aras adstare parentem
sensit et hunc propter ferrum celare ministros
aspectuque suo lacrimas effundere civis,
muta metu terram genibus summissa petebat.
nec miseræ prodesse in tali tempore quibat
quod patrio princeps donarat nomine regem.
 - (b) denique materies si rerum nulla fuisset
nec locus ac spatium, res in quo quaeque
geruntur,
numquam Tyndaridis formae conflatus amore
ignis, Alexandri Phrygio sub pectore gliscens,
clara accendisset saevi certamina belli,
nec clam durateus Troianis Pergama partu
inflammasset equos nocturno Graiugenaarum.
2. Comment on—Heraclitus clarus ob obscuram
linguam—Acragantinus Empedocles—Anaxa-
gorae homoeomerian.

3. State concisely the physical theory of Epicurus, giving (if possible) the Greek terms with the Latin equivalents.

Give the various words used by Lucretius for "atoms" and "universe."

4. Explain the forms—indugredi, consumpse, escit, aquai.
5. Translate, as above—

Licet superbus ambules pecunia,
 Fortuna non mutat genus.
 Videsne, Sacram metiente te viam
 Cum bis trium ulnarum toga,
 Ut ora vertat huc et huc euntium
 Liberrima indignatio?
 "Sectus flagellis hic triumviralibus
 Praeconis ad fastidium
 Arat Falerni mille fundi iugera
 Et Appiam mannis terit,
 Sedilibusque magnus in primis eques
 Othone contempto sedet!

6. Translate, as above—

(a) Syllaba longa brevi subiecta vocatur iambus,
 Pes citus; unde etiam trimetris accrescere
 iussit
 Nomen iambeis, cum senos redderet ictus
 Primus ad extremum similis sibi. Non ita
 pridem,
 Tardior ut paullo graviorque veniret ad aures
 Spondeos stabiles in iura paterna recepit
 Commodus et patiens, non ut de sede secunda
 Cederet aut quarta socialiter. Hic et in Acci
 Nobilibus trimetris apparet rarus, et Enni

In scaenam missos cum magno pondere versus
 Aut operae celeris nimium cura que carentis
 Aut ignoratae premit artis crimine turpi.

- (b) Versibus impariter iunctis querimonia primum,
 Post etiam inclusa est voti sententia compos.
 (c) Neve minor neu sit quinto productior actu.

7. Translate, with short notes—

- (a) Cum hoc Pompeius egit et, ut ad me ipse refererebat—alium enim habeo neminem testem—, vehementer egit, cum diceret in summa se perfidiae et sceleris infamia fore, si mihi periculum crearetur ab eo, quem ipse armasset, cum plebeium fieri passus esset; fidem recepisse sibi et ipsum et Appium de me; hanc si ille non servaret, ita laturum, ut omnes intellegerent nihil sibi antiquius amicitia nostra fuisse.
- (b) De intercessione statim ambo consules referre coeperunt, cum sententiae gravissimae dicerentur, senatui placere mihi domum restitui, porticum Catuli locari, auctoritatem ordinis ab omnibus magistratibus defendi, si quae vis esset facta, senatum existimaturum eius opera factum esse, qui senatus consulto intercessisset, Serranus perterritus et Cornicinus ad suam veterem fabulam rediit: abiecta toga se ad generi pedes abiecit; ille noctem sibi postulavit: non concedebant; reminiscebantur enim Kal. Ianuar.; vix tandem illi de mea voluntate concessum est.
- (c) Qua re facis tu quidem fraterne, quod me hortaris, sed mehercule currentem nunc quidem, ut omnia mea studia in istum unum conferam. Ego vero ardenti quidem studio, ac fortasse efficiam, quod saepe viatoribus, cum properant, evenit, ut, si serius quam voluerint forte

surrexerint, properando etiam citius, quam si de nocte vigilassent, perveniant, quo velint; sic ego, quoniam in isto homine colendo tam indormivi diu, te mehercule saepe excitante, cursu corrigam tarditatem cum equis, tum vero—quoniam tu scribis poema ab eo nostrum probari—quadrigis poëticis.

8. Translate and explain—

- (a) Is, quem putabant magistrum fore, si bona venirent.
- (b) Mirandas *ἐπισημασίας* sine ulla pastoricia fistula auferebamus.
- (c) Carmine qui tragico vilem certavit ob hircum Mox etiam agrestes Satyros nudavit.
- (d) Ignotum tragicæ genus invenisse Camenæ Dicitur et plaustris vexisse poemata Thespis, Quæ canerent agerentque peruncti faecibus ora.

9. Comment on the grammar of—

- (a) Desertus ab officiis tuis;
- (b) Equidem malueram, quod erat susceptum ab illis, silentio transiri.
- (c) Te nunc, mea Terentia, sic vexari.
- (d) Di faxint.

10. Where were Cythnus, Pannonia, Lugdunum, Baetica, Vetera, the Lacus Curtius, the Miliarium Aureum, the Castra Praetoriana, the Porticus Vipsania?

11. Translate, with grammatical notes—

- (a) Muta ista et inanima intercidere ac reparari promisca sunt.

- (b) Prope in proelium exarsere ni Valens admonuisset.
- (c) Haud dubie servaverat non clementia, quippe tot interfectis, sed effugium in futurum.
- (d) Ubi per turmas advenere, vix ulla acies obstiterit.
12. Explain—ita visum expedire provinciam domi retinere—vexilla Germanica—primipilaris—teserarius—insula—equites legionis—legatus—cella Iunonis—evocatus.
13. Translate, with notes—
- (a) sextus dies agitur, commilitones, ex quo ignarus futuri, et sive optandum hoc nomen sive timendum erat, Caesar adscitus sum. quo domus nostrae aut rei publicae fato, in vestra manu positum est, non quia meo nomine tristio rem casum paveam, ut qui adversas res expertus cum maxime discam ne secundas quidem minus discriminis habere: patris et senatus et ipsius imperii vicem doleo, si nobis aut perire hodie necesse est aut, quod aequè apud bonos miserum est, occidere.
- (b) Vibius Crispus, pecunia potentia ingenio inter claros magis quam inter bonos, Annum Faustum equestris ordinis, qui temporibus Neronis delationes factitaverat, ad cognitionem senatus vocabat. nam recens Galbae principatu censuerant patres, ut accusatorum causae noscerentur. id senatus consultum varie iactatum et, prout potens vel inops reus inciderat, infirmum aut validum retinebat adhuc terrores. et propria vi Crispus incubuerat delatorem fratris sui pervertere traxeratque magnam senatus partem, ut indefensum et inauditum dedi ad exitium postulerent.

GREEK.—PART I. (COMPOSITION AND UNSEEN TRANSLATION.)

The Board of Examiners.

1. Translate into Greek prose—

In the course of the night, Leonidas observed what had happened. He saw that if he did not retreat immediately, he would be surrounded by the Persians and would perish. But the law of Sparta forbade the soldier to leave his post, and Leonidas was not afraid to die. He ordered the other troops to retire while it was yet possible; he himself, with his three hundred Spartans, remained to die at his post. Accordingly the other troops departed, but the seven hundred Thespians resolved to stay and die with Leonidas. And now, before the Persians could descend behind them, the Spartans fell upon the host in front; Leonidas was the first to fall, but his soldiers continued fighting until the Persians, who had crossed the mountain, arrived. Then, ceasing from the attack, they took up their position on a hill to defend themselves against the enemy, who now encompassed them on every side.

2. Translate into good English—

"Ἄνδρες Πέρσαι, ὑμεῖς καὶ ἔφυτε ἐν τῇ αὐτῇ ἡμῖν καὶ ἐγράφητε, καὶ τὰ σώματά τε οὐδὲν ἡμῶν χείρονα ἔχετε, ψυχάς τε οὐδὲν κακίονας ὑμῖν προσήκει ἡμῶν ἔχειν. τοιοῦτοι δ' ὄντες, ἐν μὲν τῇ πατρίδι οὐ μετρίχετε τῶν ἴσων ἡμῖν, οὐχ ὑφ' ἡμῶν ἀπελαθέντες,

ἀλλ' ὑπὸ τοῦ ἀνάγκην ὑμῖν εἶναι τάπιτῆδεῖα πορίζεσθαι. νῦν δὲ ὅπως μὲν ταῦτα ἔξετε, ἐμοὶ μελήσει σὺν τοῖς θεοῖς· ἔξεστι δ' ὑμῖν, εἰ βούλεσθε, λαβόντας ὄπλα, οἷάπερ ἡμεῖς ἔχομεν, εἰς τὸν αὐτὸν ἡμῖν κινδυνον ἐμβαίνειν, κἂν τι ἐκ τούτων καλὸν κάγαθὸν γίγνηται, τῶν ὁμοίων ἡμῖν ἀξιούσθαι. τὸν μὲν οὖν πρόσθεν χρόνον ὑμεῖς τε τοξόται καὶ ἀκοντισταὶ ἦτε καὶ ἡμεῖς, καὶ εἴ τι χεῖρους ἡμῶν ταῦτα ποιεῖν ἦτε, οὐδὲν θαυμαστόν· οὐ γὰρ ἦν ὑμῖν σχολή, ὥσπερ ἡμῖν, τούτων ἐπιμέλεια· ἐν δὲ ταύτῃ τῇ ὀπλίσει οὐδὲν ἡμεῖς ὑμῶν προέχομεν. θώραξ μὲν γε περὶ τὰ στέρνα ἀρμόττων ἐκάστω ἔσται, γέρον δὲ ἐν τῇ ἀριστερᾷ, ὁ πάντες εἰθίσμεθα φορεῖν, μάχαιρα δὲ ἐν τῇ δεξιᾷ, ἣ δὴ παίειν τοὺς ἐναντίους δεήσει, οὐδὲν φυλαττομένους μή τι παλόντες ἔξαμάρτωμεν.

LATIN.—PART I. (COMPOSITION AND
UNSEEN TRANSLATION.)

The Board of Examiners.

1. Translate into Latin Prose—

The mutineers, seeing their leader fall, prepared themselves for revenge; and this whole company, with the king himself, had undoubtedly perished on the spot, had it not been for the extraordinary courage which Richard displayed on the occasion. He ordered his whole company to stop; he advanced alone towards the enraged multitude; and accosting them with an intrepid countenance, he asked them, "What is the meaning of this disorder, my good people? Are ye angry that ye have lost your leader? I am your king; I will be your

leader." The populace, overawed by his presence, followed him; he led them into the fields, to prevent any disorder which might have arisen from their continuing in the city; being there joined by Sir Robert Knollys, and a body of well-armed veteran soldiers, who had been secretly drawn together, he strictly ordered that officer not to fall upon the rioters and commit an indiscriminate slaughter upon them.

2. Translate into good English—

Sed, quoniam res humanæ fragiles caducaeque sunt, semper aliqui anquirendi sunt quos diligamus et a quibus diligamur. Caritate enim benevolentiaque sublata, omnis est e vita sublata iucunditas. Equidem ex omnibus rebus, quas mihi aut fortuna aut natura tribuit, nihil habeo quod cum amicitia Scipionis possim comparare. In hac mihi de republica consensus, in hac rerum privatarum consilium, in eadem requies plena oblectationis fuit. Numquam illum ne minima quidem re offendi, quod quidem senserim; nihil audivi ex ipso quod nollem. Una domus erat, idem victus, isque communis: neque solum militia, sed etiam peregrinationes rusticationesque communes. Nam quid ego de studiis dicam cognoscendi semper aliquid atque discendi, in quibus remoti ab oculis populi omne otiosum tempus contrivimus? Quarum rerum recordatio et memoria si una cum illo occidisset, desiderium coniunctissimi atque amantissimi viri ferre nullo modo possem. Sed nec illa extincta sunt, alunturque potius et augentur cogitatione et memoria; et, si illis plane orbatus essem, magnum tamen afferret mihi aetas ipsa solatium.

GREEK.—PART II. (COMPOSITION AND
UNSEEN TRANSLATION.)

The Board of Examiners.

1. Translate into Greek Prose—

The vessel being repaired, we again embarked, and in two days arrived in safety at Cadiz. I found great confusion reigning there; numerous bands of the factious were reported to be hovering in the neighbourhood. An attack was not deemed improbable, and the place had just been declared in a state of siege. I dressed myself and walked about the town. In one place no less than six orators were haranguing at the same time on the state of the country, and the probability of an intervention on the part of England and France. As I was listening to one of them, he suddenly called upon me for my opinion, as I was a foreigner, and seemingly just arrived. I replied that I could not venture to guess what steps the two Governments would pursue under the present circumstances, but thought that it would be as well if the Spaniards would exert themselves more and call less on Jupiter. As I did not wish to engage in any political conversation, I instantly quitted the house, and sought those parts of the town where the lower classes principally reside.

2. Translate into good English—

οὗτος τοίνυν ὁ Κῦρος λέγεται Λυσάνδρῳ, ὅτε ἦλθεν ἄγων αὐτῷ τὰ παρὰ τῶν συμμάχων δῶρα, ἅλλα τε φιλοφρονεῖσθαι (ὡς αὐτὸς ἔφη ὁ Λύσανδρος

ξένῳ ποτέ τι νε ἐν Μεγάροις διηγούμενος), καὶ τὸν ἐν Σάρδεσι παράδεισον ἐπιδεικνύσαι. ἐπεὶ δὲ ἐθαύμαζεν ὁ Λύσανδρος ὡς καλὰ μὲν τὰ δένδρα εἶη, δι' ἴσον δὲ πάντα πεφυτευμένα, ὀρθοὶ δὲ οἱ στίχοι τῶν δένδρων, εὐγώνια δὲ πάντα καλῶς εἶη, ὄσμαι δὲ πολλαὶ καὶ ἡδεῖαι συμπαρομαρτοῖεν αὐτοῖς περιπατοῦσι, ταῦτα θαυμάζων εἶπεν· Ἄλλ' ἐγὼ τοι, ὦ Κῦρε, πάντα μὲν ταῦτα θαυμάζω ἐπὶ τῷ κάλλει, πολὺ δὲ μᾶλλον ἄγαμαι τοῦ καταμετρήσαντός σοι καὶ διατάξαντος ἕκαστα τούτων. ἀκούσαντα δὲ ταῦτα τὸν Κῦρον ἠσθῆναί τε καὶ εἰπεῖν· Ταῦτα τοίνυν, ὦ Λύσανδρε, ἐγὼ πάντα καὶ διεμέτρησα καὶ διέταξα, ἔστι δ' αὐτῶν ἅ καὶ ἐφύτευσα αὐτός. καὶ ὁ Λύσανδρος ἔφη, ἀποβλέψας εἰς αὐτὸν καὶ ἰδὼν τῶν τε ἱματίων τὸ κάλλος ὃν εἶχε καὶ τῆς ὀσμῆς αἰσθόμενος καὶ τῶν στρεπτῶν καὶ τῶν ψελίων [τὸ κάλλος] καὶ τοῦ ἄλλου κόσμου οὐ εἶχεν, Τί λέγεις, ὦ Κῦρε; ἦ γὰρ σὺ ταῖς σαῖς χερσὶ τούτων τι ἐφύτευσας; καὶ τὸν Κῦρον ἀποκρίνασθαι, Θαυμάζεις τοῦτο, ὦ Λύσανδρε; ὄμνυμι σοι τὸν Μίθρην, ὅταν περ ὑγιαίνω, μηπώποτε δειπνῆσαι πρὶν ἰδρῶσαι, ἢ τῶν πολεμικῶν τι ἢ τῶν γεωργικῶν ἔργων μελετῶν ἢ αἰεὶ ἐν γέ τι φιλοτιμούμενος.

LATIN.—PART II. (COMPOSITION AND
UNSEEN TRANSLATION.)

The Board of Examiners.

1. Translate into Latin prose—

These fellows, with the look of banditti, were in no respect better; and the traveller who should meet them in a solitary place would have

little reason to bless his good fortune. One of the carriers whom I afterwards met in the aforesaid town, informed me that the whole party were equally bad, and that he and his companions had been plundered by them of various articles, and threatened with death if they attempted to complain. How frightful to figure to oneself an army of such beings in a foreign land, sent thither either to invade or defend; and yet Spain, at the time I am writing this, is looking forward to armed assistance from Portugal. May the Lord in His mercy grant that the soldiers who proceed to her assistance may be of a different stamp; and yet, from the lax state of discipline which exists in the Portuguese army, in comparison with that of England and France, I am afraid that the inoffensive population of the disturbed provinces will say that wolves have been summoned to chase away foxes from the sheep-fold.

2. Translate into good English—

Inter duas acies tantum erat relictum spati ut satis esset ad concursum utriusque exercitus. Sed Pompeius suis praedixerat ut Caesaris impetum exciperent neve se loco moverent aciemque eius distrahi paterentur; idque admonitu G. Triari fecisse dicebatur, ut primus excursus visque militum infringeretur aciesque distenderetur atque in suis ordinibus dispositi dispersos adorirentur; leviusque casura pila sperabat in loco retentis militibus quam si ipsi immissis telis occurrissent, simul fore ut duplicato cursu Caesaris milites exanimarentur et lassitudine conficerentur. Quod nobis quidem nulla ratione factum a Pompeio videtur, propterea quod est

quaedam animi incitatio atque alacritas naturaliter innata omnibus, quae studio pugnae incenditur. Hanc non reprimere sed augere imperatores debent; neque frustra antiquitas institutum est ut signa undique concinerent clamoremque universi tollerent; quibus rebus et hostes terreri et suos incitari existimaverunt.

Sed nostri milites signo dato cum infestis pilis procucurrissent atque animum advertissent non concurriri a Pompeianis, usu periti ac superioribus pugnis exercitati sua sponte cursum represserunt et ad medium fere spatium constiterunt, ne consumptis viribus appropinquarent, parvoque intermisso temporis spatio ac rursus renovato cursu pila miserunt celeriterque, ut erat praeceptum a Caesare, gladios strinxerunt.

GREEK.—PART II. (OUTLINES OF GREEK HISTORY, LITERATURE, AND ANTIQUITIES.)

The Board of Examiners.

PASS AND HONOUR PAPER.

1. Write a brief account of (a) the Epic cycle, (b) the Lesbian lyrists.
2. *Either* describe succinctly a performance of tragedy about B.C. 450. (Use the Greek technical terms.)

Or,

Give an account of the work of Theophrastus, Plutarch, Apollonius Rhodius.

3. Describe a typical Greek temple, and also a sacrifice.

4. Draw a diagram of Athens and the Peiraeus, and mark the position of Academia, Lyceum, Dionysiac Theatre, Pnyx, Ilissus, Cephissus, Cerameicus.
5. Where were — Pylos, Ithaca, Amphipolis, Megalopolis, Abydos, Delos, Cythera? State some fact connected with each.
6. Give a terse description of the proceedings in the Ecclesia.
7. Explain—είσφορά, μουσική, μέτοικος, φρατρία, αὐλή, πολέμαρχος.
8. How was the Persian power extended by Cyrus the Great, Cambyses, Darius? State in outline the chief events connected with the three Persian expeditions against Greece.
9. Relate briefly the part taken in the Peloponnesian War by Phormio, Brasidas, Demosthenes, Gylippus.
10. Under what circumstances were the following battles fought:—Eurymedon, Tanagra, Aegospotami, Leuktra?

LATIN.—PART II. (OUTLINES OF ROMAN HISTORY, LITERATURE, AND ANTIQUITIES.)

The Board of Examiners.

PASS AND HONOUR PAPER.

1. (a) Divide Latin literature into periods, explaining the principle upon which you do so, and naming the chief authors in each.
- (b) Discuss briefly the salient qualities and defects of Latin literature as a whole.

2. Describe (a) the literary work of Cicero apart from his speeches; (b) the dramatic work of Seneca.
3. Describe (with diagram) the Forum Romanum and its chief sites and buildings before A.D. 100.
4. Distinguish the various troops and officers in the Roman army of the early Imperial times. Also distinguish the various *signa*. Use the Latin terms.
5. Give a brief account of (a) Roman meals; (b) Roman writing and writing materials.
6. Where were Numantia, Trasimenus, the Treveri, Tibur, Noricum?
7. Explain—*tablinum, comitia curiata, vestibulum, raeda, cenacula, ordo equestris, vilicus, pistrina*.
8. What were the character and extent of Rome's influence in Italy in the year 350 B.C.? Illustrate your answer by a rough map.
By what wars did she complete the conquest of Italy?
9. Name the chief champions of popular rights between 150 B.C. and 90 B.C. State in the briefest possible form the *chief* aims and measures of each.
10. Summarise the chief events in Roman History between the battles of Philippi and Actium.
How, after the battle of Actium, did Augustus reconcile the Romans to what practically amounted to monarchy?

COMPARATIVE PHILOLOGY:

SECOND YEAR.

Professor Tucker.

PASS AND HONOUR PAPER.

1. What is meant by "Semasiology"? Discuss and illustrate the difficulty of creating a science in this respect.
2. Draw a diagram of the articulating apparatus. State what occurs when we pronounce the English *r*, *ng* (in *thing*), *u*, *g*, *f*, a French nasalised vowel, and the Scotch *ch*.
3. (a) Explain "sonant nasal," "pitch accent," "indeterminate vowel."
(b) Write phonetically the words of the last question (a).
4. What tendencies of phonetic change are universal? Give illustrations of the processes.
5. (a) Describe the exact connection of the Greek and Latin alphabets.
(b) How did "alphabetical" signs develop from "phonograms"?
6. Given in certain English words the consonants *w ... d*, *h ... t*, *r ... d*, *s ... t*, *sp ... k*, what Greek, Latin, and German consonants should (or might) correspond to them? Conversely give the English consonants for *κ ... π*, *τ ... γ*, *π ... θ*.

Explain clearly the method by which you proceed in such comparisons.

7. (a) Compare the morphological methods of the Bantu, American Indian, and Turkish speeches.
 (b) Discuss briefly the connection of race and language.
8. Give a short account of the languages which are or have been spoken over the following areas:—(a) the British Islands and France, (b) European Russia. If possible, place such languages on an outline map.
9. (a) By what arguments do we arrive at an "original home" of the I.-E. people?
 (b) Give a synoptic table of the history of the Teutonic branch.

COMPARATIVE PHILOLOGY.

THIRD YEAR.

Professor Tucker.

1. Comment on the vowels italicised in—*Lēvir*, *vīnum*, *poēna*, *quattuor*. Discuss the exact relationship of *similis*, ὀμαλός—*Iovem*, Ζῆνα—*θνήσκω*, πέφαται—*cribrum*, *cerno*—*γυνή*, *μνάομαι*.
2. Take the following words; analyse them into their original component parts; point out and account for anything phonetically or morphologically peculiar in any of them—
ἄφρος (with *imber*), *αιῶ* (with *αιῶνα*), ἄσσα (with *τινά*), ἄτεροι (with *οἱ ἕτεροι*), ἐξεῖ (Doric = ἐξει), *μεσαμβρή* (Ion., with *ἡμέρα*), ἐντί.

(with *sunt*), *posuī* (with *pōno*), *nōnus* (with *ἑνατος*), *ἑκατοστός*^f (with *centēsimus*), *honestus* (with *honōrōs*), *prosus* (with *per̄to*), *ὀρύσσω* (with *runcare*), *hibi* (with *χε* *ρινός*), *φθίνω* (with *φθόη*), *τάνυται* (with *τείνεται*), *posco* (with *precor*), *stabulis*, *cereb. m* (with *κράτα*), *στήλη* (with *στέλλω*), *γουν* (with *γύνατος*), *αἰέν* (with *αἰές*, *αἰί*).

3. Write a concise account of the formation of the I-E. verb in respect of (a) tense-stems, (b) infinitives. Give illustrations throughout.
4. Give (with examples) a full account of the formation of comparatives and superlatives in Greek and Latin.
5. Decline **māter*, **οἰς*, and the demonstrative **so*, *sā*, explaining such Greek and Latin forms as deviate from the proper phonetic equivalence.
6. Give and illustrate the history of *q*, *g* in Greek, the I-E. aspirates in Latin, and *ǰ* in both.
7. Account for *φέρεις*, *φέρης*, *ἔδομαι*, *σίντ*, *ἦνται*, *κόρη*, *ἔσμέν*, *ἑκατόν*, *secundus*, *quinq̄ue*, *δραχμη̄σι*, *tuus*, *κυσί*.

ENGLISH.—P. M. I.

FIRST PAPER.

Mr. Murdo

PASS AND HONOUR PAPER.

1. Give a concise account of the changes that took place in the grammatical structure of the English Language after the Norman Conquest.
2. "In the history of inflections, two counteracting influences, which are always operating upon language, become plainly visible." Explain this statement.
3. What is a dialect? Give some account of the dialects of Early English.
4. What is meant by the term "Latin of the Second Period"?
5. Explain the following phrases:—I have no long spoon—put it to the foil—young scamels from the rock—upon a sore injunction—it did bass my trespass—each putter-out of five for one.
6. Explain tersely—
 - (a) What a pied ninny's this! Thou scurvy patch!
 - (b) His mother was a witch, and one so strong
That could control the moon, make flows and ebbs,
And deal in her command without her power.

D

- (c) My charms crack not ; my spirits obey ; and
time
Goes upright with his carriage.
- (d) every day some sailor's wife,
The master of some merchant and the merchant
Have just our theme of woe.
- (e) and the fair soul herself
Weigh'd between loathness and obedience at
Which end o' the beam should bow.
- (f) invert
What best is boded me to mischief!

7. Write concise explanatory notes on—

- (a) So our virtues
Lie in th' interpretation of the time :
And power, unto itself most commendable,
Hath not a tomb so evident as a chair
T' extol what it had done.
- (b) I would they would forget me, like the virtues
Which our divines lose by 'em.
- (c) He lurch'd all swords o' the garland.
- (d) nay, sometimes,
Like to a bowl upon a subtle ground
I've tumbled past the throw ; and in his praise
Have almost stamp'd the leasing.
- (e) Ay, as an ostler, that for the poor'st piece
Will bear the knave by th' volume.

8. Explain the following phrases from *Paradise Lost*:—above the Aonian mount—some small night-founder'd skiff—the Tuscan artist—Busiris and his Memphian chivalry—that hill of scandal—on the grunsel-edge—the giant brood of Phlegra—that small infantry warred on by cranes.

9. Explain the following lines with reference to their context:—

- (a) The ascending pile
Stood fixt her stately highth.
- (b) A leper once he lost and gained a king.
- (c) . . . that soil may best
Deserve the precious bane.
- (d) Anon they move
In perfect phalanx to the Dorian mood
Of flutes and soft recorders.
- (e) As far removed from God and light of Heaven
As from the centre thrice to the utmost pole.
- (f) Millions of spirits for his fault amerced
Of Heaven.

10. Comment upon—

- (a) Taliessin is our fullest throat of song,
And one hath sung and all the dumb will sing.
- (b) What other fire than he
Whereby the blood beats, and the blossom
blows,
And the sea rolls, and all the world is warm'd?
- (c) All men, to one so bound by such a vow,
And women were as phantoms.
- (d) I saw the fiery face as of a child
That smote itself into the bread, and went.
- (e) And mirthful sayings, children of the place,
That have no meaning half a league away.
- (f) I saw the spiritual city and all her spires
And gateways in a glory like one pearl.

11. Compare Tennyson and Milton in the matter of
(a) *diction*; (b) *versification*.

12. Explain the following from Johnson's *Life of Pope* :—
- (a) Wycherley wrote verses in his praise, which he was charged by Dennis with writing to himself.
 - (b) At its first appearance it was termed by Addison *merum sal*.
 - (c) It is certainly the noblest version of poetry which the world has ever seen.
 - (d) The subsequent editions of the first Epistle exhibited two memorable corrections.
 - (e) Bolingbroke hated Warburton, who had drawn his pupil from him.

ENGLISH.—PART I.

SECOND PAPER.

Mr. Murdoch.

PASS AND HONOUR PAPER.

A.

1. Discuss the theory that *The Tempest* was written for a court performance in 1613.
2. Write a note on the "dramatic unities" with special reference to *The Tempest*.
3. Write a short account of the group of plays to which *The Tempest* belongs. Why are they called "romances"?
4. Discuss the character of Coriolanus.

5. Write a short note on the supposed "sources" of *Paradise Lost*.
6. Discuss the origin of the Arthurian Legend.
7. What is your own opinion of the allegorical significance of *The Holy Grail*?
8. Give a concise summary of the history of the English novel up to the time of Scott.
9. What are the most striking characteristics of Johnson's prose style?

B.

Pass Candidates only.

Write a short essay on Scott as a historical novelist.

C.

Additional for Honours.

1. Write a concise account of Dryden—(a) as a poet, (b) as a prose writer.
2. Give some account of *one* work by each of the following:—Sterne, Goldsmith, Gibbon, Collins, Thomson, Coleridge. Give (approximately) the date of publication in each case.
3. Explain fully—
 - (a) Wel couthe he peynten lyfly that it wroghte,
With many a florin he the hewes boghte.
 - (b) Yet sawgh I brent the shippes hoppesteres.
 - (c) Men may the olde at-renne, and noght at-rede.

- (d) The clothered blood, for any lechecraft,
Corrupteth, and is in his bouk y-laft.
- (e) The careyne in the bush, with throte y-corve :
A thousand slayn, and nat of qualm y-storve
- (f) but rather lyk manie
Engendred of humour malencolyk,
Biforen, in his celle fantasyk.
4. Comment on the *metre* of the following lines :—
- (a) In-to a studie he fil al sodeynly.
(b) Now it shyneth, now it reyneth faste.
(c) And thinketh heer cometh my mortel enemy.
5. At what points does Browning depart from his-
torical accuracy in order to adapt the story of
Strafford to the requirements of drama ?
6. Explain the following lines with reference to their
context :—
- (a) He's surely not disposed to let me bear
The fame away from him of these late deeds
In Ireland ?
- (b) I know the Faction, as
Laud styles it, tutors Scotland : all their plans
Suppose no Parliament : in calling one
You take them by surprise.
- (c) A breed of silken creatures lurk and thrive
In your contempt.
- (d) I can't think, therefore, your soul's purchaser
Did well to laugh you to such utter scorn
When you twice prayed so humbly for its
price,
The thirty silver pieces.

ENGLISH.—PART II.

FIRST PAPER.

Mr. Murdoch.

PASS AND HONOUR PAPER.

1. Explain the following words from *Hamlet*:—
 quillet, lazar, anele, bisson, handsaw, yaw,
 chopine, escote, fardel, romage.

In what sense, now rare or obsolete, does
 Shakespeare use the words—censure, rival,
 shrewd, union, addition, ecstasy, abuse?

2. Write concise notes on the following passages:—

- (a) So frown'd he once, when, in an angry parle,
 He smote the sledded Polacks on the ice.
- (b) There is, sir, an eyrie of children, little eyases,
 that cry out on the top of question, and are most
 tyrannically clapped for't.
- (c) and am I then revenged,
 To take him in the purging of his soul,
 When he is fit and season'd for his passage?
- (d) her speech is nothing,
 Yet the unshaped use of it doth move
 The hearers to collection.
- (e) For use almost can change the stamp of nature,
 And either master the devil, or throw him out
 With wondrous potency.

3. Explain the following lines with reference to their context:—
- (a) And be no more an exhaled meteor,
A prodigy of fear and a portent
Of broached mischief to the unborn times.
 - (b) All plumed like estridges that with the wind
Bated, like eagles having lately bathed.
 - (c) The skipping king, he ambled up and down
With shallow jesters and rash bavin wits,
Soon kindled and soon burnt.
 - (d) he is a worthy gentleman,
Exceedingly well read, and profited
In strange concealments.
 - (e) I must speak in passion, and I will do it in
King Cambyses' vein.
 - (f) O villain, thou stolest a cup of sack eighteen
years ago, and wert taken with the manner.
4. Summarise the differences between the First Quarto of *Hamlet* and the Second.
 5. State concisely the chief reasons for believing that Shakespeare was not the first to dramatise the story of *Hamlet*.
 6. Describe the two types of history-play followed by Shakespeare, and discuss, in this connection, his indebtedness to Marlowe.
 7. Give, in summary form, Dryden's arguments for the use of rhyme in tragedy. Did his practice accord with his theory?
 8. Give the substance of Macaulay's comparison of Addison with Swift and Voltaire.

9. Comment on the following lines from Gray—

- (a) The generous spark extinct revive,
Teach me to love and to forgive,
Exact my own defects to scan,
What others are, to feel, and know myself a man
- (b) What idle progeny succeed
To chase the rolling circle's speed
Or urge the flying ball ?
- (c) Two coursers of ethereal race
With necks in thunder clothed, and long-
resounding pace.
- (d) Some pious drops the closing eye requires.
- (e) He gave to Mis'ry all he had, a tear,
He gain'd from Heav'n ('twas all he wish'd)
a friend.

10. How is Burke's attitude towards the French Revolution to be reconciled with the political principles enunciated in his previous writings ?

11. Write a short description of Burke's prose style.

Additional for Honours.

12. Interpret (with any pertinent comment)—

- (a) Ther saugh I first the derke imagining
Of felonye, and al the compassing;
The cruel ire, as reed as any glede;
The pykepurs, and eek the pale drede;
The smyler with the knyf under the cloke;
The shepne brenning with the blake smoke;
The tresoun of the mording in the bedde;
The open werre, with woundes al bi-bledde;
Contek, with blody knyf and sharp manace;
Al ful of chirking was that sory place.

- (b) Ne no man shal un-to his felawe ryde
But o cours, with a sharp y-grounde spere;
Foyne, if him list, on fote, himself to were.
- (c) Two fyres on the auter gan she bete,
And dide hir thinges, as men may biholde
In Stace of Thebes, and thise bokes olde.
13. Give a concise account of Chaucer's work, distinguishing his three periods.

ENGLISH.—PART II.

SECOND PAPER.

Mr. Murdoch.

PASS AND HONOUR PAPER.

1. Describe the system of versification employed in Anglo-Saxon poetry.
2. How do you account for the literary barrenness of the fifteenth century in England?
3. Write a note on the origins of English drama.
4. (a) Give a brief account of *one* work by each of the following:—Michael Drayton, Thomas Nash, Ben Jonson, Sir John Denham.
(b) State precisely what you mean by Euphuism.
5. (a) Compare Dryden and Pope as satirists.
(b) Compare Milton's prose with Dryden's.

6. In what sense can Gray and Collins be said to have been heralds of the Romantic Revival in English poetry?
7. Give a concise account of the prose work of Coleridge, Hazlitt, and De Quincey.

B.

Write a short essay on *one* of the following subjects:—

- (a) Wordsworth's attitude to Nature.
- (b) The meaning of "Style."
- (c) Macaulay as a literary critic.

C.

For Pass Candidates only.

1. What are the chief points discussed in the *Essay* of *Dramatic Poesy*, and what is Dryden's conclusion in each case?
2. Mention some points of resemblance between *Hamlet* and *Julius Cæsar*.
3. Write a note on the character of Falstaff.
4. Write a short account of Addison's work—(a) as dramatist, (b) as poet.

D.

For Honours.

1. Discuss Coleridge's account of Hamlet's character.

2. Explain Hutton's statement, that Browning is "a great imaginative apologist, rather than either a lyric or dramatic poet."
3. What does Hutton mean by "the *voluntary* element in Wordsworth's genius"?
4. How, according to Hutton, was Arnold influenced by Goethe and Wordsworth respectively?
5. What is meant by the term *mysticism* as applied, by Hutton, to Shelley's poetry?

FRENCH.—PART I.

FIRST PAPER.

The Board of Examiners.

PASS AND HONOUR PAPER.

I.—VERSION.

1. Traduisez: (*ni trop littéralement ni trop librement*)—
Pass and Honours.
 - (a) France in the middle ages, and even in the earlier half of the 14th century, was still a vast agglomeration of heterogeneous races, each with different customs and different traditions. Aquitaine was as English as Surrey was French; Brittany was still a separate and generally an inimical country; Burgundy, Provence, and even Périgord, were petty sovereignties independent

of the Crown of France. These different districts had each their different manner of letting land and providing for its tillage.

But, in almost all of them, French agriculture was already remarkable; far superior, for instance, to that of England, notwithstanding her temperate winters and rich soil. The English kitchen-garden was then, as now, singularly deficient.

Pass and Honours.

- (b) In spite of his universality, and elegance and clearness of his style, he was a man without true passion either for art or science; and by his want of warmth furthered the tendency towards artificiality from which the language and literature already suffered. His true importance is a precursor of the scientific and "philosophic" spirit of the 18th century, not only as a popularizer of science, but also as the initiator of scientific doubt and destructive criticism.

Honours only.

- (c) Every castle was, in fact, a school—a seminary of polite education. From the king to the pettiest baron, every noble received at his court the children of his principal vassals; and thus every noble child was educated to the standard of the sphere immediately above his own. In their homes, from the age of seven, boys and girls alike had learned to spell, to ride, to know that they were Christians. At the age of ten or twelve they were generally sent to court. Here they learned, above all, the duties and behaviour of gentle people.

Great care was taken that they should be well bred, chivalrous, courteous, neatly clad, and clean.

II.—TRADUCTION.

Pass and Honours.

1. Traduisez :

(a) Moins riche que l'homme en qualités exquises, la femme l'emporte par les qualités natives, ce que Montaigne appelle les qualités de prime-saut ; son instinct la guide parfois aussi heureusement que la plus rigoureuse logique ; tandis que nous discourens, elle observe : le grand livre du monde lui est familier : elle devine, elle démêle, elle pénètre : c'est, dans le détail des choses de l'âme, un merveilleux psychologue. Sa volonté conçoit, quand il le faut, les résolutions les plus vaillantes, les résolutions du sacrifice : où nous décidons par raison, elle écoute son cœur, et la tendresse n'a pas de source plus profonde, le dévouement de plus complet abandon. Au bon sens le plus solide elle sait allier les grâces légères. Dans tout ce qui demande du tact, du goût, moins d'application que de génie, l'oubli ou le don de soi-même, dans la conversation, la correspondance, la critique, des juges difficiles ne lui reconnaissent pas de supérieur : elle a la finesse, l'élan, le charme. Ce sont là des richesses incomparables dont il n'est besoin que de diriger et de perfectionner l'emploi. On peut régler, son imagination et rectifier son jugement, éclairer ses sentiments et assurer sa volonté, discipliner en un mot ses facultés sans en contraindre l'allure naturelle.

(b) je n'étais qu'une plante inutile, un roseau
 Aussi je végétais, si frêle qu'un oiseau
 En se posant sur moi pouvait briser ma vie.
 Maintenant je suis flûte et l'on me porte envie.
 Car un vieux vagabond, voyant que je pleurais,
 Un matin en passant m'arracha du marais,

De mon cœur, qu'il vida, fit un tuyau sonore,
 Le fit sécher un an, puis, le perçant encore,
 Il y fixa la gamme avec huit trous égaux ;
 Et depuis, quand sa lèvre aux souffles musicaux
 Eveille les chansons au creux de mon silence,
 Je tressaille, je vibre et la note s'élance ;
 Le chapelet des sons va s'égrenant dans l'air ;
 On dirait le babil d'une source au flot clair ;
 Et dans ce flot chantant qu'un vague écho
 répète
 Je sais noyer le cœur de l'homme et de la bête

III.—SYNTAXE COMPARÉE.

(*Pass and Honours*). — (*Répondez brièvement en anglais aux questions suivantes.*)

- (a) Comment expliquez-vous l'assertion suivante :
 “ *Le français semble être à l'état de transition en ce qui concerne son accentuation* ”—et quelles sont les conséquences grammaticales de cette faiblesse de l'accent ? Donnez quelques exemples à l'appui de votre raisonnement.
- (b) Montrez au moyen de lignes les différences, qui existent dans la construction d'une phrase ordinaire en anglais et en français—Enumérez les défauts et qualités de chaque construction.
- (c) Traduisez les comparaisons suivantes par des “ *similes* ” anglais correspondants.

Boire comme un trou ;
 Manger comme quatre ;
 Impartial comme la justice ;
 Jaune comme un citron ;
 Lent comme uné tortue.

Citez d'autres comparaisons que vous pourriez savoir en français.

FRENCH.—PART I.

SECOND PAPER.

The Board of Examiners.

PASS AND HONOUR PAPER.

PRESCRIBED AUTHORS.

1. Traduisez (*en soignant le style et la précision des expressions*) :

Pass only.

- (a) Mélange, action, savoir-faire, tout cela ne se concilie guère, il faut le dire, avec l'idée d'innocence, de dignité individuelle. Ce génie libre et raisonneur, dont la mission est la lutte, apparaît sous les formes peu gracieuses de la guerre, de l'industrie, de la critique, de la dialectique. Le rire moqueur, la plus terrible des négations, n'embellit pas les lèvres où il repose. Nous avons grand besoin de la physionomie pour ne pas être un peuple laid. Quoi de plus grimaçant que notre premier regard sur le monde du moyen âge ? Le Gargantua de Rabelais, fait frémir à côté de la noble ironie de Cervantès et du fameux badinage de l'Ariote.

Il y en avait de tout petits, qui tâchaient de prouver qu'ils avaient seize ans, et qu'ils avaient droit de partir. L'Assemblée, par grâce, avait abaissé jusqu'à cet âge la faculté de s'entôler.

Il y avait des hommes mûrs, des hommes déjà grisonnants, qui ne voulaient pour rien au monde laisser une telle occasion, et plus lestes que les jeunes partaient devant pour la frontière.

Personne ne voyait ces choses sans émotion. La jeune audace de ces enfants, le dévouement de ces hommes qui laissaient-là tout, sacrifiaient tout, tiraient les larmes des yeux. Tels pleuraient, se désespéraient de ne pouvoir partir aussi. Les partants chantaient et dansaient, lorsque les municipaux les menaient le soir à l'Hôtel de ville. Ils disaient à la foule émue : " Chantez donc aussi, vous autres ! criez : Vive la nation ! "

Pass and Honours.

- (b) Le travail de la campagne est agréable à considérer, et n'a rien d'assez pénible en lui-même pour émouvoir à compassion. L'objet de l'utilité publique et privée le rend intéressant : et puis c'est la première vocation de l'homme ; il rappelle à l'esprit une idée agréable, et au coeur tous les charmes de l'âge d'or.

La seule habitude qu'on doit laisser prendre à l'enfant est de n'en contracter aucune ; qu'on ne le porte pas plus sur un bras que sur l'autre ; qu'on ne l'accoutume pas à présenter une main plutôt que l'autre, à s'en servir plus souvent, à vouloir manger, dormir, agir aux mêmes heures, à ne pouvoir rester seul ni nuit ni jour.

Toutes nos langues sont des ouvrages de l'art. On a longtemps cherché s'il y avait une langue naturelle et commune à tous les hommes : sans doute il y en a une ; et c'est celle que les enfants parlent avant de savoir parler.

E

Pass only.

- (c) Tous ces barbares avaient la tête élevée, les couleurs vives, les yeux bleus, le regard farouche et menaçant ; ils portaient de larges braies, et leur tunique était chamarrée de morceaux de pourpre ; un ceinturon de crin pressait à leur côté leur fidèle épée. L'épée du Gaulois ne le quitte jamais : mariée pour ainsi dire avec son maître, elle l'accompagne pendant la vie, elle le suit sur le bûcher funèbre, et descend avec lui au tombeau. Tel était le sort qu'avaient jadis les épouses dans les Gaules, tel est aussi celui qu'elles ont encore aux rivages de l'Indus.

Pass and Honours.

- (d) Ces petites phrases qui ne supportaient pas la discussion, arrachaient un oui ou un non à l'interlocuteur, et la conversation tombait à plat. Monsieur de B. . . . implorait alors l'assistance de son visiteur en mettant à l'ouest son nez de vieux carlin poussif ; il vous regardait de ses gros yeux vairons d'une façon qui signifiait : *Vous dites ?* Les ennuyeux empressés de parler d'eux-mêmes, il les chérissait, il les écoutait avec une probe et délicate attention qui le leur rendait si précieux que les bavards d'Angoulême lui accordaient une sournoise intelligence et le prétendaient mal jugé.

*Les Questions suivantes peuvent se traiter en
Anglais.*

Pass and Honours.

2. Commentez les 4 morceaux précédents (a), (b), (c), (d), en ce qui concerne les ouvrages auxquels ils

appartiennent, ainsi que leurs auteurs. Indiquez aussi les personnages ou les événements dont ils font mention.

Pass only.

3. Quels points d'affinité remarquez-vous entre J. J. Rousseau et Chateaubriand et comment est-il possible de leur appliquer à tous deux le titre de "Fondateur du Romantisme" ?

Pass and Honours.

4. Décrivez longuement la place spéciale que Michelet et Balzac ont su se créer dans la Littérature française. Prouvez que dans celui-là on trouve l'enthousiasme et l'âme d'un poète; et dans celui-ci du romantisme et du réalisme.

Pass and Honours.

5. Jusqu'à quel point A. Daudet est-il naturaliste? Montrez la différence qui existe entre lui et E. Zola. Étendez vous sur cette question.

Honours only.

Traitez en français la question suivante.

Comparez le romantisme français avec le romantisme anglais. Ne vous servez pas seulement de la critique de Brunetière; donnez plutôt le résultat de vos propres pensées.

FRENCH.—PART II.

FIRST PAPER.

The Board of Examiners.

I.—VERSION.

1. Traduisez : (*ni trop littéralement ni trop librement*)—

- (a) Sincerity is the luxury allowed, like diadems and authority, only to the highest rank, *that* being permitted to speak truth, as having none above it to court, to conform unto. Every man alone is sincere. At the entrance of a second person, hypocrisy begins.' We parry and fend the approach of our fellow man by compliments, by gossip, by amusements, by affairs. We cover up our thoughts from him under a hundred folds. Almost every man we meet requires some civility—requires to be humoured; he has some fame, some talent, some whim of religion or philanthropy in his head that is not to be questioned, and which spoils all conversation with him. But a friend is a sane man who exercises not my ingenuity, but me. My friend gives me entertainment without requiring any stipulation on my part.

We are holden to men by every sort of tie, by blood, by pride, by fear, by hope, by lucre, by lust, by hate, by admiration, by every circumstance and badge and trifle, but we can scarce believe that so much character can subsist

as to draw us by love. . . . I wish that friendship should have feet, as well as eyes and eloquence.

- (b) During a visit which he paid to one of his relations, the owner of a house at Chambéry, behind which stretched a garden where he had played in his childhood, Xavier de Maistre wished to revisit alone this scene of his early pleasures. He asked and easily obtained permission from his friend to go there unobserved; but as his visit to this unpretending enclosure was unnecessarily prolonged, his friend, anxious at his long absence, went to look for him, and did not see him; no tree, no salient object could, however, conceal him from sight. At last, after an hour's anxious search, he was discovered by the side of a pool of water, on the surface of which he was throwing small pieces of paper, and was looking at the water-spiders playing round them. "I remember," he said to his friend, "that, when a child, this pastime amused me greatly; I wanted to see whether it would be so now that I am old, and really I have not found a very great difference."

II.—TRADUCTION.

2. Traduisez—

- (a) Concevons que nous voguions pendant un million d'années (*avec la vitesse de la lumière, qui est de 75,000 lieues par seconde*)—Sommes-nous aux confins de l'univers visible?—Voici des immensités noires qu'il faut franchir.—Mais là-bas de nouvelles étoiles s'allument au fond des cieux. Elançons-nous vers elles, atteignons-les.

Nouveau million d'années, nouvelles révélations, nouvelles splendeurs étoilées, nouveaux univers, nouveaux mondes, nouvelles terres, nouvelles humanités.

Eh quoi ! Jamais de fin ? Jamais d'horizon fermé ? Jamais de voûte ? Jamais de ciel qui nous arrête ? toujours l'espace, toujours le vide ? Où donc sommes-nous ? Quel chemin avons-nous parcouru ? . . . Nous sommes . . . au vestibule de l'infini ! Nous n'avons pas avancé d'un seul pas ! Nous sommes toujours au même point ! Le centre est partout, la circonférence nulle part Oui, voilà ouvert devant nous l'infini, dont l'étude n'est pas commencée . . . Nous n'avons rien vu, nous reculons d'épouvante, nous tombons anéantis, incapables de poursuivre une carrière inutile. . . . Eh ! nous pouvons tomber, tomber en ligne droite dans l'abîme béant, tomber toujours dans l'éternité entière, jamais, jamais nous n'atteindrons le fond, pas plus que nous n'avons atteint la cime : que dis-je ? Jamais nous n'en approcherons ! Ni ciel, ni enfer ; ni orient, ni occident ; ni haut, ni bas ; ni gauche, ni droite. En quelque direction que nous considérons l'Univers, il est infini dans tous les sens. Dans cet infini, les associations de soleils et de mondes qui constituent notre univers visible ne forment qu'une île du grand archipel, et dans l'éternité de la durée, la vie de notre planète toute entière n'est que le songe d'un instant.

- (b) Les jours succéderont aux jours, et les années
S'effeuilleront ainsi que des roses fanées,
Avant que je n'étreigne entre ces faibles bras
Les seuls trésors que j'ai adorés ici bas :

La gloire et le génie. Et pourtant, comme
j'aime

Ces Lettres dont j'ai fait ma volupté suprême !
Comme j'entends vibrer tout mon coeur dans
les mots !

Ce qu'ils m'ont prodigué de plaisirs et de maux,
Ce que j'ai consumé de nuits passionnées
A guetter une phrase au vol, et de journées !

Créer ! sentir les mots palpiter sur la page,
Les entendre frémir d'amour, pleurer de rage,
Et moi-même avec eux vibrer, souffrir, crier. .
Etre en eux comme Dieu dans le monde. Créer !

III.—SYNTAXE COMPARÉE.

(Répondez en anglais aux questions suivantes.)

- (a) Montrez, au moyen d'exemples, les points de différence les plus saillants dans l'emploi du passif en anglais et en français.
- (b) Comment doit-on traduire en anglais les mots ci-dessous en italique ? Expliquez cette traduction.

Ils voient *clair* dans leurs affaires ;
Il me parla tout *franc* ;
Ils étaient tout surpris et indignés ;
Ils *se contentèrent* d'examiner mes papiers.

FRENCH.—PART II.

SECOND PAPER.

The Board of Examiners.

PRESCRIBED AUTHORS.

1. Traduisez (*en soignant le style et la précision des expressions*).

- (a) Sa manière littéraire ne m'a pourtant pas servi de type, et dans des moments où ma pensée éprouvait le besoin d'une expression hardie, sa forme délicate et adroite m'a paru plus propre à m'empêtrer qu'à me dégager. Mais quand les heures de fièvre sont passées, on revient à cette forme un peu *vanlootée*, comme on revient à Vanloo lui-même, pour en reconnaître la vraie force et la vraie beauté à travers le caprice de l'individualité et le cachet de l'école ; sous ces mièvreries souriantes de la recherche, il y a quand même le génie du maître.

Les superstitions rustiques lui venaient en droite ligne de la religion des druides, cette doctrine peu connue dans son essence, car on ne l'a jugée que d'après les crimes qui l'ont souillée et dénaturée. La vierge Marie et le grand'fade se confondaient étrangement dans l'imagination poétiquement sauvage de la bergère d'Ep-Nell.

- (b) Ce sont eux qui ont osé croire les premiers qu'il suffisait du tableau des affections privées pour intéresser l'esprit et le cœur de l'homme ;

que ni l'illustration des personnages, ni l'importance des intérêts, ni le merveilleux des événements, n'étaient nécessaires pour captiver l'imagination, et qu'il y avait dans la puissance d'aimer de quoi renouveler sans cesse et les tableaux et les situations, sans jamais lasser la curiosité. Ce sont eux enfin qui ont fait des romans des ouvrages de morale où les vertus et les destinées obscures peuvent trouver des motifs d'exaltation et se créer un genre d'héroïsme.

- (c) Nous croyons que l'auteur d'un bon ouvrage doit se garder de trois choses, du titre, de l'épître dédicatoire, et de la préface. Les autres doivent se garder d'une quatrième, c'est d'écrire.

L'épître dédicatoire n'a été souvent présentée que par la bassesse intéressée, à la vanité dédaigneuse :

De là vient cet amas d'ouvrages mercenaires ;
Stances, odes, sonnets, épîtres liminaires,
Où toujours le héros passe pour sans pareil,
Et, fût-il louche ou borgne, est réputé soleil.

On étouffe l'esprit des enfants sous un amas de connaissances inutiles ; mais de toutes les sciences la plus absurde à mon avis, et celle qui est la plus capable d'étouffer toute espèce de génie, c'est la géométrie. Cette science ridicule a pour objet des surfaces, des lignes et des points qui n'existent pas dans la nature. On fait passer en esprit cent mille lignes courbes entre un cercle et une ligne droite qui le touche, quoique,

dans la réalité, on n'y puisse pas passer un fétu. La géométrie, en vérité, n'est qu'une mauvaise plaisanterie.

- (d) Il n'y avait à cet endroit qu'un assez gros volume allemand, relié en peau de truie, avec des clous de cuivre aux plats et d'épaisses nervures sur le dos. . . . Le volume dont les plats étaient légèrement entre-baillés, reposait sur sa tranche médiane.

Sa bouche était impérieuse et ironique et ses yeux bleus riaient d'une façon inquiétante sous des sourcils noirs, dont l'arc était très pur.

Pour ma part, je ne découvre dans l'humanité aucun signe de déclin, j'ai beau entendre parler de la décadence. Je n'y crois pas. Je ne crois pas même que nous soyons parvenus au plus haut point de civilisation. Je crois que l'évolution de l'humanité est extrêmement lente et que les différences qui se produisent d'un siècle à l'autre dans les moeurs sont, à les bien mesurer, plus petites qu'on ne s'imagine. Mais elles nous frappent. Et les innombrables ressemblances que nous avons avec nos pères, nous ne les remarquons pas. Le train du monde est lent.

- (e) L'histoire ne résout pas les questions; elle nous apprend à l'examiner. Elle nous enseigne au moins comment il faut s'y prendre pour observer les faits humains, Le regard que nous jetons sur les choses présentes est toujours troublé par quelque intérêt personnel, quelque préjugé ou quelque passion. Voir juste est presque impossible. S'il s'agit au contraire du passé, notre regard est plus calme et plus sûr.

*Les Questions Suivantes Peuvent se Traiter en
Anglais.*

2. Commentez à fond les morceaux précédents (a), (b), (c), (d), (e), en ce qui concerne leur origine et leurs auteurs.
3. Nommez les cinq divisions littéraires dans lesquelles apparaît le talent de Voltaire comme prosateur et indiquez brièvement le rôle qu'il a joué dans le roman et l'histoire.
4. Discutez l'assertion suivante : que Mme de Stael est une des femmes écrivains les plus importantes que le monde ait vues. Est-ce tout à fait juste en ce qui concerne son style et sa conception du roman ?
5. Contrastez le style de G. Sand et celui d'A France et montrez les influences religieuses, politiques et littéraires qui ont agi sur l'œuvre de ces deux romanciers.
6. En quoi le naturalisme de Daudet diffère-t-il de celui d'E. Zola ?
7. Donnez des notes très succinctes des œuvres et du style des écrivains suivants : Augustin Thierry, Michelet, Thiers et Fustel de Coulanges.

FRENCH.—PARTS I. AND II.

THIRD PAPER.

HISTORY OF THE LITERATURE AND
LANGUAGE.

(Les réponses peuvent se faire en anglais.)

The Board of Examiners.

PASS AND HONOUR PAPER.

I.—HISTOIRE DE LA LITTÉRATURE.

Traitez SEULEMENT CINQ des questions suivantes, mais en comprenant toujours dans votre choix les questions (a), (c), (f).

- (a) Indiquez d'une manière concise et claire les traits saillants de l'histoire du Roman en France depuis d'Urfé jusqu'à Flaubert. Enumérez à grands traits les écrivains qui ont illustré cette branche importante de la Littérature pendant toute cette période. Mentionnez leurs œuvres principales.
- (b) Pourquoi les Chroniqueurs occupent-ils une place si importante au Moyen-Age, en ce qui concerne l'histoire ? Qui étaient-ils ? De qui ont-ils pris la place and quels sont leurs ouvrages ?
- (c) Quel rôle la science et la philosophie jouent-elles dans l'histoire du Roman ? Qu'entend-on par roman à thèse, roman romantique, roman historique et roman naturaliste ? Dans quelles

périodes de la Littérature trouve-t-on des exemples de ces différents genres ? quels en sont les principaux représentants ? Citez les ouvrages les mieux connus.

- (d) A quelles époques de la Littérature peut-on constater l'influence des écrivains anglais sur les romanciers français ? Quels étaient ces écrivains et ces romanciers ? Étendez-vous longuement sur cette question.
- (e) Quelles ont été les différentes tendances du roman en France depuis le XVIIe siècle jusqu'à nos jours et quelles sont les causes de la popularité du roman moderne ?
- (f) Montrez brièvement en quoi diffèrent les Chroniqueurs du Moyen-Age, les écrivains de Mémoires des XVIe and XVIIe siècles et les Historiens des XVIIIe and XIXe siècles ? Citez des faits, des noms et des ouvrages.
- (g) Ecrivez une note détaillée sur chacun des écrivains suivants : Pascal, Mme. de Sévigné, Bossuet, Fénelon, Fustel de Coulanges.

II.—HISTOIRE DE LA LANGUE.

1. Part II.—Qu'entendez-vous par Epopée nationale et Romans d'aventures ? Quelles autres divisions complètent ce qu'on appelle Poésie Epique ? quel est le caractère général des extraits que vous avez lus de cette épopée et quels sont ces extraits ? Donnez-en des détails très concis.
2. Part I.—Tracez rapidement les progrès du dialecte de l'Ile de France depuis les origines jusqu'après la croisade contre les Albigeois.

GERMAN.—PART I.

FIRST PAPER.

The Board of Examiners.

PRESCRIBED AUTHORS.

1. Translate, locate, and annotate—

- (a) Der du von dem Himmel bist,
 Alles Leid und Schmerzen stillest,
 Den, der doppelt elend ist,
 Doppelt mit Erquickung füllest,
 Ach, ich bin des Treibens müde!
 Was soll all der Schmerz und Lust?
 Süszer Friede,
 Komm, ach komm in meine Brust!
- (b) Geh! gehorche meinen Winken,
 Nutz' deine jungen Tage,
 Lerne zeitig klüger sein.
 Auf des Glückes grosser Wage
 Steht die Zunge selten ein;
 Du must steigen oder sinken,
 Du must herrschen und gewinnen,
 Oder dienen und verlieren,
 Leiden oder triumphieren,
 Amboss oder Hammer sein.
- (c) Kennst du den Berg und seinen Wolkensteg?
 Das Maultier sucht im Nebel seinen Weg;
 In Höhlen wohnt der Drachen alte Brut;
 Es stürzt der Fels und über ihn die Flut.
 Kennst du ihn wohl?
 Dahin! Dahin
 Geht unser Weg! o Vater, lass uns ziehn!

2. Translate and explain—

(a) Diese Gondel vergleich' ich der sanft einschaukelnden Wiege,
Und das Kästchen darauf scheint ein geräumiger Sarg.

Recht so! Zwischen der Wieg' und dem Sarg
wir schwanken und schweben
Auf dem grossen Canal sorglos durch's
Leben dahin.

(b) Wiszt ihr, wie auch der Kleine was ist? Er
mache das Kleine
Recht; der Grosze begehrt just so das
Grosze zu tun.

(c) Lange haben die Groszen der Franzen Sprache
gesprochen,
Halb nur geachtet den Mann, dem sie vom
Munde nicht floss:
Nun lallt alles Volk entzückt die Sprache
der Franken;
Zürnet, Mächtige, nicht! Was ihr verlangt, geschieht.

3. Translate, locate, and comment upon the following passage:—

Aber aus der dumpfen grauen Ferne
Kündet leise wandelnd sich der Sturm an,
Drückt die Vögel nieder auf's Gewässer,
Drückt der Menschen schwellend Herz dar-
nieder,
Und er kommt. Vor seinem starren Wüten
Streckt der Schiffer klug die Segel nieder;
Mit dem angsterfüllten Balle spielen
Wind und Wellen.

Und an jenem Ufer drüben stehen
 Freund' und Lieben, beben auf dem Festen :
 Ach, warum ist er nicht hier geblieben !
 Ach, der Sturm! Verschlagen weg vom
 Glücke!
 Soll der Gute so zu Grunde gehen ?
 Ach, er sollte! ach, er könnte! Götter!
 Doch er stehet männlich an dem Steuer :
 Mit dem Schiffe spielen Wind und Wellen,
 Wind und Wellen nicht mit seinem Herzen ;
 Herrschend blickt er auf die grimme Tiefe,
 Und vertrauet, scheiternd oder landend,
 Seinen Göttern.

4. Translate and locate—

Und er richtete den Zeigefinger,
 Der so rötlich war wie eine Rose,
 Nach dem weiten ausgespannten Teppich,
 Fing mit seinem Finger an zu zeichnen :
 Oben malt' er eine schöne Sonne,
 Die mir in die Augen mächtig glänzte,
 Und den Saum der Wolken macht' er golden,
 Liess die Strahlen durch die Wolken dringen ;
 Malte dann die zarten leichten Wipfel
 Frisch erquickter Bäume, zog die Hügel,
 Einen nach dem andern, frei dahinter ;
 Unten liess er's nicht an Wasser fehlen,
 Zeichnete den Fluss so ganz natürlich,
 Dasz er schien im Sonnenstrahl zu glitzern,
 Dasz er schien am hohen Rand zu rauschen.

5. Translate into idiomatic English and annotate :

- (a) Dasz er gleich den Brüdern eine höhere Schule besuchen würde, daran war nicht zu denken. Die Mutter hegte wohl eine Zeit lang den Plan,

ihn den Älteren folgen zu lassen, sobald diese das Abiturientenexamen gemacht haben würden, denn es tat ihrem Herzen wehe, dass dieser einen anderen nachstehen sollte, aber schließlich fügte sie sich. Und es war wohl auch am besten so. Paul selber hatte es nie anders erwartet. Er hielt sich für ein durchaus untergeordnetes Wesen den Brüdern gegenüber und hatte es schon längst aufgegeben, ihnen jemals zu gleichen. Wenn sie zu den Ferien heimkamen, Sammetmützen auf den wallenden Haaren, bunte Bänder quer über die Brust gespannt—denn sie gehörten einer verbotenen Schülerverbindung an—so schaute er zu ihnen empor wie zu Wesen aus höheren Welten. Begierig lauschte er, wenn sie untereinander über Sallust und Cicero und die Dramen des Aeschylus sprachen—und sie sprachen gern davon, schon allein, um ihm zu imponieren. Der Gegenstand seiner allerhöchsten Bewunderung aber war das dicke Buch, auf dessen vorderster Seite das Wort "Logarithmentafel" geschrieben stand. Wie gelehrt muss der sein, der das alles im Kopfe hat? sagte er sich, den Deckel des Buches streichelnd, denn er dachte nicht anders, als dass man alle diese Zahlen auswendig lernte.

(b) Der Verteidiger hatte geendet. Ein Murmeln ging durch den weiten Schwurgerichtssaal, dessen Galerie von dichtgedrängten Köpfen starnte.

Wenn der Angeklagte die Wirkung des glänzenden Plaidoyers durch ein unbedachtes Wort nicht wieder verdarb, so war er gerettet.

Die Replik des Staatsanwalts verhallte ungehört.

F

Und nun klirrten die Lorgnetten und Operngucker. Aller Augen wandten sich nach dem blassen, schlicht gekleideten Manne, der auf demselben Armensünderbänkchen saß, auf welchem vor acht Jahren der tückische Knecht gesessen hatte.

Der Präsident hatte gefragt, ob der Angeklagte noch etwas zur Erhärtung seiner Unschuld beizubringen habe.

“Schweigen, Schweigen!” ging es murmelnd durch den Saal.

Aber Paul erhob sich und sprach, erst leise und stockend, doch sicherer von Augenblick zu Augenblick :

“Es tut mir von Herzen leid, dasz die Mühe, welche sich der Herr Rechtsanwalt gegeben hat, mich zu erretten, umsonst gewesen sein soll. Aber ich bin nicht so unschuldig an der Tat, wie er mich darstellt.”

6. Translate and locate the following passages :—

- (a) Nein, eine Grenze hat Tyrannenmacht
 Wenn der Gedrückte nirgends Recht kann
 finden,
 Wenn unerträglich wird die Last, greift er
 Hinauf getrost den Mutes in den Himmel
 Und holt herunter seine ew'gen Rechte,
 Die droben hangen unveräuszerlich
 Und unzerbrechlich, wie die Sterne selbst.
 Der alte Urstand der Natur kehrt wieder,
 Wo Mensch dem Menschen gegenübersteht.
 Zum letzten Mittel, wenn kein andres mehr
 Verfangen will, ist ihm das Schwert gegeben—
 Der Güter höchstes dürfen wir verteid'gen
 Gegen Gewalt. Wir stehn vor unser Land,
 Wir stehn vor unsre Weiber, unsre Kinder!

- (b) Auf dieser Bank von Stein will ich mich setzen,
 Dem Wanderer zur kurzen Ruh bereit
 Denn hier ist keine Heimat. Jeder treibt
 Sich an dem andern rasch und fremd vorüber
 Und fraget nicht nach seinem Schmerz. Hier
 geht
 Der sorgenvolle Kaufmann und der leicht
 Geschürzte Pilger, der andächt'ge Mönch,
 Der düstre Räuber und der heitre Spielmann,
 Der Säumer mit dem schwer beladnen Rosz,
 Der ferne herkommt von der Menschen
 Ländern,
 Denn jede Strasse führt ans End' der Welt.
 Sie alle ziehen ihres Weges fort
 An ihr Geschäft und meines ist der Mord !

 GERMAN.—PART I.

SECOND PAPER.

(COMPOSITION, UNSEEN TRANSLATION, PHONETICS, AND
 GRAMMAR.)

The Board of Examiners.

1. Translate into German—

My dear Lord Houghton—It is very kind of you to remember me at this time, and to send me the gift of your two volumes. I thank you warmly for your kindness. I came down here on Monday, and the time of the journey passed rapidly as I read portions of your first volume. I have a great love of poetry; but I suspect few have less capacity for writing it than I have. What makes it easy to some and impossible to others I cannot understand. I console myself with the belief that it is necessary

for some of us to write and speak only in prose. And so you are to lose your now only daughter. It is cruel, but inevitable. I have four daughters now scattered and gone, and my house is almost as lonely as yours. My boys remain with me, but they do not make up for the loss of my girls. I hope your daughters will be happy, and that their happiness will do something to lessen the misery of having lost them. I remember the pleasant evenings at F—, and I can imagine how changed is now the scene; but I will not further moralise.

Believe me, always sincerely yours,

JOHN BRIGHT.

Kelso, 25th November, 1881.

2. Translate into English—

- (a) Als sie nun endlich in die kühlen Schatten des duftenden Waldes traten, als die Büsche wie in sehnsüchtigen Seufzern flüsterten, als die wunderbaren Melodien der rauschenden Bäche, die Lieder der Vögel fernhin tönend und den Widerhall weckten, der ihnen aus den Bergen antwortete, da stand Balthasar plötzlich still und rief, indem er die Arme weit ausbreitete, als woll' er Baum und Gebüsch liebend umfassen: "O, nun ist mir wieder wohl, unbeschreiblich wohl. In der Stadt ist mir oft zu Mute, als wollten die Häuser über meinem Kopf zusammenstürzen; eine unsagbare Angst treibt mich hinaus. Aber hier, hier erfüllt bald mein Gemüt eine süsse Ruhe. Auf den blumigen Rasen gelagert, schaue ich hinauf in das weite Blau des Himmels, und über mir, über den jubelnden Wald hinweg, ziehen die goldenen Wolken wie

herrliche Träume aus einer fernen Welt voll seliger Freuden. O mein Freund, dann erhebt sich aus meiner eigenen Brust ein wunderbarer Geist, und ich vernehm' es, wie er in geheimnisvollen Worten spricht mit den Büschen, mit den Bäumen, mit den Wogen des Waldbachs, und nicht vermag ich die Wonne zu nennen, die dann in wehmütigem Bangen mein ganzes Wesen durchströmt."

- (b) Man meint immer, man müsse alt werden um gescheit zu sein ; im Grunde aber hat man bei zunehmenden Jahren zu tun, sich so klug zu erhalten wie man gewesen ist. Der Mensch wird in seinen verschiedenen Lebensstufen wohl ein anderer, aber man kann nicht sagen, dass er ein besserer werde, und er kann in gewissen Dingen so gut in seinem zwanzigsten Jahre recht haben wie in seinem sechzigsten. Wenn daher ein Schriftsteller aus verschiedenen Epochen seines Lebens Werke zurücklässt, so kommt es besonders darauf an, dass er ein angeborenes Fundament und Wohlwollen besitze, dass er auf jeder Stufe rein gesehen und empfunden, und ohne Nebenzwecke gerade und treu gesagt habe wie er gedacht. Dann wird sein Geschriebenes, wenn es auf der Stufe recht war, wo es entstand, auch ferner recht bleiben, der Autor mag sich auch später entwickeln und verändern wie er will.

3. (a) What is understood by a "continuant" ? What by a "nasal consonant" ?
- (b) Show the difference in the pronunciation of: E. "hole" G. "hohl"; E. "stand" G. "stand"; E. "feel" G. "viel"; E. "hurt" G. "hört."

- (c) Transcribe the first sentence of the passage given above under 2 (b) (from "*Man*" to "*gewesen ist.*") in phonetic spelling.
4. (a) Give the nominative singular of all the nouns in the plural occurring in the passage given under 2 (a), and the nominative plural of all those in the singular, with the definite article.
- (b) Give the first person singular of the imperfect indicative, and the past participle, of all the strong or irregular verbs in the same passage.
- (c) Write out the first four sentences of B's speech in the same passage as they would sound in indirect narration ("*Er rief, nun sei ihm wieder wohl,*" &c., to "*Freuden*").

GERMAN.

PART I.—HONOURS, and

PART II.—PASS (FIRST PAPER).—(COMPOSITION AND UNSEEN TRANSLATION.)

The Board of Examiners.

1. Translate into German :

- (a) I cannot understand the rage manifested by the greater part of the world for reading new books. If the public had read all the books that have gone before, I can conceive how they should not wish to read the same work twice over ; but when I consider the countless volumes that lie unopened, unregarded, unread, and

unthought of, I cannot enter into the pathetic complaints that I hear made, that Sir Walter writes no more, that the press is idle, that Lord Byron is dead. If I have not read a book before, it is, to all intents and purposes, new to me, whether it was printed yesterday or three hundred years ago. If it be urged that it has no modern, passing incidents, and is out of date and old-fashioned, then it is so much the newer; it is further removed from other works that I have lately read, from the familiar routine of ordinary life, and makes so much more addition to my knowledge. But many people would as soon think of putting on an old armour as of taking up a book not published within the last month, or year at the utmost. There is a fashion in reading as well as in dress, which lasts only for the season.

- (b) I continued the labours of the village-school as actively and faithfully as I could. It was truly hard work at first. Some time elapsed before, with all my efforts, I could comprehend my scholars and their nature. Wholly untaught, with faculties quite torpid, they seemed to me hopelessly dull; and, at first sight, all dull alike, but I soon found I was mistaken. There was a difference among them as amongst the educated; and when I got to know them, and they me, this difference rapidly developed itself. Their amazement at me, my language, my rules, and ways, once subsided, I found some of these heavy-looking, gaping rustics wake into sharp-witted girls enough. Many showed themselves obliging, and amiable, too; and I discovered amongst them not a few examples of natural

- politeness, and innate self-respect, as well as of excellent capacity, that won both my good-will and my admiration. The rapidity of their progress, in some instances, was even surprising; and an honest and happy pride I took in it.

2. Translate into English :

- (a) Alle Bücher, die je geschrieben wurden, vom ältesten bis zum jüngsten, stehen in einem geheimnisvollen Zusammenhang. Denn keiner, der ein Buch geschrieben, ist durch sich selbst geworden, was er uns ist, jeder steht auf den Schultern seiner Vorgänger, Alles, was vor ihm geschaffen wurde, hat irgendwie dazu geholfen, ihm Geist und Seele zu bilden. Und wieder, was er geschaffen, hat irgendwie andre Menschen gebildet, und aus seinem Geist ist in spätere übergegangen. So bildet der Inhalt aller Bücher ein groszes Geisterreich auf Erden, von den vergangenen Seelen leben und nähren sich alle, welche jetzt schaffen. In diesem Sinne ist der Geist des Menschengeschlechts eine unermessliche Einheit, der jeder Einzelne angehört, der einst lebte und schuf, der jetzt atmet und Neues wirkt. Der Geist, den die vergangenen Menschen als ihren eigenen empfanden, er ging und geht jeden Tag in Andre über. Was heut geschrieben ist, wird morgen vielleicht die Habe von tausend Fremden, wer längst seinen Leib der Natur zurückgegeben hat, lebt unaufhörlich in neuem irdischem Dasein fort, und wird täglich in Tausenden auf's Neue lebendig.
- (b) Das Geschlecht, das Venedig gegründet, hat sich nicht zum Spasz auf diese Inseln geflüchtet; es war keine Willkür, welche die Folgenden

trieb, sich mit ihnen zu vereinigen: die Not lehrte sie, ihre Sicherheit in der unvorteilhaftesten Lage suchen, die ihnen nachher so vorteilhaft ward und sie klug machte. Nun drängten sich die Wohnungen empor; Sand und Sumpf wurden durch Felsen ersetzt; die Häuser suchten die Luft, wie Bäume, die geschlossen stehen: sie muszten an Höhe zu gewinnen suchen was ihnen an Breite abging. Auf jede Spanne des Bodens geizig, und gleich anfangs in enge Räume gedrängt, lieszen sie zu Gassen nicht mehr Platz, als nötig war, eine Hausreihe von der gegenüberstehenden zu trennen und dem Bürger notdürftige Durchgänge zu erhalten. Im übrigen war ihnen das Wasser statt Strasse, Platz und Spaziergang. Der Venezianer muszte eine neue Art von Geschöpf werden, wie man denn auch Venedig nur mit sich selbst vergleichen kann.

—(GOETHE, "ITALIENISCHE REISE.")

- (c) Wohl dem, selig musz ich ihn preisen,
 Der in der Stille der ländlichen Flur,
 Fern von des Lebens verworrenen Kreisen,
 Kindlich liegt an der Brust der Natur!
 Denn das Herz wird mir schwer in der Fürsten
 Palästen,
 Wenn ich herab vom Gipfel des Glücks
 Stürzen sehe die Höchsten, die Besten
 In der Schnelle des Augenblicks.

Und auch der hat sich wohl gebettet,
 Der aus der stürmischen Lebenswelle,
 Zeitig gewarnt, sich herausgerettet
 In des Klosters friedliche Zelle;
 Der die stachelnde Sucht der Ehren

Von sich warf und die eitle Lust,
 Und die Wünsche, die ewig begehren,
 Eingeschläfert in ruhiger Brust.
 Ihn ergreift in dem Lebensgewühle
 Nicht der Leidenschaft wilde Gewalt;
 Nimmer in seinem stillen Asyle
 Sieht er der Menschheit traur'ge Gestalt.

Auf den Bergen ist Freiheit! Der Hauch
 der Grüfte
 Steigt nicht hinauf in die reinen Lüfte;
 Die Welt ist vollkommen überall,
 Wo der Mensch nicht hinkommt mit seiner
 Qual.

—(SCHILLER, "DIE BRAUT VON MESSINA.")

GERMAN.—PART II.

SECOND PAPER.

The Board of Examiners

1. Translate, with brief marginal notes where necessary:
 - (a) Der Kaufmann bei uns erlebt ebenso viel Groszes, Empfindungen und Taten, als irgend ein Reiter unter den Arabern oder Indern. Je ausgebreiteter sein Geschäft ist, desto mehr Menschen hat er, deren Glück oder Unglück er mit fühlen musz, und desto öfter ist er selbst in der Lage, sich zu freuen oder Schmerzen zu empfinden. Neulich hat hier ein groszes Haus Bankerott gemacht. Wenn Sie die Gewitterschwüle empfunden hätten, welche auf dem

Geschäft lag, bevor es fiel, die furchtbare Verzweiflung des Mannes, den Schmerz der Familie, die Hochherzigkeit seiner Frau, welche ihr eigenes Vermögen bis zum letzten Taler in die Masse warf, um die Ehre ihres Mannes zu retten, Sie würden nicht sagen, dasz unser Geschäft arm an Leidenschaften und groszen Gefühlen ist. Trübe Erfahrungen hat der Kaufmann freilich in Menge zu machen. Der kleine Ärger fehlt ihm nicht, und vieles Schlechte musz er erleben, aber der ganze Handel ist doch so sehr auf die Redlichkeit Anderer und auf die Güte der menschlichen Natur berechnet, dasz ich bei meinem Eintritt in diese Tätigkeit erstaunt war. Wer ein ehrliches Geschäft hat, kann von unserm Leben nicht schlecht denken, er wird immer Gelegenheit haben, Schönes und Groszartiges darin zu finden.

(b) "Wer hat die grosze Landschaft erobert, in der ich geboren bin?"

"Einer, der ein Mann war."

"Ein trotziger Landwirt war's," rief Anton, "er und andere seines Hauses. Mit dem Schwert oder durch List, durch Vertrag oder mit Überfall, auf jede Weise haben sie den Boden an sich gezogen, in einer Zeit, wo im übrigen Deutschland fast alles tot und erbärmlich war. Als kühne Männer und gute Wirtschafter, die sie waren, haben sie ihren Boden verwaltet. Sie haben Gräben gezogen durch das Moor, haben Menschen hingepflanzt in leeres Gebiet und haben sich ein Geschlecht gezogen, hart, arbeitsam, begehrllich, wie sie selbst waren. Sie haben einen Staat gebildet aus verkommenen oder zertrümmerten Stämmen, sie haben mit

großem Sinn ihr Haus als Mittelpunkt für viele Millionen gesetzt und haben aus dem Brei unzähliger nichtiger Souveränitäten eine lebendige Macht geschaffen."

- (c) Write a short appreciation of Freytag's "Soll und Haben."

2. Translate, locate, and comment upon the following passages :—

- (a) Ich freue mich, wenn kluge Männer sprechen,
 Dass ich verstehen kann, wie sie es meinen.
 Es sei ein Urteil über einen Mann
 Der alten Zeit und seiner Taten Wert ;
 Es sei von einer Wissenschaft die Rede,
 Die, durch Erfahrung weiter ausgebreitet,
 Dem Menschen nutzt, indem sie ihn erhebt ;
 Wohin sich das Gespräch der Edlen lenkt,
 Ich folge gern, denn mir wird leicht zu folgen.
 Ich höre gern dem Streit der Klugen zu,
 Wenn um die Kräfte, die des Menschen Brust
 So freundlich und so fürchterlich bewegen,
 Mit Grazie die Rednerlippe spielt ;
 Gern, wenn die fürstliche Begier des Ruhms,
 Des ausgebreiteten Besitzes Stoff
 Dem Denker wird, und wenn die feine Klugheit,
 Von einem klugen Manne zart entwickelt,
 Statt uns zu hintergehen, uns belehrt.
- (b) O glaube mir, ein selbstisches Gemüt
 Kann nicht der Qual des engen Neids entfliehen.
 Ein solcher Mann verzeiht dem andern wohl
 Vermögen, Stand und Ehre ; denn er denkt,
 Das hast du selbst, das hast du, wenn du willst,
 Wenn du beharrst, wenn dich das Glück
 begünstigt.
 Doch das, was die Natur allein verleiht,

Was jeglicher Bemühung, jedem Streben
Stets unerreichbar bleibt, was weder Gold,
Noch Schwert, noch Klugheit, noch Beharr-
lichkeit

Erzwingen kann, das wird er nie verzeihn.

- (c) Die wahre Freundschaft zeigt sich in Versagen
Zur rechten Zeit, und es gewährt die Liebe
Gar oft ein schädlich Gut, wenn sie den Willen
Des Fordernden mehr als sein Glück bedenkt.
Du scheinst mir in diesem Augenblick
Für gut zu halten, was du eifrig wünschest,
Und willst im Augenblick, was du begehrest.
Durch Heftigkeit ersetzt der Irrende.
Was ihm an Wahrheit und an Kräften fehlt.

- (d) Zeigen Sie, auf Deutsch, in wie weit die
Verhältnisse, Personen und das Problem von
Goethe's "Tasso" denen entsprechen, die Goethe
am Hofe zu Weimar fand.

3. Give a survey of Lessing's work as the greatest
German representative of the "Aufklärung,"
with a more detailed reference to his "Laokoon"
and the "Hamburgische Dramaturgie."

GERMAN.—PART II.

THIRD PAPER.

The Board of Examiners.

I.

1. Geben Sie eine kurze Uebersicht über die "Roman-
tischen Schulen" in Deutschland, mit den Namen
und Daten ihrer Hauptvertreter, und zeigen Sie
die Bedeutung der romantischen Bewegung.

2. Was wissen Sie von Walther von der Vogelweide ?
3. Die sechs grossen Dichter der klassischen Zeit des 18ten Jahrhunderts sind Klopstock, Lessing, Wieland, Herder, Goethe, und Schiller. Geben Sie ganz kurz, in einem oder zwei Sätzen für jeden, die Bedeutung der vier ersten von diesen an.
4. Wann und mit wem beginnt die Bildung der neuhochdeutschen Schriftsprache, und welche Männer haben sich besonders um ihre Entwicklung verdient gemacht ?
5. Geben Sie die Namen der Verfasser (wenn bekannt), die Zeit der Entstehung, und die Gattung (Drama, Roman u.s.w.) der folgenden Werke:—
 (a) "Die Leute von Seldwyla"; (b) "Das Waltharilied"; (c) "Agathon"; (d) "Aus dem Leben eines Taugenichts"; (e) "Maler Nolten"; (f) "Gudrun."

II.

Schreiben Sie einen deutschen Aufsatz über eines der folgenden Themas—

"Des Lebens Mühe lehrt uns allein des Lebens Güter schätzen."

"Es bildet ein Talent sich in der Stille,
Sich ein Charakter in dem Strom der Welt."

"Willst du genau erfahren, was sich ziemt,
So frage nur bei edlen Frauen an."

ANCIENT HISTORY.

Professor Elkington.

PASS AND FIRST HONOUR PAPER.

Answer fully and clearly TEN, and only Ten, of the following questions.

1. Describe the geographical position of the following places, and mention any important historical events connected with them :—Alesia, Corfinium, Delos, Dyrrhachium, Ilerda, Mylae, Praeneste, Tanagra.
2. Write notes on *diminutio capitis*, *jus Latinum*, *Lar familiaris*, *municipium*, *plebiscitum*, *provocatio*, *proximus agnatus*, *senatus auctoritas*.
3. What influences, social, religious, and literary, throughout Grecian history tended to counteract political disunion ?
4. Discuss the origin and the effects of despotic government in Greece.
5. What was the Theoric Fund, and how did it affect public policy ?
6. Explain the origin and development of the Roman Tribunate.
7. Sketch the history of the Roman Senate.
8. What were the grievances which Tiberius Gracchus proposed to alleviate, and how far was he successful ?

9. Enumerate the extra-Italian possessions of Rome in the times of the Gracchi, and point out shortly the circumstances leading to the acquisition of each.
10. What were the causes of the Social War, and by what concessions was it terminated ?
11. Write a short account of either Gaius Marius or Lucius Cornelius Sulla.
12. What was the nature and what the object of the First Triumvirate ?
13. Explain the principle on which Provinces were divided between the Senate and the Emperor.

HISTORY OF THE BRITISH EMPIRE.—PART I.

PASS AND FIRST HONOUR PAPER.

Professor Elkington.

Answer fully and clearly TEN, and only Ten, of the following questions.

1. How far, if at all, did the Roman occupation of Britain affect the country permanently ?
2. How did Canute acquire his power in England ? How did he confirm it ?
3. Explain the meaning and the importance of the Assembly at Salisbury in 1086.

4. Give a short account of the state of literature in England during the reign of Henry the Second.
5. Write notes on :—The Barons' War; Benevolences; The Cabal; Impeachment; The Pilgrimage of Grace; Tonnage and Poundage.
6. Trace briefly the origin of the House of Commons
7. Write an account of the reign of Richard the Second.
8. Give some account of the history of the continental possessions of England to the middle of the fifteenth century.
9. Give some account (*a*) of the foreign, and (*b*) of the domestic, policy of Henry the Seventh.
10. Estimate briefly Cardinal Wolsey's place in the history of England.
11. Give a summary of the results of the Renaissance in England.
12. Give a short account of the part played in Irish history by (*a*) the O'Neills, (*b*) Wentworth, (*c*) Chichester.
13. Trace the causes which led to the Parliamentary opposition to Charles the First.
14. Trace briefly the history of the means by which the Restoration was accomplished.

HISTORY OF THE BRITISH EMPIRE.—PART II.

Professor Elkington.

Answer fully and clearly TEN, and only Ten, of the following questions.

1. Why was James the Second a failure ?
2. To what events did the Revolution of 1688-9 give rise in Scotland ?
3. Write notes on :—The Non-Jurors ; Wood's half-pence ; the lines of Torres Vedras.
4. Write notes on :—The Peerage Bill ; Occasional Conformity ; the Six Acts.
5. Describe the efforts of George the Third to increase his power. Was he successful ?
6. Give an account of the struggle between Parliament and John Wilkes.
7. What is meant by the "Industrial Revolution ?" Describe its chief results, social and political.
8. Indicate the merits of the government of William Pitt as a peace minister.
9. How^d do you account for the opposition to the French Revolution in Great Britain ?
10. What was the "Old Colonial System," and to what results did it lead ?

11. With what powers did England successively come into contact in North America? State briefly the results.
12. Discuss the chief problems of domestic policy which were dealt with by the governments of George the Fourth.
13. Trace the history of the growth of the freedom of the press in England.
14. What does India owe to (a) Warren Hastings, (b) Lord Dalhousie?

POLITICAL ECONOMY.

Professor Elkington.

Answer fully and clearly TEN, and only Ten, of the following questions.

- 1: "The Laws of Economics are statements in the indicative mood of relations between causes and effects, and not precepts in the imperative mood." Comment upon this statement.
2. Indicate the more important conditions on which the efficiency of labour depends.
3. Define Capital, and justify your definition.
4. Define Exchange, and justify your definition.

5. Distinguish between—(a) Goods and Wealth, (b) Profit and Interest, (c) Total Utility and Marginal Utility.
6. Enumerate some of the chief causes of difference between Real Wages and Nominal Wages.
7. (a) In what circumstances are joint stock companies likely to succeed ?
(b) Compare the advantages of joint stock companies with those of private firms in various kinds of industrial undertakings.
8. What is meant by the Law of Diminishing Returns? Is there a Law of Increasing Returns? If so, state it.
9. Write explanatory notes on—(a) Market, (b) Natural price, (c) Seigniorage, (d) Unproductive Labour.
10. Show the importance of Statistics as an auxiliary to economic inquiry.
11. What are the chief characteristics of a good system of Taxation.
12. Elucidate Walker's remark that "the value of money is determined by demand and supply."
13. (a) Why does Great Britain import more than she exports ?
(b) Why do the prices of foreign bills fluctuate ?
(c) What is meant by the Foreign Exchanges ?

PURE MATHEMATICS.—PART I.

*The Board of Examiners.**Candidates must answer satisfactorily in each of the Three Divisions of this Paper.*

I.

1. Find the centre of a given circle.

If two circles intersect, shew that the line joining their centres cuts their common chord at right angles.

2. If two chords of a circle cut another, the rectangle contained by the segments of one shall be equal to the rectangle contained by the segments of the other.

Describe a circle to pass through two given points and touch a given straight line.

3. Find a mean proportional between two given straight lines.

If two circles touch, a common tangent is a mean proportional between their diameters.

II.

1. Shew how to solve two simultaneous quadratics in which all the terms which involve the two unknowns are of the second degree.

Solve

$$\frac{x^2}{a} + \frac{axy}{b^2} = \frac{y^2}{b} + \frac{bxy}{a^2} = \frac{a^2}{b} + \frac{b^2}{a}$$

2. If the three fractions x/a , y/b , z/c are equal, shew that each is equal to

$$(lx + my + nz) / (la + mb + nc).$$

Prove also that

$$(a^2 + b^2 + c^2)(x^2 + y^2 + z^2) = (ax + by + cz)^2.$$

3. Define a geometrical progression and prove formulæ for the n^{th} term and the sum of n terms.

Shew that the product of terms equidistant from the first and last is the same whatever terms are taken.

4. Prove that

$${}_{n+1}C_r = {}_nC_r + {}_nC_{r-1}$$

and shew how to form a table of the values of ${}_nC_r$.

Express ${}_{n+2}C_r$ in terms of ${}_nC_r$, ${}_nC_{r-1}$, ${}_nC_{r-2}$.

III.

1. State and prove formulæ for the sine and cosine of the sum of two angles in terms of the sines and cosines of the angles themselves.

If $\sin A$, $\sin B$ are given, how many values are there for $\sin(A + B)$ and for $\cos(A + B)$?

2. Find a formula for all the angles which have a given cosine.

Find the general solution of

$$\sin 3x \sin 5x = \sin 7x \sin 9x.$$

3. Find a formula for the area of a triangle in terms of the sides.

Shew that the area is

$$\frac{1}{4}(b^2 \sin 2C + c^2 \sin 2B).$$

4. Shew how to solve a triangle having given two sides and the angle opposite one of the sides.

If $a = 273$, $b = 392$, $A = 37^\circ 14'$, find C to the nearest second having given

$$\begin{aligned} \log 3.92 &= .5932861 \\ \log 2.73 &= .4361626 \\ L \sin 37^\circ 14' &= 9.7818002 \\ L \sin 60^\circ 19' &= 9.9389076 \\ \text{difference for } 1' &= \quad \quad 720 \end{aligned}$$

PURE MATHEMATICS.—PART II.

The Board of Examiners.

1. Find the equation of the straight line joining two points whose co-ordinates are given.

Shew that the three straight lines bisecting at right angles the three sides of a triangle meet at a point.

2. Shew that the line

$$y = mx + \frac{a}{m}$$

touches the parabola

$$y^2 = 4ax.$$

Find the locus of the intersection of any tangent with the perpendicular drawn to it from the vertex.

3. Find the locus of the middle points of a system of parallel chords of an ellipse.

A chord of an ellipse passes through a fixed point. Find the locus of its middle point.

4. Find the limit when

$$x = 0$$

of

$$\frac{a^x - 1}{x}.$$

Hence, find the differential co-efficients of a^x , $\log_a x$.

Shew how to find the maximum and minimum values of a function of one independent variable.

Find the maximum and minimum values of

$$\frac{a^2}{a - x} + \frac{b^2}{x - b}.$$

6. Define the curvature at any point of a curve, and prove the formula

$$\rho = r \, dr/dp.$$

Find the curvature at any point of a parabola.

7. State and prove the rule for integration by substitution.

Integrate $\sec x$, $\operatorname{cosec} x$, $\operatorname{sech} x$, $\operatorname{cosech} x$.

8. Investigate formulæ of reduction for

$$\int_0^{\frac{\pi}{2}} \sin^p x \cos^q x \, dx.$$

Shew how to find the value of the integral when the upper limit is replaced by π or by 2π .

9. Prove the formula

$$\frac{2}{3} \pi \int r^3 \sin \theta d \theta$$

for the volume generated by the revolution of a sectorial area about the initial line.

Find the volume generated by the revolution of the curve

$$r = a (1 + \cos \theta)$$

about the initial line.

MIXED MATHEMATICS.—PART I.

The Board of Examiners.

PASS AND HONOUR PAPER.

1. Shew that the acceleration a of a body due to a force F is $g F/W$ where W is the weight of the body expressed in the same unit as F . Discuss the introduction of the mass of the body into this expression for a , describing carefully the dynamical and gravitational systems of units.

A man descends from a balloon by means of a parachute. The resistance to the parachute is $2v^2$ lbs. wt. at velocity v ft./sec., and the man and parachute weigh 400 lbs. Find the velocity at which he descends, and obtain an approximation to the area of a horizontal plane surface which would offer the resistance here supposed.

2. Explain the principle of the conservation of momentum, shewing its connection with Newton's Third Law of Motion.

A ball of mass m lbs. is fired horizontally from a gun of mass M lbs., the kinetic energy of the two, produced by the explosion, being E ft. lbs. Find the velocity in ft./sec. of the ball and gun, the latter being supposed to recoil freely.

3. Explain the construction of a velocity-position graph from a given force-position graph. How would you proceed to obtain a position-time graph?

A mass of M lbs. is suspended from a point O by a helical spring which is of natural length l ft. and has a tension T lbs. wt. at length $l + a$ ft. The mass is released from a point distant l below O , and hits a fixed inelastic horizontal plate b ft. lower down. Find the velocity of the mass when it reaches the plate, and the time elapsed. Find also the time when the mass reaches the plate again.

4. Explain the meaning of the acceleration of a point when the magnitude and the direction of the velocity are both changing, and find an expression for the component acceleration due to each cause.

A tube inclined at an angle θ to the vertical rotates with uniform angular velocity ω radians per sec. about a vertical axis intersecting it. Find in feet the distance from the vertical axis of the position in the tube at which a small smooth body can remain in relative equilibrium.

5. Prove the addition theorem for moments, and deduce the condition of equilibrium of a body on a fixed smooth axis.

A gasalier with two straight arms each of length a in a line at right angles to the descending tube of length l is hanging out of plumb from the ball-joint at top. A horizontal force P applied at the lower end of the descending tube, brings the gasalier plumb. Find the weight at the end of an arm which will do so.

6. Shew that it is necessary and sufficient for the equilibrium of forces in one plane on a rigid body that the sums of the resolved parts of the forces in two directions and the sum of their moments about one point should separately vanish.

A plane plate can turn in its own plane about a centre O fixed in a frame. A cord passes around two smooth pegs A, B in the plate in line with O , and its ends are fastened to a point C of the frame in the plane of the plate. A couple of moment L is applied to the plate in its plane so as to strain the cord. Assuming the dimensions given and neglecting gravity, find the tension of the cord and the reaction at O .

7. Shew that the mechanical efficiency of a rough square-threaded screw driven in a fixed nut against an axial force by a couple around the axis is $\tan \alpha / \tan (\alpha + \lambda)$, and that this has a maximum value $(1 - \sin \lambda) / (1 + \sin \lambda)$ when $\alpha = \pi/4 - \lambda/2$, where α is the angular pitch and λ is the angle of friction.

If the screw is a hollow tube of mean radius r which is driven against the pressure of a rough plate bearing against the square-cut end of the screw and not rotating with it, shew that the mechanical efficiency is $\tan \alpha / (\tan (\alpha + \lambda) + \mu' r/a)$ where a is the radius of the screw-thread and μ' is the co-efficient of friction with the plate.

8. Prove the theorem $\bar{z} = \Sigma mz / \Sigma m$ for the c.m., explaining the rule of signs for the distance \bar{z} .

A plane polygon is defined by the distances 1, 2, 3, 4, 5 of its angles A, B, C, D, E from a point O , and the magnitudes $60^\circ, 60^\circ, 75^\circ, 75^\circ, 90^\circ$ of the angles AOB, \dots, EOA . Find the distance OG of the c.m. of the area of the polygon from O and the angle GOA .

9. Define the stress across a surface in a body, and shew that if the stress is always normal its intensity is the same in all directions at the same point.

A surface S is coterminous with a plane area A of given c.m. G . Find the magnitude and the line of action of the resultant of a uniform fluid pressure over S of intensity p .

A right circular cylinder of radius r and length l is immersed in heavy liquid, with its axis horizontal and at a depth $h (> r)$ below the surface. Find the magnitude and line of action of the resultant pressure on the part of the curved surface on one side of the vertical plane through the axis of the smooth

MIXED MATHEMATICS.—PART II.

ENGINEERING COURSE.

The Board of Examiners.

[Electrical Engineering Students omit the first Two questions.]

1. State and prove the six fundamental relations between the parts of a right-angled spherical triangle.

AOB , BOC , COD are three right angles at O . Given the inclinations of the plane BOC to the other two, find the inclination of these to each other, and find also the angle DOA .

2. Shew how to solve a spherical triangle of which the three sides are given.

The latitudes and longitudes of three places on the earth's surface are given. Find the shortest distance of one from the great circle through the other two.

3. OA , OB , OC are mutually at right angles. From a point P perpendiculars PL , PM , PN are drawn to these axes, and PR is perpendicular to the plane AOB . If PL , PM , PR , LR , MR , NR are bars of a frame connecting P with the fixed points L , M , N , find the stresses in the frame due to a force F on P at inclinations α , β , γ with the axes OA , OB , OC .

4. State and explain the principle of virtual work.

Sliding pieces A, B, C on three fixed bars OA, OB, OC mutually at right angles are connected by two bars BC, CA smoothly jointed to them. Forces P, Q, R are applied to A, B, C in the directions OA, OB, OC . Shew that for equilibrium

$$P/OA + Q/OB = R/OC.$$

5. Shew how the motion of a particle along a straight line is determined when the force is given (a) as a function of the time, (b) as a function of the position of the particle.

If in the first case the force is $A \sin 2\pi t/T$, where A, T are constants, complete the solution, and discuss the result.

6. Define the principal axes of inertia at a point, and obtain a formula for the directions of these axes at a point of a plane area, the moments and product of inertia for one set of axes at the point being given.

Find the directions of the principal axes at the angles of a uniform triangular lamina, using the equimomental particles at the middle points of the sides.

7. Find the pressures on the bearings due to a concentrated load fixed to a rotating shaft at a given distance from it and from the bearings.

Find the pressures on the bearings due to a uniform distribution of mass along a given straight line parallel to the shaft and in a given position relative to the shaft and the bearings.

8. Shew how to determine the small oscillations of a frictionless mechanism with one degree of freedom by the use of the equation of energy.

A smoothly-jointed frame $ABCD$ of equal uniform bars hangs in a vertical plane with AB fixed in a horizontal position. Find the time of a small oscillation under gravity.

9. State D'Alembert's principle, and determine the inertia-forces in the case of a plane lamina moving in its plane.

In the case mentioned, suppose the force on the lamina is constant in magnitude and direction and applied at a point other than the c.m. Determine the motion.

MIXED MATHEMATICS.—PART II.

ARTS.

FIRST PAPER.

The Board of Examiners.

1. Prove that the area of a spherical triangle is the product of the spherical excess and the square of the radius of the sphere.

Find formulæ to determine the area common to two small circles on a sphere, their angular radii being a , b , and the distance between their poles c .

2. Prove the fundamental sine-formula for a spherical triangle.

The mutual inclinations of the lines OA , OB , OC are given. Find the cosine of the inclination to OC of a perpendicular to the plane AOB .

3. Shew how to solve a spherical triangle having given two sides and the included angle.

A point P on the moon's limb is defined either by the angle between the great circles from the moon's centre to the point P and to the point Q of the limb nearest the zenith or by the angle between the great circles to P and the point R of the limb nearest the pole. Given the declination and hour-angle of the moon and the latitude, find a formula for the difference of the two angles.

4. Describe the adjustments of a transit circle.

The east end of the axis of rotation of a transit instrument in S. lat. λ has an elevation α and an azimuth β north of east. The line of collimation is at an inclination $\pi/2 - \gamma$ to the axis of rotation. Find the hour-angles of transit of a star whose S. declination is δ .

5. Shew how the longitude is determined at sea by the observation of an altitude and the chronometer, the latitude being supposed known. Give the necessary formulæ, and state the corrections to be made to the observation.

Shew that the rate of change of altitude of a star is greatest when the inclination of the circles from the star through the zenith and pole is greatest, and that this occurs when the star is in the prime vertical.

6. Define the equation of time and explain the statement that the right ascension of the mean Sun is equal to the mean longitude of the true Sun.

Shew that, neglecting disturbances, the Sun has the mean angular motion in its orbit when

its distance is a geometric mean between the semi-axes, and that this occurs at about 90° from the line of apses. Find the difference of the mean and true longitudes of the Sun at this time, and hence shew that at an equinox the equation of time is about 7 minutes. [Take the excentricity of the orbit as $1/60$ and $\cos 23^\circ 30' = 11/12$.]

7. Explain the sources of the reductions for the apparent position of a star at a given time.

Let S be a star, V the point to which the earth's centre is moving, P a given pole. Shew that if k is the constant of aberration, the aberrations of S along and perpendicular to the great circle SP are

$$k (\cos b \sin c - \sin b \cos c \cos A),$$

and $k \sin b \sin A,$

where $PV = b$, $PS = c$, $SPV = A$.

MIXED MATHEMATICS.—PART II.

ARTS.

SECOND PAPER.

The Board of Examiners.

1. Two equal uprights ABC , DEF are jointed to fixed points A , D on the same level, and are braced by equal light bars BF , CE jointed at their ends to the uprights. A force X in the direction CF is applied at C . Find the stresses in BF , CE , and the maximum bending moments in the uprights.

2. Investigate conditions of equilibrium for a rigid body, acted on by any system of forces.

A gasalier has three straight branches, each of length a , equally spaced around the descending tube, which is of length l . To make this tube hang vertically from the ball-joint at the top a horizontal force P , applied at the bottom of the tube and making an angle θ with one of the branches, is required. Find the weights which, applied at the ends of two of the branches, will effect the same object.

3. State and demonstrate the principle of virtual work.

Four uniform bars, each of weight w and length a form a frame $ABCD$. AB is fixed horizontally. Find the tension of a cord of length a joining A and C , so as to hold the frame in an oblique position.

4. A particle describes an orbit about a fixed centre of force. If v is the resultant velocity, u its component perpendicular to the radius vector, k the curvature, shew that u varies inversely as r , and that the force per unit mass is kv^3/u .
5. Demonstrate the theorem of parallel axes for moments of inertia.

Shew from considerations of dimensions that the M.I. of a uniform rod of length a and mass m about its centre is equal to that of a rod of length $2a$ and mass $m/4$. Hence, by equating the M.I. of such a rod to the sum of the M.I.'s. of its two halves, shew, without integration, that the M.I. about its centre is one-twelfth of the mass into the square of its length.

6. Shew that the rate of increase of angular momentum of a system about a fixed axis is equal to the moment of the external forces about the axis.

A turbine wheel with vertical axis is driven by a jet of water which before entering the wheel has a horizontal velocity v ft./sec. at an angle θ with the perpendicular, of length r ft., to the axis, and after leaving the wheel has a negligible velocity. Shew that the driving couple is $mvr \sin \theta/g$ ft. lbs. where m lbs. is the mass of water per sec. entering the wheel.

7. A roller of radius r and M.I. Mk^2 about its axis rolls down an inclined plane of elevation i . The handle of the roller trails on the plane behind, its length being l , its mass m , and its c.m. distant $2l/3$ from the end. Find the acceleration of the roller (a) when all frictions are neglected; (b) when a co-efficient of friction μ is assumed between the plane and the handle.

DEDUCTIVE LOGIC.

Professor Laurie.

To be used as Pass Paper, and also as Honour Paper No. 1.

1. What are the three parts of logical doctrine? How would you deal with the statement that one of these parts "is the strictly proper subject" of Formal Logic?
2. How do you define a Concept? Show the importance of distinguishing between the collective and the distributive use of names.

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3. What distinction should be drawn between contrary and contradictory opposition? Give, where possible, the contrary, the obverted converse, and the contrapositive, of each of the following propositions:—

The insane ought not to be punished.

Few men pursue their ambitions wisely.

If a child is spoilt, he is likely to be troublesome.

4. What reasons have been given for and against the addition of the forms "All S is all P ," and "Some S is all P ," to the four traditional forms of proposition?
5. Prove, from the rules of the syllogism, that a valid syllogism in the second figure must have a negative conclusion and that the conclusion of a valid syllogism in the third figure must be particular.
6. What are the characteristics of an Inductive Syllogism? Give an example. Comment on the distinction between Perfect and Imperfect Induction.
7. What are the different kinds of fallacy of accident? Give an example of each.
8. State the following in syllogistic form, and point out fallacies, if any:—
- (a) An agreement is adhered to if it be advantageous to the parties concerned; but since the agreement between A and B has not been to their mutual advantage, we may therefore infer that it has not been adhered to.

- (b) Since the business of an Arbitration Court should be to regulate industries generally, it is not enough to empower it to settle disputes between individual employers and those whom they employ.
- (c) There must be some connection between Parliaments and undue loquacity; for it is admitted that in all the Parliaments of Australia there is too much speaking.
- (d) You are either fated to recover from your illness or not; in either case, therefore, it is useless to call in a doctor.
9. In a given examination, every candidate who takes either Classics or English takes Mathematics; no one who takes Music takes Classics; but every one who does not take Music takes English. What can be inferred from these premisses (a) of those candidates who do not take English, (b) of those who take Mathematics? Work this question by the method of Indirect Inference.

INDUCTIVE LOGIC.

Professor Laurie.

To be used as Pass Paper, and also as Honour Paper No. 1.

1. Is Resemblance implied in all propositions of which the predicate is a general name? Consider this question in connexion with Mill's treatment of the Import of Propositions.

2. Is it possible to deduce from definitions, as such, any real scientific knowledge? Discuss the statement that the science of Geometry is derived from definitions.
 3. How would you express the principle of the Uniformity of Nature? On what grounds has this principle been held to be an induction from facts of observation? Add any comments.
 4. Is the Method of Agreement applicable to cases where an observed conjunction of phenomena, though frequent, has not been unvarying? Give reasons for your answer, and an illustration.
 5. Mention any difficulties which may occur in the extension, beyond the limits of actual experience, of a quantitative law which has been ascertained by the Method of Concomitant Variations.
 6. Show that induction and deduction go together in the actual processes of the discovery and proof of uniformities.
 7. Mention different kinds of law to which the term "empirical law" has been applied, with the method or methods appropriate to each.
 8. Show the relation between analogy and hypothesis. Discuss the statement that the argument from analogy may in some cases approach in strength very near to a valid induction.
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MENTAL PHILOSOPHY.

Professor Laurie.

To be used as Pass Paper and Honour Paper No. 1 for Second Year Students, and as Pass Paper No. 1 for Third Year Students.

1. Mention difficulties which are encountered in tracing the correlation between nervous and psychical processes. Give any instances in which these difficulties have been overcome.
2. On what grounds has it been held that Knowing, Feeling, and Willing, are mutually implicated? Must the primacy in the development of the mental life be given to Conation? Refer, on this question, to any recent discussion which is known to you.
3. What do you understand by the extensity of sensations? May this be distinguished from (a) the intensity, and (b) the quality, of sensations?
4. In what respects does Perception, as a psychical fact, pass beyond our experience of sensations?
5. To what extent may repetition be relied upon (a) as an aid to the memory of particular facts; (b) as a means of strengthening the memory generally?
6. What reasons have been given for holding the judgment to be the starting-point in thought? Trace the process by which the notions of individual and class have been differentiated.

7. Is the Subjective Idealist entitled, on his premisses, to infer the existence of minds other than his own? Discuss this question.
8. Examine Spencer's statements that all efforts to understand the essential nature of Matter or of Motion bring us to alternative impossibilities of thought.
9. Compare the ideals of Science and Religion as set forth by Spencer in his chapter on "The Reconciliation."

MENTAL PHILOSOPHY.

Professor Laurie.

To be used as Honour Paper No. 2 for Second Year Students,
and as Pass Paper No. 2 for Third Year Students.

1. What, on Spencer's view, are the parts played by the environment and the bodily organism in the development of mind? Add any comments.
2. Is it possible to explain our knowledge of Space by reference to facts of sentience, either with or without the aid of a theory of evolution?
3. What is the intention, and what the value, of Spencer's Universal Postulate?
4. Can the origin of all necessities of knowledge, as assigned by Spencer, be reconciled with his statement that no one can "ever take a step towards justifying his scepticism respecting the Universal Postulate without, in the very act, confessing his acceptance of it"?

5. State, and examine, the doctrine of Inseparable Association.
 6. Consider Spencer's step to his Transfigured Realism from his distinction between two aggregates of states of consciousness.
 7. It has been said that Spencer's Transfigured Realism is a representative theory of perception. Examine this statement, referring to his diagram of the cylinder and the cube.
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MORAL PHILOSOPHY.

Professor Laurie.

1. What value do you attach to the Socratic tenet that virtue is knowledge? How was this modified by Plato and Aristotle?
2. How does Aristotle define virtue? Write a note on his distinction between the moral and the intellectual virtues.
3. What were the leading features of the Stoic moral philosophy?
4. State, and consider, Butler's vindication of Benevolence as distinct from Self-love.
5. Moral philosophers, it has been said, are generally agreed as to the duties incumbent on man, while they differ as to the criteria and basis of morality. How may this be accounted for? Refer, in your answer, to Mill's treatment of this question.

6. Estimate the value of Spencer's Absolute Ethics as a means of ascertaining the duties which should be fulfilled by actual men under existing conditions.
 7. State, with any comments, Green's doctrine that the gradual development of our knowledge depends on the reproduction, in us, of an eternally complete consciousness.
 8. How, according to Green, does the true good differ from the merely apparent good? And what is "the formal character of the Moral Ideal"? Add any comments.
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NATURAL PHILOSOPHY.—PART I.

ARTS AND EDUCATION.

The Board of Examiners.

TEN questions only to be attempted.

1. Explain what is involved in the measurement of a physical quantity, and illustrate your answer by giving a full explanation as to how force is measured.
2. Explain how velocities are compounded and resolved graphically, and why the method is a legitimate one.

A ship steaming N.E. through a current running 4 knots an hour is found after an hour to have made 4 knots due N. Determine the direction of the current and the speed of the ship.

3. Define acceleration, and determine the acceleration of a body that moves with uniform speed in a circle.

Prove the formula for the period of a conical pendulum.

4. Describe the construction of an aneroid barometer, and explain with full detail how to calibrate it.

5. Describe and give the theory of one method for determining the co-efficient of real expansion of mercury.

Why is an accurate knowledge of this co-efficient specially important?

6. State the laws of evaporation, and show how they can be explained on the basis of the molecular theory.

Describe how to determine the maximum pressure of aqueous vapour for temperatures between 50° C. and 100° C.

7. Describe with full detail how to verify the inverse square law for magnetism by the method of oscillations.

8. Describe the Replenisher, and explain its action fully.

9. Define unit current: Describe how to use a tangent galvanometer, and, in case its number of turns is not known, show how to determine its reducing factor by means of a copper voltameter.
10. Describe some simple form of direct current dynamo, and explain its action fully.
11. A person looks at an object through a concave lens of 6 inches focal length, the object being 4 inches beyond the lens. Draw a figure, approximately to scale, showing the paths of the rays by which he sees the image formed, and determine its position.
12. Describe, in detail, the different parts of a modern astronomical telescope, their arrangement, and the mode of using the instrument.

NATURAL PHILOSOPHY.—PART II.

ARTS AND SCIENCE.

The Board of Examiners.

PASS AND HONOUR PAPER.

NINE questions only to be attempted.

1. Obtain from first principles the expression for the kinetic energy of a body rotating round a fixed axis with constant angular velocity.
Give the theory of the compound pendulum making small swings.

2. A thin wire is stretched horizontally and loaded by weights applied at its middle point. Show fully how to use this apparatus to determine Young's modulus for the material of the wire, and give the complete theory of the method.

3. State Ramsay and Young's general relation between the pressure and temperature of fluids kept at constant volume, and deduce the corresponding form of the characteristic equation.

What inference can you draw from this form of the equation respecting the relation between the molecular pressure of a fluid and its volume and temperature ?

4. State the assumptions on which the kinetic theory of gases is based, and deduce an expression for the energy of translation of the molecules per unit mass in terms of quantities accessible to experiment.

5. Discuss the phenomenon of beats between vibrators of slightly different pitch, and deduce from the theory of vibration the relation between the frequency of the beat and those of the vibrators.

Explain why beats are not always heard, even though theory shows that they are produced.

6. If a lens whose focal length is f produces a magnification m_1 when the image is at a distance d from the lens, and a magnification m_2 when d becomes $d + x$ prove that—

$$f = \frac{x}{m_1 - m_2}.$$

7. Establish from first principles—(a) the expression for the electric intensity just outside a charged conductor; (b) the relation between the electric intensities at the two ends of a tube of force.

Describe the guard-ring condenser, and obtain the expression for its capacity.

8. Describe and give the complete theory of the laboratory method of investigating the magnetic properties of an iron rod.

9. Determine in terms of the different quantities involved the magnetic force at any point in the axis of a coil carrying a current.

Describe the Helmholtz galvanometer, determine its constant, and point out its advantages.

10. Describe fully and give the theory of some accurate method of comparing two small resistances.

NATURAL PHILOSOPHY.—PART II.

ENGINEERING COURSE.

The Board of Examiners.

PASS AND HONOUR PAPER.

1. What do you understand by (a) Harmonic Function, (b) Harmonic Series? State the general relation between such periodic functions as occur in physical problems and Harmonic Functions.

The rectilinear displacement of a particle is a harmonic function of the time; at what point in its path is its velocity half its greatest velocity?

2. Obtain an expression for the shearing stress at any point of a cylinder under torsion.

The rigidity of steel is 3.8×10^{11} and its ultimate resistance to shearing stress 9.68×10^8 dynes per sq. cm.; find, correct to the nearest degree, the greatest twist which can be sustained by a steel shaft 800 cm. long and 15 cm. in diameter.

3. State Mendeleef's Law of Expansion for perfect liquids, and show how it differs from the general law for solids.

Gutkowska obtained the following values for the density of kerosene:—

at 0° , .8056; at 32° , .7824;
at 16° , .7940; at 48° , .7708.

Show that kerosene obeys Mendeleef's Law, and calculate any constants involved.

4. Explain the terms Indicator Diagram, Isometric, Isothermal.

Determine the form of the isothermals of a perfect gas, and show how to draw them for consecutive degrees of temperature.

5. State the general rule for the transformation of other kinds of energy into work, and discuss the problem fully for the special case of utilisation of the potential energy of a high-level water supply.

In what respects does this case (a) resemble, (b) differ from that of a perfect heat engine?

6. A battery of constant e.m.f. and negligible internal resistance is joined by leads of resistance r to a variable resistance R . Find the value of R for which the rate of generation of heat in it is a maximum and the corresponding value of the ratio of the power dissipated in R to the total power developed by the battery.

7. State fully what you know of the mutual action of two coils carrying constant currents in terms of the different variables involved.

Describe two practical forms of electrical measuring instruments depending on these principles.

8. Describe some good form of alternate current transformer. What is magnetic leakage, and how does it affect the performance of a transformer? Specify the different losses, and describe how they may be estimated.

Express the primary and secondary e.m.f.'s in terms of the magnetic flux, period, and numbers of turns.

NATURAL PHILOSOPHY.—PART III.

ENGINEERING COURSE.

The Board of Examiners.

1 Give a full description of the construction and mode of use, and discuss the theory, of the platinum resistance pyrometer.

2. What is a " t, ϕ " diagram?

Determine the forms of the isometrics and isopiestic of a gas on such a diagram when drawn in the usual way, and describe the artifice by means of which all ideal t, ϕ diagrams of internal combustion engines may be constructed of straight lines.

3. State and prove Clausius' Theorem, and deduce from it (a) a mathematical statement of the Second Law of Thermo-dynamics; (b) a definition of entropy.

4. Describe Rankine's "standard" steam-engine cycle and obtain an approximate expression for the efficiency of this engine in terms of the temperature limits and the corresponding values of the latent heat of steam.

Assuming that the latent heat of steam is given by

$$L = 597 - \cdot 6 t.$$

evaluate this efficiency for an engine for which the boiler and condenser temperatures are 187° and 49° C., having given that $\log_e 7 = 2\cdot046$, $\log_e 10 = 2\cdot303$.

5. Describe with full detail and give the theory of the ballistic method of investigating the magnetic properties of a specimen of iron.

State Steinmetz's law.

6. Describe how to measure a co-efficient of mutual induction, and give the theory of the method.

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7. Discuss fully the armature reactions of a continuous current dynamo, and point out the mechanical and electrical arrangements by which the effects of these reactions can be eliminated.

Prove the formula that gives the e.m.f. generated in such an armature in terms of the different quantities involved.

8. Describe with full detail the different instruments required, and how you would use them to determine the efficiency and the various losses of a transformer under different conditions of loads.

GEOLOGY.—PART II.

MINING HONOURS; SCIENCE PASS.

The Board of Examiners.

For all Candidates.

1. Draw sketch sections illustrating the following:—
 - (a) A laccolite.
 - (b) Unconformable overlap.
 - (c) Overfold passing into a thrust fault.
2. At a point *A* a bed of coal outcrops at the surface (height 300' above sea level). The bed dips due W. at 30°. *B* is a point 500' above sea level, distant 1,000 feet (measured horizontally) in a N.W. direction from *A*. A shaft is sunk at *B* to reach the coal. At what depth should it be met with?

3. Describe the chief characters, megascopic and microscopic, of the following rocks:—Propylite, Granophyre, Monchiquite, Hornfels.
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For Mining Honours Candidates.

4. Discuss the work of Sandberger bearing on ore genesis, and state how far his views are reconcilable with recent hypotheses in this subject.
5. Give an account of the Jurassic coal-bearing deposits of Victoria; the structure, origin, and economic importance of the coals; and the nature and influence of subsequent earth movements on the coal deposits.
6. Describe briefly the salient points in the geological structure of Broken Hill. State the nature of the mineral contents of the lodes from the surface downwards, discriminating between differences due to secondary changes and those which are original. How far do the original differences in the mineral composition of the lode bear upon theories as to its origin? Point out any resemblances and differences that exist between the structural characters of Broken Hill and Bendigo respectively.
7. Give an account of the geology and ore genesis of the Mt. Bischoff field.
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For Science Pass Candidates.

8. Discuss, from a chemical, petrological, and structural point of view, the relations of the Dacites and Granodiorites of the Dandenong and Macedon areas.

9. State the horizons of Ordovician rocks in Victoria, with the prominent Graptolites of each horizon. Describe three typical Ordovician Graptolites, and mention any peculiarities in the Graptolite succession of Victoria as compared with other areas.
10. Briefly compare the Jura-Trias series of Victoria with deposits of similar age in the Alps and in Britain, particularly from the point of view of the conditions under which the deposits were formed.
11. Give a description of the Glacial deposits of Bacchus Marsh, with their probable mode of origin, and state where rocks of similar origin and age are to be found.

BIOLOGY.—PART I.

BOTANY.

The Board of Examiners.

PASS AND HONOUR PAPER.

For all Candidates.

1. Cut, stain, and mount a transverse section of the stem provided.
 Make a diagram of the section, marking the position of (*a*) protoxylem, (*b*) cambium, (*c*) pericycle, (*d*) phloem, (*e*) cork, (*f*) cork cambium. Give the age of the stem.
2. Construct the floral diagram of the flower provided, and lay out the parts of the flower according to this plan on a sheet of paper.

For Pass Candidates.

3. What are stomata? Where do they occur, and what is their structure and function? Why should they open in light, and close in darkness?
4. Describe experiments to shew that green plants take in carbon dioxide and give out oxygen when exposed to light, and also to shew the influence of light on transpiration.

For Honours Candidates.

5. Identify the preparations (A), (B), (C) and (D), and the specimens (E), (F) and (G), making and labelling a rough sketch of each.
6. Compare the structure of the one-year-old Dicotyledonous stem and root, by the aid of diagrams of transverse sections, and trace the growth of the root up to the end of the second year.

NATURAL SCIENCE.**PHYSICAL GEOGRAPHY.***The Board of Examiners.*

1. Define the following terms:—Anticyclone, caldera, atoll, fiord, geoisotherm, nimbus.
2. Classify the different types of plains. State their modes of origin, and, as far as possible, illustrate your answer by Victorian examples.

3. In what parts of a river's course may lakes occur? Describe how they are formed, and by what agencies they eventually disappear.
 4. Contrast the climates of the districts of Victoria lying to the north and to the south of the Divide, and explain the physiographic causes for this difference.
 5. State what becomes of the rain which falls in areas like the Mallee. What are the methods by which the amount of rain which does not flow into streams is determined?
 6. What are the causes of "river capture"? Illustrate your answer by means of diagrams.
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NATURAL SCIENCE.

CHEMISTRY.

The Board of Examiners.

1. State and explain Boyle's law.
2. How does temperature usually affect the solubility of a salt in water? Explain, with the aid of a diagram.
3. Explain, as fully as you can, the explosive effects which follow the application of a flame to a mixture of hydrogen and air.

4. What is meant by the molecular weight of a substance? Explain, and give instances.
5. How is chlorine made? Describe its chief properties and reactions.
6. Explain the nature of those actions which frequently occur when two saline solutions are mixed, resulting in the production of solid precipitates. Give instances, and write the equations for them.

NATURAL SCIENCE.

ZOOLOGY.

Professor Spencer.

All answers must be illustrated by rough sketches. Not more than FOUR questions must be attempted.

1. Identify specimen *A*, and write a short account of its life history.
2. Identify specimens *B, C, D, E, F*. Where does each of them live and how does each of them breathe? Write a general account of the different forms of shells among the mollusca, illustrating your answer by reference to those of the mussel, limpet, chiton, snail, sepia, and nautilus.
3. How would you distinguish a snake from a lizard, and a non-venomous from a venomous snake? What animals defend themselves or obtain their prey by means of a poison apparatus? Indicate, in each case, briefly the structure and manner of use of the poison apparatus.

4. Write an account of the liver fluke, and the various stages through which it passes in its life history. Indicate where each is to be found.
5. Why is it advisable to keep dogs away from the supply of drinking water? Indicate briefly the importance of an inspection of the meat supply of the community.
6. Write a general account of the structure and habits of earthworms, indicating their economic importance.

NATURAL SCIENCE.

ZOOLOGY.

Professor Spencer.

PASS AND HONOUR PAPER.

All answers must be illustrated by rough sketches. Not more than FOUR questions must be attempted.

1. Identify specimen *A*, and write a short account of its life history.
2. Describe the structures by means of which the following animals defend themselves against enemies, (*a*) land planarians, (*b*) centipedes, (*c*) millipedes, (*d*) scorpions, (*e*) spiders, (*f*) squids.
3. Identify specimen *B*; where does it live? Describe briefly by means of rough sketches its external anatomy. How does it differ from a cockroach?
4. What is meant by the term differentiation, illustrating your answer by reference to the structure of an amoeba, a vorticella, a hydra, and an earthworm?

5. Write an account of the leading features in regard to the life-history and organisation of bees and ants.
6. What are the chief groups amongst the reptiles? Indicate very briefly their characteristic features, illustrating your answer by reference to one member of each group that you have seen.
7. Write an account of the more important features in the circulatory systems of sharks, lung fishes, and frogs.

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Honour candidates must answer questions 3, 4, 5, and 6 or 7.

ASTRONOMY.

The Board of Examiners.

1. Describe how to determine the uncorrected deviation error of a transit instrument, and show how to correct the observed time of transit of a star for this error.
2. Show that the lengths of the four seasons are given by the four values

$$\frac{365\frac{1}{4}}{4} \left\{ 1 \pm \frac{4\sqrt{2}}{\pi} e \cos \left(\frac{\pi}{4} \pm \chi \right) \right\}$$

where e is the eccentricity of the earth's orbit and $\frac{\pi}{2} + \chi$ the longitude of aphelion.

3. Explain fully how you would transform mean time for the 10 hour zone to the corresponding apparent solar time at Melbourne.
4. State the different methods by which the figure of the earth has been determined.

Assuming that the gravitational potential V of the earth at any point on its surface is given by

$$-V = \lambda M \left\{ \frac{1}{r} + \frac{\mu}{r^3} (1 - 3 \sin^2 \phi) \right\}$$

where ϕ is the latitude, prove Clairaut's theorem, viz.,

$$g_\phi = g_e \left\{ 1 + \left(\frac{5}{2} q - \epsilon \right) \sin^2 \phi \right\}.$$

5. Describe and give the theory of the magnetometer method (azimuth) of determining the meridian from observations of the sun.
6. Give a short account of the different ways in which the scale of the solar system has been determined.
7. What data are necessary to enable us to determine the mass of a double star?

Explain fully how to deduce the mass from these data.

What are spectroscopic binaries, and how much can we learn about them?

CHEMISTRY.—PART III.

The Board of Examiners.

1. Explain all that is represented by the constitutional formula usually assigned to acetic acid, and point out the principles underlying the determination of such a formula.
 2. Give an account of the malonic ether synthesis, and show how, by its means, you could synthesise (a) isosuccinic acid, (b) propionic acid.
 3. Explain the theory of space isomerism. Show how this conception may be used to explain the peculiar isomerism of fumaric and maleic acids.
 4. To what classes of organic bodies do the sugars belong? Write a very brief account of the main points in the chemistry of the hexoses.
 5. Compare the actions of nitrous acid on amines belonging to different classes, and explain why the product of its reaction with primary aromatic amines is of such great importance.
 6. How can phthalic acid and its anhydride be prepared? Discuss the characteristic condensations of the latter with phenols.
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INORGANIC CHEMISTRY.

THIRD YEAR SCIENCE.

The Board of Examiners.

Write papers on not more than six of the following subjects:—

1. The determination of silica in rocks (methods and precautions).
 2. Peroxides and persulphates as reagents.
 3. The cyanogen compounds of iron, cobalt, and nickel.
 4. Soluble compounds of gold (formation, properties, and applications).
 5. The isomorphism of salts.
 6. Water of crystallization.
 7. The theory of electrolytic solution tension in its bearing on reactions in which metals play a part.
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PHYSIOLOGICAL CHEMISTRY AND
HISTOLOGY.*The Board of Examiners.*

Not more than FIVE questions are to be attempted.

1. By what means can blood be laked? In what respects does the serum of laked blood differ from normal serum?
2. Classify according to their chemical characters the carbohydrates taken in food.
3. If in the air of a disused mine a candle burns, an insect lives but a mouse dies, what poisonous gas would you suspect, and how would you test for its presence?
4. Show, by means of drawings and descriptive notes, the structure of a nerve-fibre and a striated muscle-fibre, and the structural relationship of the former to the latter.

What methods would you employ in the laboratory for elucidating the minute structure of nerve and muscle?

5. Describe, by means of carefully-lettered diagrams, the minute structure of the *sub-maxillary gland*, the *pancreas*, and a *cardiac gland* of the stomach.
6. Describe, with drawings, the different kinds of cartilage, and the positions in which they occur in a grown-up body.

Trace carefully the stages in the history of cartilage from its first occurrence in the femur of a mammal.

TECHNICAL CHEMISTRY.

THIRD YEAR SCIENCE.

The Board of Examiners.

Answers should be given to not more than six of the following:—

1. Describe briefly the most reliable dry methods for the assay of tin concentrates. Explain fully the chemistry of the processes.

2. Compare and contrast the methods of scorification and cupellation as applied to the assay of silver ores.

3. Write a short paper on the chemistry of the processes of calcining, roasting, and retorting zinc ores.

4. Explain the reactions on which the efficacy of the "roast and reaction" process depends. For what class of lead ore is the process most suitable?

5. Describe a process for the recovery of sulphur from alkali waste.

6. Write a paper on commercial applications of the electric furnace.

7. Give a brief account of the manufacture of soap, and explain the theory of the chemical changes involved.

8. Write a paper on cellulose, its solutions, and their technical applications.

ELEMENTARY PHYSICS AND CHEMISTRY.

VETERINARY COURSE.

Time allowed: Two hours.

The Board of Examiners.

PASS AND HONOUR PAPER.

1. State and explain Boyle's law.
 2. How does temperature usually affect the solubility of a salt in water? Explain, with the aid of a diagram.
 3. Explain, as fully as you can, the explosive effects which follow the application of a flame to a mixture of hydrogen and air.
 4. What is meant by the molecular weight of a substance? Explain, and give instances.
 5. How is chlorine made? Describe its chief properties and reactions.
 6. Explain the nature of those actions which frequently occur when two saline solutions are mixed, resulting in the production of solid precipitates. Give instances, and write the equations for them.
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JURISPRUDENCE (INCLUDING ROMAN LAW).

The Board of Examiners.

Candidates should answer **SEVEN** questions only.

1. Write a short history of the verbal contract in the Roman Law. What is *cautio* ?
2. Explain and comment on the following :—
Furtum est contractatio rei fraudulosa vel ipsius rei vel etiam usus ejus possessionisve. (J. 4. i. i.)
3. Classify the heads of quasi-contractual obligation in Roman Law. Compare them with sources of obligation in English Law.
4. What is Novation? , What are the principal forms of novation, and how was it effected in Roman Law ?
5. Distinguish between correal and solidary obligation.
6. Consider the propriety of the application of the term *Status* to the following cases:—A British subject; an alien; a married woman; a son; a soldier; a bankrupt; a member of Parliament; a minister of religion; a solicitor.
7. “A party has a right when another or others are bound or obliged by law to do or forbear towards or in regard of him.” Consider this definition in the light of the following cases :—
(a) The duty of a gaoler to keep his prisoner safe; (b) the duty of an employer under the Factory Acts not to work his employés more than a certain number of hours per day; (c) the capacity to make a will.

8. What do you mean by a juristic person, and what is the doctrine of English Law concerning their creation? Is the State a juristic person?
9. Write a note on the importance of the family in the history of law.
10. Consider the relevancy of Motive in the following cases:—
- (a) A is the owner of land and intercepts water collecting on his land whereby the X corporation are deprived of water which would otherwise be available for the supply of their borough.
- (b) The X Miners' Federation order their members to cease working for the Y company on two days a week; the order is obeyed and thereby the company suffer loss. The company bring an action against the Federation.

CONSTITUTIONAL HISTORY AND LAW (PART I.) AND PUBLIC INTERNATIONAL LAW.

The Board of Examiners.

Candidates should answer **SEVEN** questions only, of which **FOUR** should be from Part A, and **THREE** should be from Part B.

A.

1. What is meant by *personal* and *territorial* sovereignty? How is each evinced in the British Constitution?

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2. What are the historical associations and political significance of the terms *State*, *Nation*, *Commonwealth*? Explain the term *National-State*.
3. What are the principal classifications of Constitutions? Apply any one of them to the Constitution of the United States, the United Kingdom, the French Republic, the Commonwealth of Australia.
4. Describe the functions of a modern Ministry collectively and individually, in and out of Parliament. What is the constitutional position of the Opposition?
5. (a) Compare the Continental group system with the party system as it exists in England. What are "open questions," and what has been the modern tendency in regard to them?

Or,

- (b) Compare the committee system as it is used in the Congress of the United States and in the Imperial Parliament. Are there any, and what, constitutional difficulties in the way of an extensive devolution of the business of the House of Commons in committees?
6. What are the "estates of the realm" at the present day? What do you consider to be estates of the realm in the fourteenth century?

B.

1. International Law has been described as the rules which determine the conduct of the general body of States towards each other. How far do you consider that the limitation is true?

2. Distinguish *mediation* from *intervention*. To which head would you attribute the action of President Cleveland in 1895 in respect to the British Guiana-Venezuela boundary dispute, and the action of President Roosevelt in relation to the termination of the recent Russo-Japanese war?
3. What reservations are commonly made in general agreements to refer disputes to arbitration? Give illustrations of cases deemed to fall within the classes of matters reserved.
4. "There are neutralized states and neutralized individuals, and the process of neutralization may be made to apply equally well to seas and waterways, and even to such things as buildings, ambulances, and ships" (Lawrence, 485-6). Consider this passage and compare neutralization with neutrality.
5. What has been the influence of feudalism in the growth of International Law?

CONSTITUTIONAL HISTORY AND LAW.— PART II.

The Board of Examiners.

Candidates should answer **SIX** questions only.

1. What is the writ of prohibition, and what has been its importance in the history of the relations of Courts?

2. Consider the following cases in the light of the Judicature Act 1873 s. 25 (Supreme Court Act 1890 s. 63) as to conflicts of law and equity:—
- (a) *A*, by bill of sale, assigned the stock in trade then or afterwards on his premises to *B* by way of security. *A* pledged with *C* stock in trade brought on the premises after the date of the bill, and *C* received the property without notice of *B*'s claim. *B* brings an action for detinue or conversion against *C*.
 - (b) *X* sues *Y* upon a contract of service not to be performed within a year. The contract is not in writing as required by the Statute of Frauds.
3. What do you understand by a *Digest* and a *Consolidation of Statutes*? What views are held as to the propriety of reference in the case of a Consolidation Act to the several Acts of which it is composed and to cases decided thereon?
4. What do you understand by *ratio decidendi*, and *obiter dictum*, and state their relation to "the doctrine of the case." Consider their application to the following cases:—(a) The Court bases its conclusion on two independent grounds; (b) the several members of the Court concur in the decision and in the reasons therefor, but one member of the Court rests also upon an additional and independent ground from which the other Judges hold aloof; (c) the Court rests its decision upon one ground, but expresses the opinion that the case might be determined upon another and broader ground.

5. What were the principal steps taken during the 19th Century for the improvement of the form and increasing the accessibility of Statute Law.
6. "Custom is one of the main triangles of the law of England."—(*Coke*). To what extent do you consider this statement true?
7. Consider the principal differences in the functions of a Judge in a trial with a jury at Common Law, and the functions of a Judge in Equity.
8. Write a note on the Vice-Admiralty jurisdiction in Victoria.
9. What were the principal grievances of the Australian colonists under the Constitutions of 1842 and 1850, and how were they removed?

CONSTITUTIONAL HISTORY AND LAW.—
PART III.

The Board of Examiners.

Candidates should answer **FOUR** questions only.

1. What importance has been attributed by the Privy Council in the construction of the Constitution of Canada to the power of the Dominion Government to veto Acts of the provincial Legislatures?

2. "This Act, and all laws made by the Parliament of the Commonwealth under the Constitution, shall be binding on the Courts, Judges, and people of every State, and of every part of the Commonwealth, notwithstanding anything in the laws of any State; and the laws of the Commonwealth shall be in force on all British ships, the Queen's ships of war excepted, whose first port of clearance, and whose port of destination are in the Commonwealth." (Commonwealth of Australia Constitution Act 1900, sec. v.)

Consider the authority and meaning of this section.

3. What are the provisions of the Constitution of the Commonwealth in relation to trade and commerce?
4. What is meant by *contemporanea expositio* in the construction of a Constitution? For what purpose, if at all, may recourse be had to the following matters in the construction of the Commonwealth Constitution? The Draft Bill of 1891; the Draft Bill of 1897 submitted to the States Parliaments; the Debates in the Federal Convention, and the speeches of Members; the fact that certain matters were within the knowledge of the Convention; decisions on the United States and Canadian Constitutions.
5. What provisions are contained in the Judiciary Act as to the law to be applied in the federal jurisdiction.

Or,

6. In what sense is it true that the common law is part of the law of the Commonwealth?

PRIVATE INTERNATIONAL LAW.

The Board of Examiners.

Candidates should answer FIVE questions only.

1. *A* is made bankrupt in England. He is known to have certain property in Victoria, and it is suspected that he has other property here. What steps can be taken by the trustee in respect of either? *A* is at present in Victoria.
2. The Russian agent of an English merchant ships goods at a Russian port for carriage to an English port by a German vessel. The master as agent for the charterer gives ordinary bills of lading, which are remitted in due course to the consignee on whose behalf the goods were shipped. The vessel is wrecked on the coast of Norway, but the goods are saved. Instead of re-shipping them to England, the master orders them to be sold, and by Norwegian law the purchaser gets a good title. The purchaser sends the goods to England. The original consignee, holder of the bills of lading, now desires your advice as to whether he can maintain an action for the recovery of the goods and whether he has any, and what, remedy against the charterer of the vessel. You ascertain that by German law, which in this respect is the same as English law, a purchaser in the circumstances would not get a good title.
3. *H* proposes to marry his deceased wife's sister who is domiciled in Victoria. He is advised that his marriage will not be good unless he too is domiciled here, and he thereupon declares his

intention to remain permanently resident in Victoria. He marries, and subsequently family and business reasons require him to leave Victoria and make his permanent home in England. On his death intestate, with moveable property in England and moveable and immoveable property in Victoria, a question arises as to the right of the children to succeed to the property in question. Consider the case.

4. What do you mean by an intention to change the domicile? *A*, domiciled in England, leaves that country in circumstances which indicate an intention not to return there. He acquires land in Victoria and New South Wales, dividing his time equally between the two States. Upon what other matters would you in such a case desire information if it could be obtained? In the absence of other information where would you say *A* was domiciled?

Do you consider that the expression "Australian domicile" has any meaning?

5. In the administration of the estate of a deceased person, for what purposes do you regard the *lex fori* and for what the *lex domicilii*?

A dies intestate domiciled in England, leaving real property in Victoria and no other property here. He has a widow, a son, and two daughters. Consider their rights in the estate.

6. What is the basis of the jurisdiction of the Victorian Courts in (a) an action for breach of contract, (b) an equity suit for the administration of a deceased person's estate, (c) probate of a will, (d) petition for a divorce?

7. In a proceeding in Victoria to enforce a New South Wales judgment, how far do you consider the following facts material:—That the New South Wales Court was not a Court of competent jurisdiction, that the judgment was based on a cause of action not recognized by Victorian law; that the judgment was not for a definite sum of money?

ADMINISTRATIVE LAW.

The Board of Examiners.

Candidates should answer **FOUR** questions only.

1. What do you consider to be the essential principles of difference between the European Administrative Law and the treatment of the same matters in English Law?
2. What is the practical importance of the doctrine that the King is not bound by Statute unless named?

A, a servant of the Post-office, is charged with driving a mail cart in the borough at a speed exceeding that fixed by municipal by-laws. He is also charged with running down and killing *X* by his furious and negligent driving. It is shown that *A* was engaged in the business of the Department, and that by no fault of his own he was delayed so that he could not have caught a train by which the mails were to be consigned except by driving at such a rate as to be dangerous to users of the streets. Consider the cases.

3. Can we extradite to a foreign country—(a) A British subject, (b) where the act in respect of which the extradition is demanded is also an offence against English Law, of which English courts have jurisdiction; (c) where the facts alleged to constitute the extradition crime do not disclose any offence under our law supposing that they had occurred here?
4. What were the defects in the English Statute of 1819 in connection with the fitting out of expeditions, and how were they dealt with by the Foreign Enlistment Act 1870?
5. (a) The Government of New South Wales without statutory authority establishes a lock-up and police station in a crowded part of Sydney, which amounts to such a serious disturbance of the occupiers of surrounding property as would constitute a nuisance at common law if caused by private persons. In an action against the Government (which is by Statute made liable for tort) there is evidence that by better construction of the premises the nuisance might have been considerably abated if not entirely removed.
- (b) The Commonwealth of Australia establishes rifle ranges for the practice of its defence forces. The occupier of property in the neighbourhood brings an action against the Commonwealth in respect of—(1) noise caused by the discharge of rifles, amounting to a nuisance; (2) bullets escaping from the range into his grounds to the danger of himself and his household; and claims an injunction and damages. Consider these cases.

6. (a) The Government of Q. is the owner of public docks and harbours, for the use of which it levies charges upon shipping. A vessel is sunk in the harbour, and the Government takes no measures either to remove the wreck or to mark its position by lights or other means. A vessel of the A Company strikes upon the obstruction and suffers damage; and her owners now claim compensation from the Government which is suable in tort.

(b) A borough corporation charged with the duty of lighting and repairing the streets fails to light them, and A, walking along a street on a dark night, trips over a fire-plug around which the road has worn away, and his leg is broken. A desires to know whether he has any remedy against the corporation.

7. Write a short note on "Act of State" in English Law.

LAW OF PROPERTY IN LAND AND CONVEYANCING.

Mr. Guest.

1. What is meant by sub-infeudation? By what Statute was it abolished? What was the effect of that Statute?
2. How is it ascertained whether an estate in remainder is vested or contingent? Illustrate by examples?

3. What is the effect of
- (a) a conveyance of land to *A* and his heirs to the use of *B* and his heirs to the use of *C* and his heirs.
 - (b) a demise of land to *A* for 25 years to the use of *B*.

Give reasons.

4. *A*, who died in 1892, by his will, devised land "to such of the children of his daughter *B* as should attain 25 years of age and their respective heirs in equal shares." The daughter *B* was living at the date of the will but predeceased *A*, and left her surviving two children only, of the ages of three and two respectively. What estates, if any, do such children take? Give reasons.
5. To what extent is the creation of chattel interests in land still governed by the Common Law?
6. How is trust property usually vested in trustees? What was the objection to vesting trust property in a Trustee Company and an individual? How was it remedied? Give reasons.
7. If a lessee commits a breach of the covenant to repair in his lease, how is it to be ascertained whether the lessor can determine the lease, and what steps must be taken before the lease can be determined? Give reasons.
8. State the effect of the proviso for redemption in a mortgage? How is the agreement between the parties as so expressed affected by any and what doctrine of Equity?

9. What is the effect of an order of sequestration made against a judgment debtor—
- (a) before seizure under a writ of *feri facias*.
 - (b) after seizure and before sale.
 - (c) within four days after sale.
10. *A* after entering into a contract to sell land to *B* and before the completion of the contract conveyed the land to *C*, in consideration of natural love and affection. *C* had no notice of the contract, and the conveyance to him was duly registered under Part XVII. of the Real Property Act 1890. Upon the completion of the contract *A* executed a conveyance of the land to *B*, and this conveyance was also duly registered. What are the rights of *B* and *C* respectively to the land? Give reasons.
11. The registered proprietor of land under the Transfer of Land Act 1890 signed a lease of the land to *B*. The lease was not registered, but the lessee went into possession. The proprietor, during the currency of the lease, sold and transferred the land to *C*, who had no knowledge of a lease having been granted. *C* brought an action to recover possession of the land. Is he entitled to succeed. Give reasons.
12. What is the effect of the registration of instruments under the Transfer of Land Act 1890? Has an instrument of transfer on a sale of land under the Act any and what effect prior to registration? Give reasons.

**LAW OF CONTRACT AND PERSONAL
PROPERTY.**

Mr. Duffy.

1. Explain the following terms :—
 - (a) Contract of record.
 - (b) Quasi contract.
 - (c) Escrow.
2. In what circumstances, if any, is a past consideration sufficient in a simple contract ?
3. State shortly the law as to the rights and obligations arising from contracts by lunatics.
4. *A* wishes *B* to make a contract with him which he thinks will be to *B*'s advantage. In the negotiations *A* makes a false statement to *B* without knowing whether it is false or not. Such statement is intended to induce, and does induce, *B* to enter into the contract. The contract turns out to be disadvantageous to *B*. What remedy, if any, has he against *A* ? Give reasons for your answer.
5. Sir William Anson says : "Legal impossibility arising from a change in the law of our own country exonerates the promisor." Explain and illustrate this statement.
6. Explain the following terms used in the Sale of Goods Act 1896—
 - (a) Future goods.
 - (b) Specific goods.

7. When will a condition in a contract of sale of goods be treated as a warranty?
8. State shortly the law relating to the sale of goods in market overt.
9. State shortly the nature of the following Common Law actions—
 - (a) Trespass.
 - (b) Trover.
 - (c) Replevin.
10. What is necessary to constitute a gift of personal chattels at Common Law?
11. State the method of registering each of the following instruments under the provisions of the Instruments Act 1890 :—
 - (a) An absolute bill of sale.
 - (b) A contract of sale of personal chattels with a contract for the letting of the same back to the vendor.
12. In what cases may the Court decree a dissolution of partnership on the application of a partner?

THE LAW OF WRONGS, CIVIL AND CRIMINAL.

Mr. C. J. Z. Woinarski.

1. (a) Give illustrations (i) of acts done maliciously and causing damage to another, but which do not involve legal liability; (ii) of acts causing damage which involve legal liability only if malice is proved.
 - (b) What do you understand by the expression *reasonable and probable cause* in an action for malicious prosecution?
2. Explain the extent of their civil liability, if any, to each of the following persons respectively in the events named—(a) to a person who ratifies a tortious act done by another; (b) to a person of unsound mind for a tortious act done by him; (c) to the proprietor of a public bath in respect to an injury to a customer caused by a defective board in the flooring of the premises; (d) to the proprietor of a private hospital, in respect to the death of a typhoid fever patient, caused by a nurse of the hospital negligently administering an overdose of opium; (e) to the Commonwealth of Australia in respect to an injury caused by the negligence of one of its officers in the execution of public works.
3. (a) On the 1st October, 1906, *A*, in Gippsland, sent a piano and five horses to *B*, an auctioneer, with instructions to sell them by auction on his behalf. *B* sold the piano and horses as directed, and delivered them over to their respective purchasers, and handed the proceeds, less

his own commission, to *A*. The piano and the horses belonged to *C*, and *A* had no title to them. *C* sues *B* for conversion. Will he succeed? Give the reasons for your answer.

(b) *Fouldes v. Willoughby*, 8 M. and W. 540.

Extract from the judgment of Alderson, B. :—
 “But the question here is, where a man does an act, the effect of which is not for a moment to interfere with my dominion over the chattel, but, on the contrary, recognising throughout my title to it, can such an act as that be said to amount to a conversion?” How was this question disposed of in the judgment?

4. Distinguish the actions of *deceit*, *slander of title*, and *passing off*, and consider the liability to an action of *deceit* of a person—

(a) Who misleads to his prejudice another person by an erroneous statement of the law ;

(b) Who innocently misrepresents a fact to another as an inducement to enter into a contract with himself, and who subsequently discovers the statement to be false, but suffers such other to act upon it.

5. (a) *St. Helen's Smelting Company v. Tipping*, 11 H.L.C. 642. Extract from the judgment of the Lord Chancellor :—“It appears to me that it is a very desirable thing to mark the difference between an action brought for a nuisance upon the ground that the alleged nuisance produces material injury to the property, and an action brought for a nuisance on the ground that the thing alleged to be a nuisance is productive of sensible discomfort.” What is the difference indicated, and how does it affect the right of a plaintiff?

- (b) What extent of obstruction to ancient lights will constitute a legal nuisance? Can an increase of noise in an already noisy neighbourhood constitute a legal nuisance?
6. (a) *Scott v. Stansfield*, L.R. 2 Exch. 221. Plea, to a declaration of slander, that the defendant was a County Court Judge, and the words complained of were spoken by him in his capacity as such Judge, whilst sitting in Court and trying an action in which the present plaintiff was defendant. Replication, that the said words were spoken falsely and maliciously, and without any reasonable, probable, or justifiable cause, and without any foundation whatever, and not *bonâ fide* in the discharge of the defendant's duty as Judge, and were wholly irrelevant to the matter before him. To this replication the defendant demurred. For whom was judgment given, and upon what grounds?
- (b) Are there any, and what, restrictions upon the right to publish reports of judicial proceedings? Is there any, and what, liability upon a person who innocently disseminates a libel? What is the position of a defendant in a libel action who pleads justification, and succeeds in proving the truth of part of the words complained of?
7. The offence of conspiracy may be said to consist in the *agreement* of two or more persons to effect any *unlawful purpose*, whether as their ultimate aim or only as a means to it. Write a note upon the words italicized in this definition.
8. Write a note upon the offence of Unlawful Assembly at common law. Is the offence constituted if a group of persons—
- (a) Assemble to see a prize fight?

- (b) Assemble to support a Parliamentary measure by strictly constitutional means, but with knowledge that their assembly will be opposed, and that a breach of the peace may very likely be committed?
- (c) Assemble for the purpose of beating *X*, but abandon their design, and depart without doing anything to carry it out?
9. (a) State the crimes which are punishable with death (i) in England and (ii) in Victoria.
- (b) State in effect the provisions of the Larceny Act 1901 (1 Edw. 7, ch. 10).
10. What crime, if any, is committed in each of the following cases?—
- (a) *A* writes and sends to *B* a letter inciting *B* to commit a felony. *B* does not read the letter.
- (b) *A* enters a dwelling house at night through an open window, with intent to commit a felony.
- (c) *A* is absolutely entitled to Blackacre, the dry legal estate in which is in *B*, and *A* signs *B*'s name to a transfer to himself of the legal estate, and takes the transfer to *C* to obtain a loan on mortgage of the land. *C* declines to make the advance, and returns the transfer to *A*, who makes no further use of it.
- (d) *A* is allowed to take goods, which he has bought, away from the shop on his promising to call in the evening and pay for them. *A* does not call and pay for the goods.
- (e) *A* finds a sovereign in the road, and picks it up, intending to keep it, whoever the owner may be, but not knowing who he is, and having no reason to believe he could be found.

THE LAW OF PROCEDURE.

Mr. C. J. Z. Woinarski.

A.—CIVIL PROCEDURE.

1. When, if ever, is it necessary—
 - (a) to obtain leave to appear and defend an action?
 - (b) for the Attorney-General to be a party to an action?
 - (c) to obtain an order for a person to defend an action on behalf of himself and others?
 - (d) to obtain an order for an infant defendant to appear by a guardian?
2. (a) *A* and *B*, joint owners of a house, sue *C*, their tenant, for damages for breach of covenant, and (i) *A* dies, (ii) *C* dies. What is the effect in each case upon the action?
 - (b) If *C* died after judgment was got against him by *A* and *B*, could execution be got upon the judgment, and, if so, how?
 - (c) If *C* had not died, and *A* and *B* got judgment against him for £100, and if *X* owed *C* £150, which *C*, after the judgment, assigned over for value to *Y*, who gave notice thereof to *X*, and *A* and *B* thereafter obtained a garnishee order *nisi* and served it on *X*, what is the legal position?
3. Outline the provisions of the Rules of the Supreme Court as to—
 - (a) Proceedings on an Interpleader Summons by the Sheriff;
 - (b) Certificates of the Chief Clerk.

4. (a) When may an arbitrator state a special case for the opinion of the Supreme Court?
 - (b) What, in effect, are the provisions of the Supreme Court Act 1890 as to referring an action to arbitration?
 - (c) What procedure may a defendant adopt, and in what circumstances, if an action is commenced against him in the Supreme Court as to a matter which the plaintiff had previously agreed with him should be referred to arbitration?
5. Sketch the procedure by a person aggrieved by a final judgment of the Supreme Court who desires to appeal to the Privy Council under the Order in Council.

B.—CRIMINAL PROCEDURE.

1. (a) What power, if any, has a justice of the peace to receive and act on information in respect to an offence committed outside of his local jurisdiction?
 - (b) What power, if any, has a justice of the peace, out of sessions, to commit a person for trial for an indictable offence?
 - (c) What power, if any, has a coroner to commit a person for trial?
2. (a) *A* is charged with an offence summarily punishable, and convicted by a Court of Petty Sessions, and fined £3. The Court ordered the fine to be levied by distress, and that in default of sufficient distress *A* be imprisoned for seven days. Will an appeal lie to General Sessions? Will proceedings by *certiorari* lie in any, and what, circumstances?

(b) *A* is charged with manslaughter. The preliminary investigation is made by a Court of Petty Sessions, and—

(i) a witness refuses to answer certain relevant questions. What course should the Court pursue?

(ii) If the evidence given for the prosecution raises a strong or probable presumption of *A*'s guilt, what course should the Court pursue?

(iii) If *A* be committed for trial and feels aggrieved, can he obtain an order to review the order for commitment?

(iv) Can *A* be committed for trial to General Sessions?

3. Write a note upon the restitution of stolen property.

C.—EVIDENCE.

1. Questions put to a witness by the counsel who produces him (whether in examination in chief or re-examination) must not be *leading* ones. Why? Give an illustration of each of the exceptions to this rule.

There are some questions which it is quite legal to ask, but which a witness may, if he think fit, equally legally refuse to answer. In what cases does such a privilege arise?

2. Explain shortly the distinction between *Fact in Issue* and *Fact Relevant to the Issue*.

Is the evidence tendered admissible or not, and why, in each of the following cases?—

(a) On an issue whether *B* assaulted *A*, his wife, *A* stated that after she was struck on the head

by *B*, she locked herself in a room for two or three hours, and then, having bathed her head, and recovered herself, went to a neighbour *X*, and made a statement to *X*. *A* tenders evidence of what she told *X*.

- (b) *A* sues *B* for breach of warranty of the quality of certain goods which *B* has sold and delivered to him. The bargain was made between *A* and an agent of *B*, who had authority to sell the goods on his behalf. *A* tenders in evidence, to prove the warranty, a statement made by *B*'s agent at the interview when the goods were bought. *B* objects, as the bargain had already been struck at the time when the statement was made.
- (c) A witness, being asked the date of his parents' marriage, replied that he had heard his father say that it was on the 1st May, 1886.
- (d) In an action for negligence under the Employers Liability Act 1890, the plaintiff alleged that the scaffolding was made of defective material, and that square hardwood joists were used for a ledger pole instead of a proper round scaffold pole. The plaintiff tenders evidence of the fact that after the accident the defendant replaced the broken pole by a round pole of different material.
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EQUITY.

Mr. J. E. Mackey.

Not more than EIGHT questions are to be attempted.

1. Explain and illustrate what is meant by the equitable jurisdiction of the Supreme Court.
2. *A*, in consideration of natural love and affection, assigned to her husband *B* a leasehold belonging to her. *B* subsequently mortgaged the leasehold. Upon the death of *B*, *A* claimed to be entitled to the leasehold subject to the mortgage. She contended that she had assigned the leasehold to *B* solely to enable him to mortgage it in his own name, and that it was part of an arrangement between them that he should re-assign to her. *C*, the executor of *B*, relied as a defence upon the Statute of Frauds (Instruments Act 1890, section 208).

Is verbal evidence admissible to show what the arrangement was between *A* and *B*? On proof of the facts stated, what would be the rights of *A*?

3. *A*, *B*, *C* are trustees, and had at a bank a trust account in their joint names. *A* being about to visit Europe authorizes *B* and *C* to draw cheques on the account, and authorizes the bank to pay cheques so drawn.

While *A* is absent in Europe *B* and *C* draw cheques and misappropriate the proceeds. What are the rights of the beneficiaries?

4. Testator gave the residue of his personal estate to trustees, directing them to immediately convert it into money and invest the proceeds in 3 per cent. consols, which they were to hold upon trust for *A* for life, and after her death for *B*.

The trustees allowed a part of the residuary personal estate, which the testator had in an Indian loan, bearing interest at 10 per cent., to remain for several years in that security, during which they paid to *A* the interest at 10 per cent., which it yielded annually. On the loan being paid off, the trustees invested the money in the 3 per cent. consols at a time when consols were so low that the amount of stock purchased was considerably greater than if the conversion had taken place during the year following testator's death.

On accounts being taken *B* claimed that the trustees ought to be allowed as payments to *A*, not the sums which they had in fact paid her, but only a sum equal to what she would have received from dividends if the money had been transferred from the Indian loan and invested in the 3 per cents. during the year following testator's death. The trustees claimed that since no loss had resulted from the breach of trust they were not liable, and that if they were held liable they should be allowed to set off the gain to the estate by the increased amount of 3 per cent. consols purchased.

What are the rights, *inter se*, of *B* and the trustees?

5. In what cases do the rules of equity protect trustees from the consequences of breaches of trust?

Explain any statutory provisions that have become law during the last twelve years for the protection of trustees.

6. What is at Common Law the order in which debts are payable out of legal assets? To what extent has this order been altered by rules of Equity and by Statute law?
7. (a) *A* being the owner in fee of Blackacre declares himself trustee of it for *B*, *C*, and *D* upon trust to sell at his discretion and divide the proceeds in equal shares among them. Before sale *B* dies, leaving his realty to *X*, and his personalty to *Y*.
Who is entitled to *B*'s interest in Blackacre, and why?
- (b) *A* contracts to sell Blackacre to *B*. *A* dies before conveyance and payment of the purchase money, leaving his realty to *X*, and his personalty to *Y*.
Who is entitled to the purchase money, and why?
- (c) In the latter case (b) if *B* dies before conveyance and payment of the purchase money, leaving his realty to *C*, and his personalty to *D*, who is entitled to Blackacre, and who is liable, and to what extent, for the payment of the purchase money, and why?
8. (a) *A* on his marriage covenants to purchase and settle lands to the value of £10,000 on his wife *B*. He purchases lands to the value of £5,000 and settles them upon *B*. On the death of *A*, intestate, shortly after, what are the rights of *B* under the covenant?

(b) *A* on the marriage of his son *X* covenants to settle upon him £10,000. By his will made subsequently *A* leaves to *X* one-third part of the residue of his personal estate and dies without having performed the covenant. What are the rights of *X*?

(c) *A* by his will leaves his daughter *Y* one-third of his residuary estate. Subsequently, on *Y*'s marriage, *A* settles £10,000 on her. *A* dies without having altered or revoked his will. What are the rights of *Y*?

9. In what classes of cases does Equity grant relief on the ground of accident? Give illustrations.
10. Plaintiff brought an action for specific performance of a written agreement for a lease with a parol variation. Defendant relied on the Statute of Frauds (Instruments Act 1890, section 208), and counter-claimed for specific performance of the written agreement without the variation.

Discuss the rights of the parties.

EDUCATION.

SECTION A.

The Board of Examiners.

PASS AND HONOUR PAPER.

1. "The development of the child in school can proceed naturally only when the school is rightly related to all the educational agencies of Society." What theory of education is here set forth? How does Parker enable you to establish this relation?

2. What do you consider is the value to a teacher of any grade of school understanding the views of Froebel?
3. What are some of Thring's views on teaching language?
4. Take a first lesson in Latin, French, Algebra, or Theoretical Geometry, and set it out according to the Herbartian Steps.
5. Apply the Doctrine of Apperception to the course of teaching in—
English and Latin,
or in
Arithmetic and Algebra.
6. What standards for criticising the work of a school are furnished by Froebel's Law of Unity and Herbart's Doctrine of Apperception?
7. Contrast the views of Baldwin with those of Dr. Harris, on the "Necessary Groups of Studies." What principles of education underlie this discussion?
8. Why does the acceptance of the Doctrine of Apperception lead to Child Study? Contrast the findings of Lange with those of Parker on the content of the children's minds on entering school, and reconcile the two views.
9. Why is Parker's work styled the Theory of Concentration? What great tendency of modern education does he here set forth? In how far is he successful in solving the problem proposed?

10. Which of the books studied has been most helpful to you? In giving your reasons, show that you have been enabled to understand something of the aims, tendencies, relationships, and methods of modern education.

N.B.—Only Nine questions to be attempted.

EDUCATION.

SECTION B.

The Board of Examiners.

PASS AND HONOUR PAPER.

I.

1. "The school is an integral part of Society, and must sooner or later come into agreement with changed views as to the ends of Society." Establish this from the history of Athenian education.
2. "The history of Education since the end of the Sixteenth Century has been but a series of attempts to remove the shackles imposed by the Renaissance and Reformation."
 - (a) How far is this statement true?
 - (b) In what respect is it not true?
 - (c) Summarise the "series of attempts."
3. Give the relation of Pestalozzi to his predecessors and to his successors.

4. Name an English and a Continental educator of the Seventeenth Century, contrast them, and indicate in how far either of them anticipated modern reforms.

II.

1. Give and criticise Herbart's division of Interests, and show how, by means of it, we can commend or condemn any programme of instruction.
2. What is the relation of Herbart's five fundamental ideas to his whole system of education?
3. What is the relation of Interest to Self-Activity?
4. What principle underlies the scheme of work set out in "Organic Education"? What are your views on the experiment here set forth?

III.

1. What features in the German educational system do you consider should we endeavour to follow? In particular, discuss the question of examination.
2. In a school course extending from the age of six to sixteen or eighteen, give an account of the language training the pupil should go through.
3. "The classics have only themselves to blame for the lessened regard in which they are held." Discuss this statement, and contrast the two methods of teaching which are here implied.

4. Give an outline of a course of Mathematics extending from the Kindergarten into the Secondary School. In particular, show how and when Algebra and Theoretical Geometry should be begun.

N.B.—Only Three questions from each of I., II., and III. to be attempted.

MACHINE DESIGNING.

Professor Kernot.

Make a complete set of working drawings for a bearing on a shaft, 3 inches diameter, showing all lubricating arrangements. The shaft may be assumed to make 200 revolutions a minute, and to carry a weight of 1,000 lbs. in the immediate vicinity of the bearing. Specify material and workmanship throughout.

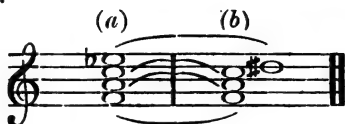
HARMONY.

FIRST YEAR (DIPLOMA).

The Board of Examiners.

1. In a succession of Sixths (four-part writing), what claims the attention of the student? Illustrate your answer by a succession of chords of the sixth upon the degrees of the C Major Scale—ascending or descending.
2. Give rules for approaching and quitting the chord of the Six-four in the Dominant. Illustrate your answer by examples.

3. Under what conditions may Consecutive Fifths be allowed? Give illustrations.
4. Resolve the following chord in several different ways:—



5. Harmonize the Figured Bass:—

3 - 5 6 3 4 3 7 3 3 3 3 6 3 6 5 4 3

- 3 6 5 8 7 5 3 3 3

3 3 6 - 4 7 5 6 5 6 5 6

6 5 6 6 - 6 6 6 - 6 5 6 8 7

6. Harmonize the Unfigured Bass :—

Three staves of musical notation for unfigured bass in G major, 3/2 time. The first staff shows the original melody with a fermata over the final note. The second and third staves show two different harmonic realizations of the same melody.

7. Harmonize *one* of the Melodies—

A.

Moderato.

Four staves of musical notation for a melody in B-flat major, 2/4 time, marked *Moderato*. The first staff is the melody. The second, third, and fourth staves show three different harmonic realizations of the melody.

M

B.



8. Shew in Four-part Chords the harmonic framework of Cramer's Study in E Minor, No.

Or,

Write a few bars of original harmony in G Minor, introducing the Dominant Ninth, Added Sixth, and Neapolitan Sixth (pathetic cadence.)

HARMONY.

FIRST YEAR MUS. BAC.—SECOND YEAR DIPLOMA.

The Board of Examiners.

PASS AND HONOUR PAPER.

1. Set the Melody for three female voices unaccompanied :—
Andantino.

2. Add Soprano, Alto and Tenor parts to the Figured Bass :—

M 2

Three staves of musical notation in G major (one sharp). The first staff contains the melody with figured bass notation: 2, 6, 4, 2, 6, 3, 4, 3. The second staff contains a harmonic accompaniment with figured bass notation: 7, #6, 6, 6, 6, 5, 6, 3, 5, 6, #4. The third staff contains a further harmonic accompaniment with figured bass notation: #4, 6, 5, 3, 5, 4, 6, 7, 3, 7.

3. Add Alto, Tenor, and Bass parts to the Melody: —
Andante.

Three staves of musical notation in G major, each starting with a treble clef and a common time signature. The first staff shows a simple harmonic accompaniment. The second staff shows a more complex accompaniment with sixteenth notes. The third staff shows a further developed accompaniment with sixteenth notes and rests.

4. Add simple Instrumental Accompaniment to the Melody :—

Con moto.

The musical notation consists of three staves in treble clef, one flat key signature, and 6/8 time. The melody is written in a simple, rhythmic style using eighth and quarter notes. The first staff starts with a treble clef, a key signature of one flat, and a 6/8 time signature. The melody begins with a quarter note G4, followed by eighth notes A4, B4, and C5. The second staff continues with eighth notes D5, E5, F5, and G5, followed by quarter notes G4 and F4. The third staff continues with eighth notes E4, D4, and C4, followed by quarter notes B3 and A3, ending with a double bar line.

5. Make a harmonic analysis of the following Beethoven movements :—

- (a) The Funeral March in Op. 26, beginning after the Trio.
- (b) The Adagio in Op. 27, No. 2.

HARMONY.

SECOND YEAR MUS. BAC — THIRD YEAR DIPLOMA.

The Board of Examiners.

PASS AND HONOUR PAPER.

1. Harmonize the following Figured Bass in Four Parts:—

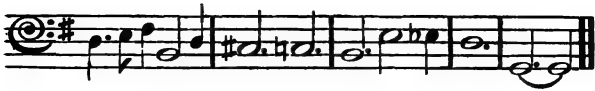
6 7 7 3 7 5 — # —

6 7 # 9 8 6 — 9 8 7 6 5 4 6 7 6 8 4

b 7 4 3 6 7 6 5 7 4 3

2. Harmonize the following Ground Bass for four voices (adding three upper parts). Repeat three times, and add a Short Coda:—

3. Add three upper parts to the following Unfigured Bass:—



4. Add three flowing parts below the following Melody :—



HARMONY.

MUS. BAC.—THIRD YEAR.

The Board of Examiners.

1. To the following Unfigured Bass add four upper parts :—



2. To the following Tenor part add Treble, Alto, and Bass parts :—



3. Set either of the following verses for four voices :—

- (a) Ring out the old, ring in the new,
 Ring happy bells across the snow,
 The year is going, let him go ;
 Ring out the false, ring in the true.
- (b) The spacious firmament on high,
 With all the blue ethereal sky
 And spangled heavens, a shining frame,
 Their great Original proclaim.

COUNTERPOINT.

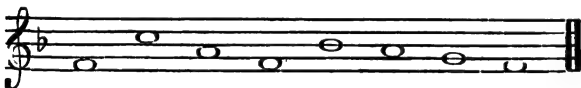
FIRST YEAR (DIPLOMA).

Board of Examiners.

PASS AND HONOUR PAPER.

Honours Candidates should omit Question 1. Pass Candidates should answer EITHER (a) or (b) in Questions 2 and 4.

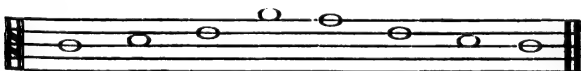
1. Write a C.P. of the Second Species below the C.F.



2. Write a C.P. of the Third Species (a) above, and (b) below, the C.F.



3. Write a C.P. of the Fourth Species above the C.F.



4. Write a C.P. of the Fifth Species (a) above, and (b) below, the same C.F.

5. Transpose the C.F. in Question 1 a major ninth lower, and add two parts above it in First Species.

COUNTERPOINT.

FIRST YEAR MUS. BAC.—SECOND YEAR DIPLOMA.

The Board of Examiners.

PASS AND HONOUR PAPER.

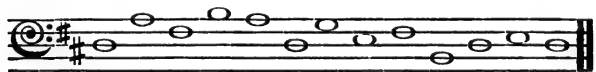
Honours Candidates should omit Questions 1 and 2.

1. Add below the C.F. two parts of which the Alto shall be in Third Species, the Bass in First Species :—

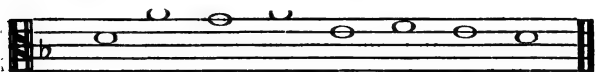


2. Place the same C.F. in the Tenor, and add an upper part in First, and a Bass in Second Species.

3. Add to the C.F. a Soprano part in the Fourth Species, and an Alto or Tenor in the First Species :—

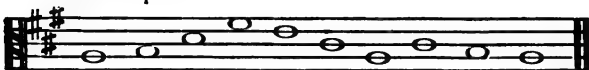


4. Add to the C.F. (which may be placed in any part in any key), two parts, one of which shall be in Fifth, the other in First Species :—

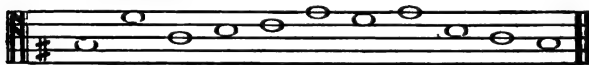


Honours only.

5. To the C.F. add Treble, Tenor and Bass parts in First Species :—



6. To the C.F. add a Treble in First Species, and a Bass in Fourth Species. Do not break the Syncopation :—



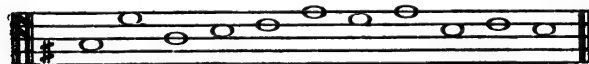
COUNTERPOINT.

SECOND YEAR MUS. BAC.—THIRD YEAR DIPLOMA.

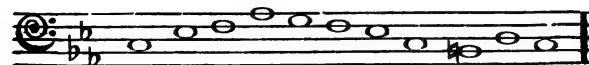
The Board of Examiners.

PASS AND HONOUR PAPER.

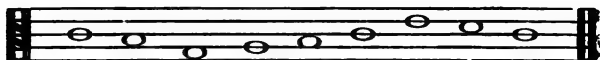
1. To the C.F. add a Treble in Third Species, and a Bass in Fourth Species. Do not break the Syncopation :—



2. To the C.F. add a Treble and an Alto both in Fifth Species :—



3. To the C.F. add a Treble in Third and a Bass in Second Species:—



4. To the C.F. add a Tenor in Fifth and an Alto and a Bass in First Species:—

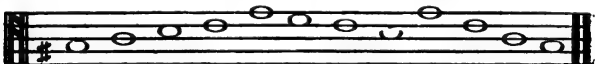


COUNTERPOINT.

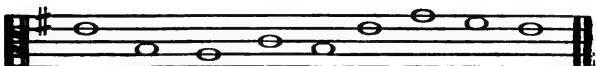
THIRD YEAR, MUS. BAC.

The Board of Examiners.

1. To the C.F. add a Bass in unbroken syncopation, and Treble and Alto of First Species:—



2. To the C.F. add a Treble of Second and a Bass of Third Species:—



2. Continue the following Canon 2 in 1 for about 16 bars, adding a short Coda :—

Musical notation for Canon 2 in 1, starting with a treble clef and a bass clef, in common time. The melody is in the treble clef, and the bass line is in the bass clef. The key signature has one flat (B-flat). The notation shows the first few bars of the canon, followed by "Etc." indicating continuation.

3. Continue the following Canon :—

Musical notation for Canon, starting with a treble clef and a bass clef, in common time. The melody is in the treble clef, and the bass line is in the bass clef. The key signature has two sharps (F# and C#). The notation shows the first few bars of the canon, followed by a large bracket indicating continuation.

4. Give Tonal answers to the following subjects :—



Honours and Mus. Bac. Candidates only.

5. Continue the following Canon and added free part for about 12 bars—add a free Coda :—

HISTORY, LITERATURE, AND ÆSTHETICS OF MUSIC.

THIRD YEAR.

MUS. BAC. AND DIPLOMA IN MUSIC.

The Board of Examiners.

PASS AND HONOUR PAPER.

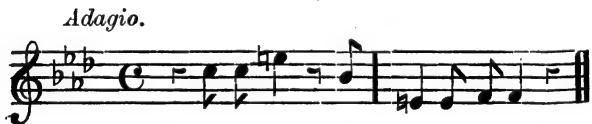
(Pass Candidates may answer EITHER Question 4 or 5—in all, only Four questions. Honours and Mus. Bac. Candidates should devote as much time as they can to Questions 2, 4, and 5.)

1. Identify the following themes:—

A.



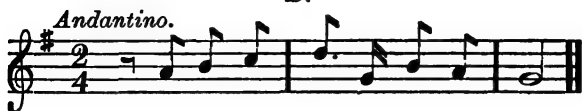
B.



C.



D.



E.



F.



2. Describe what is understood by the Romantic element in music. Shew how at various times this element has exercised strong influence on the formal development of the art especially in the time of (a) Bach, (b) Schubert, (c) Wagner. Make special reference also to the art period (in Literature and Painting as well as in Music), about the end of the 20th Century; also to (a) the personal equation introduced into Music, sacred and secular, (b) the connection which it was sought to establish between Music and set programme, and (c) the influence of national elements—Folklore, Volkslied, Volksweisen.

3. In what respect must Bach be regarded as a Romantic writer? Refer to as many compositions as you can in support of your argument.

N

4. Write a note upon the use which Wagner as a music dramatist made of the material to his hand. Shew what were his aims and ideals, and what modifications these led him to make on legend ('Stoff'), the conventional choice of subject for dramatic treatment, and the forms of operatic music; also on the interpretative means—singers, chorus, ensemble vocal work, and the orchestra. In the course of your answer shew the limitations of Wagner's genius, which, in spite of all the greatness of his work, prevents him from being regarded as the equal of Bach or Beethoven—if such is your opinion.
5. Write an essay on Schubert, his works, and his place among composers. Do not devote much time to unimportant biographical details, but refer to Ballade, Art Song, Sonata, Symphony, and to Schubert's Marches, Dances, and Piano-forte Duets.

HISTORY, LITERATURE, AND ÆSTHETICS.

FIRST YEAR, MUS. BAC.—SECOND YEAR, DIPLOMA.

The Board of Examiners.

PASS AND HONOUR PAPER.

1. Write a short historical note on each of the following works:—
 Salomon Set of Symphonies, Magic Flute, Italian Concerto, Eroica Symphony, English Suites, Creation, Fidelio, Matthew Passion.
- And on each of the following Composers:—
 Haydn, Emanuel Bach, Beethoven.

2. Enumerate as many as you can of Beethoven's compositions up to Op. 31.
 3. Give a general description from memory of any six of Beethoven's sonatas up to No. 17 (including Nos. 5, 8, 10, 14), and of as many as you can of the first six symphonies. Add quotations.
 4. Write an essay on (a) Beethoven's heritage from Haydn and Mozart, and how he enriched it; or (b) the evolution of Beethoven's Second Period. In either essay devote some attention to the Pianoforte, the Orchestra, and the Sonata with other forms of Composition—orchestral and choral as well as pianoforte.
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FORM AND ANALYSIS.

FIRST YEAR, MUS. BAC.—SECOND YEAR,
DIPLOMA.

The Board of Examiners.

PASS AND HONOUR PAPER.

Honours Candidates should omit Questions 2, 3, and 5.

1. Shew the essential points of difference between Binary and Ternary Form, referring to examples which stand on the boundary line between the two.

2. What are the characteristic features of the *Gavotte* (distinguish from *Bourrée*), *Courante*, *Gigue* (two different kinds), *Chaconne*?
3. Enumerate some characteristics of Bach's compositions in Suite form.
4. In what sense is the Suite the forerunner of the Sonata? In what particulars is it incorrect to say that the Sonata is a development of the Suite?
5. Write a note on Mozart's use of Double Counterpoint.
6. Describe Beethoven's Septett in detail. Write a note on the form of composition of which it is the culmination.
7. Make a careful harmonic analysis of the Scherzo (not Trio) from Op. 2, No 3. Mention the keys in bars 9, 13, 17, 19, 21, 23, 25, 39, 40, 50, 51. Explain the chords in 5, 30, 46, 61, and in Coda bars 6, 8, 14.
8. What peculiarities of form are to be found in the following (a) Compositions, and (b) Single Movements:—
 - (a) Beethoven's Op. 13; Op. 27, Nos. 1 and 2; Op. 31, Nos. 2 and 3.
Give a reason or precedent for each departure from conventional form.
 - (b) Mozart's Sonatas in C Minor and F Major; and Beethoven's Op. 7, Op. 10, No. 1, Op. 28 (first movement of each).

9. Some authorities regard the Andante in Op. 13 as a Rondo, with three presentments of the theme and two episodes; others as an Episodic movement, with one episode. Without committing yourself to either, advance arguments in support of both views, using the Largo in Op. 2, No. 2, and the Rondo in Op. 13 as illustrations.
10. Give a careful Analysis of the form of the First and Last movements of Sonata No. 5 (Op. 10, No. 1).

FORM AND ANALYSIS.

THIRD YEAR DIPLOMA.—SECOND YEAR MUS. BAC.

The Board of Examiners.

PASS AND HONOUR PAPER.

(N.B.—Honours and Mus. Bac. Candidates should omit Questions 1, 2, and 3.)

1. Distinguish between the Italian (Scarlatti) and French (Lulli) forms of the Overture. Why is Bach's Partita in B Minor called "Die französische Overture"?
2. In what respect is the overture of the time of (a) Scarlatti, (b) Gluck, (c) Mozart, (d) Beethoven, and (e) Mendelssohn, a form of peculiar interest and importance?

3. What novelties in form are to be observed in the overtures to *Seraglio*, *Magic Flute*, *Egmont* ?
4. Write a short note on the Overture with Introduction, shewing the origin of the form, and referring to examples—
 - (a) Which use the Introduction to establish a close connection with the dramatic subject, and
 - (b) Which shew “transformation of theme.”
5. Describe as minutely as your memory will allow any two of the following Overtures:—*Don Giovanni*, *Semiramide*, *Leonora No. 3*, *Tannhäuser*.
6. Write a careful analysis of Beethoven's Sonata Op. 90 and of Bach's Fugue in C Minor (Book II.)



Honours and Mus. Bac. Candidates only.

7. Shew how the Overture form is founded upon Sonata form. Describe Mozart's treatment of the form and the modifications of Sonata form in the hands of Beethoven and Mendelssohn (*Coriolan*, *Egmont*, *Fingal's Cave*).
8. Write a short essay on Programme Music and the part played in its development by the Overture.
9. Shew how the composer of the *Freischütz* Overture has kept at once to his programme and to the rules of Sonata form.

INSTRUMENTATION.

THIRD YEAR DIPLOMA.—PASS AND HONOURS.

THIRD YEAR MUS. BAC.—PASS.

The Board of Examiners.

PASS AND HONOUR PAPER.

N.B.—Pass candidates (Diploma) should answer questions 1 to 7 only; Honours candidates, 3 to 9; Mus. Bac. candidates, 6 to 10.

1. In what early overtures are trombones employed, and in whose overtures do we first find those instruments used as an essential part of the orchestra?
2. What is the literal meaning and also the derivation of *Piccolo*, *Bratsche*, *Violoncello*, *Trombone*, *Violin*, *Pianoforte*?
3. Explain the terms "Natural Horn," "Horn in F, G, &c." (with crook), "Valve" or "Ventil Horn."
4. Enumerate the transposing instruments in a modern orchestra, and explain how their parts must be read.
5. Give a reason for the (usually) fuller scoring of a classical overture compared with that of a symphony (Mozart, Beethoven, &c.).
6. Explain the scoring of the passages under *A* on the accompanying sheet.

7. Name notable orchestral effects in the following :—
Seraglio, Egmont, Leonora Overtures; Pastoral Symphony (“Scene on the Brook”).
8. What, in addition to the usual strings, is the orchestra employed in the following :—(a) *Seraglio*, (b) *Figaro*, (c) *Egmont*, (d) *Freischütz*, (e) *Fingal's Cave Overtures* and Haydn's “Military,” and (f) Beethoven's Fifth Symphony (Finale).
9. Score for Wind Instruments the sections of passages shewn under *B* on the accompanying sheet. Name the compositions.
10. Score for small orchestra the first twenty bars of Beethoven's Sonata op. 26; also the first four bars of Variation 1 and the first eight bars of Variation 4.

Or,

as much as you can of the Funeral March in the same Sonata for full orchestra.


MUSICAL TERMINOLOGY.

FIRST YEAR DIPLOMA.

The Board of Examiners.

1. Give the meaning of each of the following terms:—
Symphony, Coda, Movement (applied to a section of a Sonata, &c.), Concerto, Toccata, Mordent.
Equal Temperament, “Wohltemperirtes Klavier.”

2. Give the derivation or origin, also the modern meaning, of each of the following :—

Minuet, Sonata, Andante, Mass, Counterpoint, Tenor, Solfeggio, Oratorio, Treble, Arpeggio, Discant, Conservatorium, Philharmonic, Liedertafel, Chorus,  b.

3. Give the meaning of the following directions :—

Soave, pesante, come sopra, pizzicato, semplice, l'istesso tempo.

4. What is a Metronome? Explain how it is used, and what the meaning is of $\text{♩} = 120$.

5. Name several "keyed" instruments. How did the notes on the keyboards come to be called "keys"? What was the original name, and what words are derived therefrom?



HONOUR EXAMINATION, NOVEMBER, 1906.

GREEK.—PART I. (TRANSLATION OF
PREPARED BOOKS.)*The Board of Examiners.*

1. Translate, with brief notes in the margin where you think them called for—

- (a) ἄλλ' εἰ μὲν δώσουσι γέρας μεγάθυμοι Ἀχαιοί,
ἄρσαντες κατὰ θυμόν, ὅπως ἀντάξιον ἔσται·
εἰ δέ κε μὴ δώωσιν, ἐγὼ δέ κεν αὐτὸς ἔλωμαι
ἢ τεὸν ἢ Αἴαντος ἰὼν γέρας ἢ Ὀδυσῆος
ἄξω ἑλών· ὃ δέ κεν κεχολώσεται, ὃν κεν ἴκωμαι.
- (b) εἰ δέ μιν αἰχμητὴν ἔθεσαν θεοὶ αἰὲν ἑόντες,
τούνεκά οἱ προθέουσιν ὄνειδεα μυθήσασθαι;
- (c) δαιμονίη, αἰεὶ μὲν οἶεαι, οὐδέ σε λήθω·
πρῆξαι δ' ἔμπης οὐ τι δυνήσεται, ἀλλ' ἀπὸ θυμοῦ
μᾶλλον ἐμοὶ ἔσειαι· τὸ δέ τοι καὶ ῥίγιον ἔσται.
εἰ δ' οὕτω τοῦτ' ἐστίν, ἐμοὶ μέλλει φίλον εἶναι.
ἀλλ' ἀκέουσα κάθησο, ἐμῶ δ' ἐπιπείθεο μύθω,
μὴ νύ τοι οὐ χραίσμωσιν ὅσοι θεοὶ εἰς ἔν' Ὀλύμπῳ
ἄσσον ἰόνθ', ὅτε κέν τοι ἀάπτους χεῖρας ἐφήω.
- (d) ἤδη γὰρ καὶ δεῦρό ποτ' ἤλυθε δῖος Ὀδυσσεύς
σεῦ ἕνεκ' ἀγγελίης σὺν ἀρηιφίλῳ Μενελάῳ·
τοὺς δ' ἐγὼ ἐξείνισσα καὶ ἐν μεγάροισι φίλησα,
ἀμφοτέρων δὲ φυὴν ἐδάην καὶ μήδεα πυκνά.
ἀλλ' ὅτε δὴ Τρώεσσι ἐν ἀγρομένοισι ἐμιχθεν,
στάντων μὲν Μενέλαος ὑπείρεχεν εὐρέας ὤμους,
ἄμφω δ' ἐζομένω γεραρώτερος ἦεν Ὀδυσσεύς.

(e) μή μ' ἔρεθε, σχετλίη, μὴ χωσαμένη σε μεθήω,
 τὼς δέ σ' ἀπεχθήρω ὡς νῦν ἔκπαγλα φίλησα,
 μέσσω δ' ἀμφοτέρων μητίσομαι ἔχθεα λυγρά,
 Τρώων καὶ Δαναῶν, σὺ δέ κεν κακὸν οἶτον ὄληαι.

2. Explain—*τρητοῖσι* (*δινωτοῖσι*) *λέχεσιν* — *μοιρηγ-
 ενές*—*εἰ δέ ποτ' ἔς γε μίαν βουλεύσομεν*—*νῆες
 ἀμφιέλισσαι*—*δέπας ἀμφικύπελλον*—*ἐπὶ ἦρα φέρειν*
 —*οὐλοχύτας προβάλλοντο*—*ὄν Βριάρεων καλέουσι
 θεοί, ἄνδρες δέ τε πάντες Αἰγαίωνα*—*θέμιστες*—
Σμινθεῦ.

3. Give a very succinct account of—

- (a) the probable dialect of the original Achilles-
 poem;
- (b) indications in Homer of the physique and
 armour of the Achaeans as distinguished
 from the Aegean peoples.

4. Write down the Attic equivalents of—*ἡγερθεν,
 χέρηι, φθινύθεσκε, εἶατο, ἐπιτετράφαται, ἄγε δὴ
 τραπέιομεν φιλότητι*.

5. Translate (as above)—

- (a) Κράτος Βία τε, σφῶν μὲν ἐντολῇ Διὸς
 ἔχει τέλος δὴ, κούδεν ἐμποδῶν ἔτι.
- (b) ἐμοὶ δὲ μήτηρ οὐχ ἅπαξ μόνον Θέμις,
 καὶ Γαῖα, πολλῶν ὀνομάτων μορφή μία,
 τὸ μέλλον ἢ κραινοῖτο προὔτεθεσπικεῖ,
 ὡς οὐ κατ' ἰσχὺν οὐδὲ πρὸς τὸ καρτερόν
 χρεῖη, δόλω δὲ τοὺς ὑπερσχόντας κρατεῖν.
- (c) ζηλῶ σ', ὀθούνεκ' ἐκτὸς αἰτίας κυρεῖς,
 πάντων μετασχῶν καὶ τετολημκῶς ἐμοί.

- (d) ὀπόσοι τ' ἔποικον ἀγνᾶς Ἀσίας ἔδος νέονται,
 μεγαλοστόνοισι σοῖς πῆμασι συγκάμνουσι θνατοῖ·
 Κολχίδος τε γᾶς ἔνοικοι
 παρθένοι, μάχας ἄτρεστοι,
 καὶ Σκύθης ὄμιλος, οἱ γᾶς
 ἔσχατον τόπον ἀμφὶ Μαιῶτιν ἔχουσι λίμναν·
 Ἀραβίας τ' ἄρειον ἄνθος,
 ὑψίκρημνον οἱ πόλισμα
 Καυκάσου πέλας νέονται,
 δάϊος στρατὸς, ὄξυπρόροισι βρέμων ἐν αἰχμαῖς.
- (e) IΩ. μήτοι με κρύψης τοῦθ' ὅπερ μέλλω παθεῖν.
 ΠΡ. ἀλλ' οὐ μεγαίρω τοῦδέ σοι δωρήματος.
 IΩ. τί δῆτα μέλλεις μὴ οὐ γεγωνίσκειν τὸ πᾶν ;
 ΠΡ. φθόνος μὲν οὐδεὶς, σὰς δ' ὀκνῶ θράξαι φρένας.
 IΩ. μή μου προκῆδον μᾶσσον ὡς ἐμοὶ γλυκύ.

6. Explain tersely—

- (a) The grammar of—ἢ κἀμὲ γάρ τι ξυμφοραῖς
 ἐπαιτιᾷ ;—ὡς τοίνυν ὄντων τῶνδ' ἐσοὶ μαθεῖν
 πάρα—γῆν πρὸ γῆς ἐλαύνομαι—ἐξελευσάμην
 βροτοὺς τὸ μὴ εἰς Ἀιδου μολεῖν—οὐκ ἔστιν
 ὄψ μείζονα μοῖραν νείμαιμ' ἢ σοί.
- (b) The meaning of—κυμάτων ἀνήριθμον γέλασμα
 Ἐρινύες—κηρόπλαστος δόναξ—αἱ προσήγοροι
 δρύες—Ζηνὸς ἀκραγεῖς κύνες.

7. (a) What rational account can be given of the Prometheus-myth ?

- (b) Explain—στάσιμον, ἐπεισόδιον, περιάκτοι.

8. Translate, with notes, as above—

- (a) Ὡς δὲ ἐς τὴν Σαλαμίνα συνῆλθον οἱ στρατηγοὶ
 ἀπὸ τῶν εἰρημένων πολιῶν, ἐβουλεύοντο προθέντος
 Εὐρυβιάδew γνώμην ἀποφαίνεσθαι τὸν βουλόμενον,

δοκου δοκέοι ἐπιτηδεώτατον εἶναι ναυμαχίην ποιέεσθαι τῶν αὐτοῖ χωρέων ἐγκρατεές εἰσί· ἢ γὰρ Ἀττικῆ ἀφεῖτο ἤδη, τῶν δὲ λοιπέων περί προεγίθεε· αἱ γνῶμαι δὲ τῶν λεγόντων αἱ πλεῖσται συνεξέπιπτον πρὸς τὸν Ἴσθμὸν πλώσαντας ναυμαχέειν πρὸ τῆς Πελοποννήσου ἐπιλέγοντες τὸν λόγον τόνδε, ὡς, ἢν νικηθῶσι τῇ ναυμαχίῃ ἐν Σαλαμῖνι μὲν ἔόντες, πολιορκήσονται ἐν νήσῳ, ἵνα σφι τιμωρίῃ οὐδεμία ἐπιφανήσεται· πρὸς δὲ τῷ Ἴσθμῳ, ἐς τοὺς ἑωυτῶν ἐξοίονται.

(b) Οὗτος δὲ ἄλλος λέγεται λόγος περὶ τοῦ Ξέρξεω νόστου, οὐδαμῶς ἔμοιγε πιστός, οὔτε ἄλλως οὔτε τὸ Περσέων τοῦτο πάθος· εἰ γὰρ δι᾽ ταῦτα οὕτω εἰρέθη ἐκ τοῦ κυβερνήτεω πρὸς Ξέρξεα, ἐν μυρήσι γνῶμησι μίαν οὐκ ἔχω ἀντίξοον, μὴ οὐκ ἂν ποιῆσαι βασιλέα τοιόνδε· τοὺς μὲν ἐκ τοῦ καταστρώματος καταβιβάσαι ἐς κοίλην νῆα, ἔοντας Πέρσας καὶ Περσέων τοὺς πρώτους, τῶν δ' ἑρετέων, ἔόντων Φοινίκων, ὅκως οὐκ ἂν ἴσον πλῆθος τοῖσι Πέρσησι ἐξέβαλε ἐς τὴν θάλασσαν.

9. Comment on the grammar of—ἐποιέετο πᾶν ὅκως ἂν ἐξισωθείη—δύο ὀπλίτας μέζοντας ἢ κατὰ ἀνθρώπων φύσιν ἔχοντας ἔπεσθαί σφι.
10. Give the Herodotean words for ἠττάω, βλάπτω, ἀναλίσκω; and the Attic for ἀναγνώσαι, πρόκατε, ἐλινύω, ἐκέατο ἀλέες. Parse προεσάζαντο. Comment on the Ionic use of πρόβυτα, ἐπίσταμαι, καταφρονεῖν.
11. Where were Scione, Ellopia, Hollows of Euboea, Aphetae, Amphissa, Hermione?
12. Contrast Socrates' theory of sin with the notions prevalent at the time.

13. Translate, with notes, as above—

- (a) ἄρα καὶ ἐν αὐτῇ τῇ τέχνῃ ἔνι τις πονηρία, καὶ δεῖ αἰεὶ ἐκάστη τέχνῃ ἄλλης τέχνης, ἥτις αὐτῇ τὸ ζυμφέρον σκέψεται, καὶ τῇ σκοπούμενῃ ἑτέρας αὐτοιαύτης, καὶ τοῦτ' ἔστιν ἀπέραντον; ἢ αὐτῇ αὐτῇ τὸ ζυμφέρον σκέψεται; ἢ οὔτε αὐτῆς οὔτε ἄλλης προσδεῖται ἐπὶ τὴν αὐτῆς πονηρίαν τὸ ζυμφέρον σκοπεῖν· οὔτε γὰρ πονηρία οὔτε ἁμαρτία οὐδεμία οὐδεμίᾳ τέχνῃ πάρεστιν, οὐδὲ προσήκει τέχνῃ ἄλλῃ τὸ ζυμφέρον ζητεῖν ἢ ἐκείνῳ οὗ τέχνῃ ἐστίν, αὐτῇ δὲ ἀβλαβῆς καὶ ἀκέραιός ἐστίν ὀρθῆ οὔσα, ἕωσπερ ἂν ἢ ἐκάστη ἀκριβῆς ὅλη ἢπερ ἐστί;
- (b) οἱ δὲ τῆς τῶν θεῶν ὑπ' ἀνθρώπων παραγωγῆς τὸν Ὅμηρον μαρτύρονται, ὅτι καὶ ἐκεῖνος εἶπεν
 λιστοὶ δὲ [στρεπτοί] τε καὶ θεοὶ αὐτοί,
 καὶ τοὺς μὲν θυσίαισι καὶ εὐχωλαῖς ἀγαναῖσιν
 λουιβῆ τε κνίσῃ τε παρατρῶπῳσ' ἀνθρωποι
 λισσόμενοι, ὅτε κέν τις ὑπερβῆῃ καὶ ἁμάρτη.
 βίβλων δὲ ὄμαδον παρέχονται Μουσαίου καὶ Ὀρφέως, Σελήνης τε καὶ Μουσῶν ἐγγόνων, ὡς φασί, καθ' ἃς θυηπολοῦσιν, πείθοντες οὐ μόνον ἰδιώτας ἀλλὰ καὶ πόλεις, ὡς ἴρα λύσεις τε καὶ καθαρμοὶ ἀδικημάτων διὰ θυσιῶν καὶ παιδιᾶς ἡδονῶν εἰσὶ μὲν ἔτι ζῶσιν, εἰσὶ δὲ καὶ τελευτήσασιν, ἃς δὴ τελετὰς καλοῦσιν, αἱ τῶν ἐκεῖ κακῶν ἀπολύουσιν ἡμᾶς, μὴ θύσαντας δὲ δεινὰ περιμένει.

14. Discuss briefly—

οὐδεὶς ἂν γένοιτο, ὡς δόξειεν, οὕτως ἀδαμάντινος, ὅς ἂν μείνειεν ἐν τῇ δικαιοσύνῃ·

15. Explain—εἰρωνεύεσθαι, ἴδιοι λόγοι, δημιουργός, αὐλή, κατετείννας, ὄσια, Schema Pindaricum.

16. Translate and discuss from the point of view of textual criticism—

Ἄρ' οὖν καὶ νόσον ὅστις δεινὸς φυλάξασθαι καὶ λαθεῖν, οὗτος δεινότατος ἐμποιῆσαι;

LATIN.—PART I. (TRANSLATION OF
PREPARED BOOKS.)

The Board of Examiners.

1. Translate, with terse notes where you think them called for—
 - (a) Tactus enim leti satis esset causa profecto,
quippe ubi nulla forent aeterno corpore quorum
contextum uis deberet dissoluere quaeque.
 - (b) praeterea per se quodcumque erit, aut faciet
quid
aut aliis fungi debebit agentibus ipsum
aut erit ut possint in eo res esse gerique.
 - (c) sed quae corpora decedant in tempore quoque,
inuida praeclusit speciem natura uidendi.
 - (d) insula quem triquetris terrarum gessit in oris,
quam fluitans circum magnis anfractibus aequor
Ionium glaucis adspargit uirus ab undis.
 - (e) Heraclitus inquit quorum dux proelia primus,
clarus ob obscuram linguam magis inter inanis
quamde grauis inter Graios qui uera requirunt.
 - (f) perspicere ut possis res gestas funditus omnis
non ita uti corpus per se constare neque esse,
nec ratione cluere eadem qua constet inane,
sed magis ut merito possis euenta uocare
corporis atque loci, res in quo quaeque gerantur.

2. State briefly the Epicurean physical theory, with
the proper Latin terms. Enumerate the words
used by Lucretius for "atoms" and "to be."
Explain *homoeomeria*.

3. Comment on the forms—*indugredi, consumpse, redducit, escit, queatur.*

4. Translate (as above)—

(a) *Ipsi per medias acies insignibus alis
Ingentes animos angusto in pectore versant,
Usque adeo obnixa non cedere, dum gravis
aut hos
Aut hos versa fuga victor dare terga subegit.*

(b) *Namque sub Oebaliae memini me turribus
arcis,
Qua niger umectat flaventia culta Galaesus,
Corycium vidisse senem, cui pauca relictis
Iugera ruris erant, nec fertilis illa iuvenca,
Nec pecori oportuna seges nec commoda
Baccho.*

(c) *Est etiam flos in pratis, cui nomen amello
Fecere agricolae, facilis quaerentibus herba ;
Namque uno ingentem tollit de caespite silvam,
Aureus ipse, sed in foliis, quae plurima
circum
Funduntur, violae subluet purpura nigrae.*

(d) *Non te nullius exercent numinis irae.
Magna luis commissa: tibi has miserabilis
Orpheus
Haudquaquam ob meritum poenas, ni fata
resistant,
Suscitat, et rapta graviter pro coniuge saevit.
Illa quidem, dum te fugeret per flumina
praeceps,
Immanem ante pedes hydrum moritura puella
Servantem ripas alta non vidit in herba.*

5. (a) Discuss briefly the object of Vergil in writing the *Georgics*. Comment on any means which he adopts of making a didactic work "poetical."
- (b) What are the chief errors which he commits concerning bees?

6. Explain succinctly the meaning or grammar (as the case may be) of—*Ixionii vento rota constitit orbis—seras in versum distulit ulmos—vestibulum—imbrex—si quem numina laeva sinunt auditque vocatus Apollo—carmina qui lusi pastorum—Pellaei Canopi—esse apibus partem divinae mentis et haustus aetherios—viva volare sideris in numerum—trunca pedum.*

7. Translate (as above)—

(a) milesne Crassi coniuge barbara
 turpis maritus vixit et hostium
 (pro curia inversique mores!)
 consenuit socerorum in armis

sub rege Medo Marsus et Apulus,
 anciliorum et nominis et togae
 oblitus aeternaeque Vestae
 incolumi Iove et urbe Roma?

(b) unico gaudens mulier marito
 prodeat iustis operata divis,
 et soror clari ducis et decorae
 supplice vitta

virginum matres iuvenumque nuper
 sospitum. vos, o pueri et puellae
 iam virum expertae, male ominatis
 parcite verbis.

- (c) **campestres melius Scythae,**
 quorum plaustra vagas rite trahunt domos,
vivunt et rigidi Getae,
 inmetata quibus iugera liberas
 fruges et Cererem ferunt,
 nec cultura placet longior annua,
 defunctumque laboribus
 aequali recreat sorte vicarius.
- (d) **dicar, qua violens obstrepit Aufidus**
 et qua pauper aquae Daunus agrestium
 regnavit populorum, ex humili potens
 princeps Aeolium carmen ad Italos
 deduxisse modos.

8. Explain the epithets in—

Vester, Camenae, vester in *arduos*
 tollor Sabinos, seu mihi *frigidum*
 Praeneste seu Tibur *supinum*
 seu *liquidae* placuere Baiae.

9. Explain the meaning or grammar (as the case may be) of—*destituit deos mercede pacta Laomedon*—*eradenda cupidinis pravi sunt elementa*—*concidit auguris Argivi domus ob lucrum*—*nec Laestrygonia Bacchus in amphora*—*uxor invicti Iovis esse nescis*—*virtus repulsae nescia sordidae*—*donec non alia magis arsisti*—*abstineto irarum.*

10. Translate with notes—

- (a) **quamquam, etsi priore foedere staretur, satis cautum erat Saguntinis, sociis utrorumque exceptis; nam neque additum erat "iis, qui tunc essent" nec "ne qui postea adsumerentur"; et cum adsumere novos liceret socios, quis aeoum**

censeret aut ob nulla quemquam merita in amicitiam recipi, aut receptos in fidem non defendi, tantum ne Carthaginensium socii aut sollicitarentur ad defectionem aut sua sponte desciscentes reciperentur ?

- (b) is et ipse Alpinus amnis longe omnium Galliae fluminum difficillimus transitu est; nam, cum aquae vim vehat ingentem, non tamen navium patiens est, quia nullis coercitus ripis, pluribus simul neque iisdem alveis fluens nova semper vada novosque gurgites—et ob eadem pediti quoque incerta via est—, ad hoc saxa glareosa volvens nihil stabile nec tutum ingredienti praebet.
- (c) extemplo et circa a praetore ad civitates missi legati tribunisque suos ad curam custodiae intendere, et ante omnia Lilybaeum teneri apparatu belli, edicto proposito, ut socii navales decem dierum cocta cibaria ad naves deferrent, ut, ubi signum datum esset, ne quid moram conscendendi faceret, perque omnem oram, qui ex speculis prospicerent adventantem hostium classem, dimitti.

11. Comment on—

- (a) *Adversum femur tragula graviter ictus.*
- (b) *Ne cuius suorum popularium mutatam secum fortunam esse vellent.*
- (c) *Victores ad centum sexaginta nec omnes Romani, sed pars Gallorum, victi amplius ducenti ceciderunt.*
- (d) *Nox una Hannibali sine equitibus acta est.*

12. Describe a consul's proceedings on his first day of office, giving the Latin technical terms.

13. Translate (as above)—

- (a) Agitatum secreto, num et Piso proficisceretur, maiore praetexto, illi auctoritatem senatus, hic dignationem Caesaris laturus.
- (b) Ignarus interim Galba et sacris intentus fatigabat alieni iam imperii deos, cum adfertur rumor rapti in castro incertum quem senatorem, mox Othonem esse qui raperetur; simul ex tota urbe, ut quisque obvius fuerat, alii formidine augentes, quidam minora vero, ne tum quidem obliti adulationis.
- (c) nec principes modo coloniarum aut castrorum, quibus praesentia ex affluentia et parta victoria magnae spes, sed manipuli quoque et gregarius miles viatica sua et balteos phalerasque, insignia armorum argento decora, loco pecuniae tradebant instinctu et impetu et avaritia.
- (d) Celsus constanter servatae erga Galbam fidei crimen confessus exemplum ultro imputavit. nec Otho quasi ignosceret, sed, ne hostem metueret, consiliatorem adhibens statim inter intimos amicos habuit et mox bello inter duces delegit.
- What is the MSS. reading for consiliatorem? Can it be defended?
- (e) Precibus et igne puro altaria adolentur.

GREEK.—PART II. (TRANSLATION OF PREPARED BOOKS.)

The Board of Examiners.

1. Translate, with brief notes in the margin where you think them called for—

- (a) ἀλλ' εἰ μὲν δώσουσι γέρας μεγάθυμοι Ἀχαιοί,
ἄρσαντες κατὰ θυμόν, ὅπως ἀντάξιον ἔσται·
εἰ δέ κε μὴ δώωσιν, ἐγὼ δέ κεν αὐτὸς ἔλωμαι
ἢ τεὸν ἢ Αἴαντος ἰὼν γέρας ἢ Ὀδυσῆος
ἄξω ἑλών· ὃ δέ κεν κεχολώσεται, ὃν κεν ἴκωμαι.
- (b) εἰ δέ μιν αἰχμητὴν ἔθεσαν θεοὶ αἰὲν εἰόντες,
τοῦνεκά οἱ προθέουσιν ὀνειδέα μυθήσασθαι ;
- (c) δαιμονίη, αἰεὶ μὲν οἴεαι, οὐδέ σε λήθω·
πρῆξαι δ' ἔμπης οὐ τι ἐννήσειαι, ἀλλ' ἀπὸ θυμοῦ
μᾶλλον ἐμοὶ ἔσεαι· τὸ δέ τοι καὶ ῥίγιον ἔσται.
εἰ δ' οὕτω τοῦτ' ἐστίν, ἐμοὶ μέλλει φίλον εἶναι.
ἀλλ' ἀκέουσα κάθησο, ἐμῶ δ' ἐπιπέιθεο μύθῳ,
μή νύ τοι οὐ χραίσμωσιν ὅσοι θεοὶ εἰς ἔν' Ὀλύμπῳ
ἄσπον ἰόνθ', ὅτε κέν τοι ἀάπτους χεῖρας ἐφήω.
- (d) ἤδη γὰρ καὶ δεῦρό ποτ' ἤλυθε δῖος Ὀδυσσεὺς
σεῦ ἔνεκ' ἀγγελίης σὺν Ἄρηιφίλῳ Μενελάῳ·
τοὺς δ' ἐγὼ ἐξείνισσα καὶ ἐν μεγάροισι φίλησα,
ἀμφοτέρων δὲ φυὴν ἐδάην καὶ μῆδεα πυκνά.
ἀλλ' ὅτε δὴ Τρῶεσσιν ἐν ἀγρομένοισιν ἔμιχθεν,
στάντων μὲν Μενέλαος ὑπείρεχεν εὐρέας ὤμους,
ἄμφω δ' ἐζομένῳ γεραρώτερος ἦεν Ὀδυσσεύς.
- (e) μή μ' ἔρεθε, σχετλίη, μὴ χωσαμένη σε μεθήω,
τῶς δέ σ' ἀπεχθήρω ὡς νῦν ἔκπαγλα φίλησα,
μέσσω δ' ἀμφοτέρων μητίσομαι ἔχθεα λυγρά,
Τρώων καὶ Δαναῶν, σὺ δέ κεν κακὸν οἶτον ὄληαι.

2. Explain—*τρητοῖσι (δινωτοῖσι) λέχεσσι—μοιρηγενές—*
εἰ δέ ποτ' ἔς γε μίαν βουλευσομεν—νῆες ἀμφιέλισσαι
—δέπας ἀμφικύπελλον—ἐπὶ ἦρα φέρειν—οὐλοχύτας
προβάλοντο—ὄν Βριάρεων καλέουσι θεοί, ἄνδρες ἔε
τε πάντες Αἰγαίωνα—θέμιστες—Σμινθεύ.
3. Give a very succinct account of—
- (a) The probable dialect of the original Achilles-poem.
- (b) Indications in Homer of the physique and armour of the Achæans as distinguished from the Ægean peoples.
4. Write down the Attic equivalents of—*ἤγερθεν,*
χέρηι, φθινόθεσκε, εἶατο, ἐπιτετράφαται, ἄγε δὴ
τραπείομεν, φιλόττηι.
5. Translate, with notes as above—
- (a) *καιρὸν εἰ φθέγξαιο, πολλῶν πείρατα συντανύσαις*
ἐν βραχεῖ, μείων ἔπεται μῶμος ἀνθρώπων. ἀπὸ
γὰρ κόρος ἀμβλύνει
αἰανῆς ταχείας ἐλπίδας .
ἀστῶν δ' ἀκοὰ κρύφιον θυμὸν βαρύνει μάλιστ'
ἔσλοῖσιν ἐπ' ἄλλοτρίοις.
ἀλλ' ὅμως, κρέσσων γὰρ οἰκτιρμοῦ φθόγος,
μὴ παρίει καλά. νῶμα δικαίῳ πηδαλίῳ στρατόν·
ἄψενδεῖ δὲ πρὸς ἄκμονι χάλκευε γλῶσσαν.
εἴ τι καὶ φλαῦρον παραιθύσσει, μέγα τοι φέρεται
πὰρ σέθεν.
- (b) *γένοι' οἶος ἔσσι μαθῶν· καλὸς τοι πίθων παρὰ*
παισίν, αἰεὶ
καλός. ὁ δὲ Ῥαδάμανθος εὔπέπραγεν, ὅτι φρενῶν
ἔλαχε καρπὸν ἀμώμητον, οὐδ' ἀπάταισι θυμὸν
τέρπεται ἔνδοθεν,
οἷα ψιθύρων παλάμαις ἔπετ' αἰεὶ βροτῶν.

- (c) καὶ φθινόκαρπος εἰῶσα διδοῖ ψᾶφον περ' αὐτᾶς,
εἴ ποτε χειμέριον πῦρ ἐξίκηται λοίσθιον,
ἢ σὺν ὀρθαῖς κώνεσσιν δεσποσύναισιν ἐρειδομένα
μόχθον ἄλλοις ἀμφέπη δύστανον ἐν τείχεσιν.
ἐὼν ἐρημώσαισα χῶρον.
6. Name any striking features of (a) the grammar and dialect, (b) the constructive method, of Pindar.
7. Write a note on λευκαῖς πιθήσαντα φρασίν—
εὐμενέοντες ἀνεψιόν—ἐν Πυθῶνι τόσσαίς—'Ἀρχί-
λοχον ἔχθεσιν πλαινώμενον—Διὸς αἰητῶν πάρεδρος
—Ζεφυρία Λοκρῖς—ἄκοντα ἀγῶνος βαλεῖν ἔξω.
8. Translate, as above—
- (a) πολλὰ γὰρ, εὔτε πόλις δαμασθῆ
ἐῆ, δυστυχῆ τε πράσσει.
ἄλλος δ' ἄλλον ἄγει,
φονεύει, τὰ δὲ πυρφορεῖ·
κάπῃ δὲ χραίνεται πόλισμ' ἅπαν'
μαινόμενος δ' ἐπιπνεῖ
λαοδάμας μαιίνων
εὐσέβειαν Ἄρης.
κορκορυγαὶ δ' ἄν' ἄστῃ, πρότι δ' ὀρκάνα
πυργῶτις, πρὸς ἀνδρὸς δ' ἀνὴρ δορὶ κλίνεταιαι.
- (b) τέταρτος ἄλλος, γείτονας πύλας ἔχων
'Οὔγκας Ἀθάνας, ξὺν βοῆ παρίσταται,
'Ἰππομέδοντος σχῆμα καὶ μέγας τύπος.
ἄλω δὲ πολλὴν, ἀσπίδος κύκλον λέγω,
ἔφριξα δινήσαντος· οὐκ ἄλλως ἐρῶ.
ὁ σηματουργὸς δ' οὐ τις εὐτελής ἄρ' ἦν,
ὅστις τόδ' ἔργον ὤπασεν πρὸς ἀσπίδι,
Τυφῶν' ἰέντα πυρπνόον διὰ στόμα
λιγνὺν μέλαιναν, αἰόλην πυρὸς κάσιν·
ὀφέων δὲ πλεκτάναισι περιδρομον κύτος
προσηδάφισται κοιλογάστορος κύκλου.

- (c) ἄλλα γόνων, ὧ φίλαι, κατ' οὖρον
 ἑρέσσειτ' ἀμφὶ κρατὶ πόμπιμον χερσῶν
 πίτυλον, ὃς αἰὲν δι' Ἀχέροντ' ἀμείβεται
 τὰν ἄστολον μελάγκροκον θεωρίδα
 τὰν ἀστιβῆ' πόλλωνι, τὰν ἀνάλιον,
 πάνδοκον εἰς ἀφανῆ τε χέρσον.

9. Comment briefly on the story of Cadmus, and on that of the Sphinx. How do you explain ἑπτατειχεῖς ἔξοδοι?
10. Give instances of metaphorical condensation with word-play in Aeschylus. In what ways is the metaphor qualified or defined?
11. Explain tersely the meaning or grammar (as the case may be) of ἐθρέψατ' οἰκιστῆρας, ὅπως γένοισθε πρὸς χρέος τόδε—πέπλων καὶ στεφάνων πότ', εἰ μὴ νῦν, ἀμφὶ λιτάν' ἔξομεν;—ἐκπέρσειν πόλιν φησίν, οὐδὲ τὴν Διὸς ἔριν ἐμποδῶν σχεθεῖν—φιμοὶ δὲ συρίζουσι βάρβαρον τρόπον.
12. Translate, with notes as above—
- (a) Ὡς δὲ ἐς τὴν Σαλαμίνα συνῆλθον οἱ στρατηγοὶ ἀπὸ τῶν εἰρημένων πολιῶν, ἐβουλεύοντο προθέντος Εὐρυβιάδεω γνώμην ἀποφαίνεσθαι τὸν βουλόμενον, ὅκου δοκέοι ἐπιτηδεύατον εἶναι ναυμαχίην ποιέεσθαι τῶν αὐτοῖ χωρέων ἐγκρατέες εἰσὶ· ἡ γὰρ Ἀττικὴ ἀφεῖτο ἤδη, τῶν δὲ λοιπέων περὶ προετίθεε· αἱ γνώμαι δὲ τῶν λεγόντων αἱ πλεῖσται συνεξέπιπτον πρὸς τὸν Ἴσθμὸν πλώσαντας ναυμαχέειν πρὸ τῆς Πελοποννήσου ἐπιλέγοντες τὸν λόγον τόνδε, ὡς, ἢν νικηθέωσι τῇ ναυμαχίῃ ἐν Σαλαμίῃ μὲν ἔόντες, πολιορκήσονται ἐν νήσῳ, ἵνα σφι τιμωρίῃ οὐδεμία ἐπιφανήσεται· πρὸς δὲ τῷ Ἴσθμῳ, ἐς τοὺς ἑωυτῶν ἔξοίσονται.

(b) Οὗτος δὲ ἄλλος λέγεται λόγος περὶ τοῦ Ξέρξεω νόστου, οὐδαμῶς ἔμοιγε πιστός, οὔτε ἄλλως οὔτε τὸ Περσέων τοῦτο πάθος· εἰ γὰρ διὰ ταῦτα οὕτω εἰρέθη ἐκ τοῦ κυβερνήτεω πρὸς Ξέρξεα, ἐν μυρήσιν γνώμησι μίαν οὐκ ἔχω ἀντίξουν, μὴ οὐκ ἂν ποιῆσαι βασιλέα τοιόνδε· τοὺς μὲν ἐκ τοῦ καταστρώματος καταβιβάσαι ἐς κοίλην νῆα, ἐόντας Πέρσας καὶ Περσέων τοὺς πρώτους, τῶν δ' ἑρετέων, ἐόντων Φοινίκων, ὅπως οὐκ ἂν ἴσον πλῆθος τοῖσι Πέρσῃσι ἐξέβαλε ἐς τὴν θάλασσαν.

13. Comment on the grammar of—ἐποιέετο πᾶν ὅπως ἂν ἐξισωθείη—δύο ὀπλίτας μέζοντας ἢ κατὰ ἀνθρώπων φύσιν ἔχοντας ἔπεσθαί σφι.
14. Give the Herodotean words for ἠττάω, βλάπτω, ἀναλίσκω; and the Attic for ἀναγνώσαι, πρόκατε, ἐλινύω, ἐκέατο ἀλέες. Parse προεσάζαντο. Comment on the Ionic use of πρόβατα, ἐπίσταμαι, καταφρονεῖν.
15. Where were Scione, Ellopia, Hollows of Euboea, Aphetae, Amphissa, Hermione?
16. Translate, with brief notes as above—

(a) εἰ μὲν τὸ σῶμα ἐπιτρέπειν σε ἔδει τῷ διακινδυνεύοντα ἢ χρηστὸν αὐτὸ γενέσθαι ἢ πονηρόν, πολλὰ ἂν περισκέψω, εἴτ' ἐπιτρεπτέον εἴτε οὐ, καὶ εἰς συμβουλήν τοὺς τε φίλους ἂν παρεκάλεῖς καὶ τοὺς οἰκείους, σκοπούμενος ἡμέρας συχνάς· ὁ δὲ περὶ πλείονος τοῦ σώματος ἡγεί, τὴν ψυχὴν, καὶ ἐν ᾧ πάντ' ἐστὶ τὰ σὰ ἢ εὖ ἢ κακῶς πράττειν, χρηστοῦ ἢ πονηροῦ αὐτοῦ γενομένου, περὶ δὲ τούτου οὔτε τῷ πατρὶ οὔτε τῷ ἀδελφῷ ἐπεκοινώσω οὔτε ἡμῶν τῶν ἑταίρων οὐδενί, εἴτ' ἐπιτρεπτέον εἴτε καὶ οὐ τῷ ἀφικομένῳ τούτῳ ξένῳ τὴν σὴν ψυχὴν.

(b) Ἐν γὰρ ταῖς ἄλλαις ἀρεταῖς, ὥσπερ σὺ λέγεις, εἴαν τις φῆ ἀγαθὸς ἀύλητῆς εἶναι ἢ ἄλλην ἡντινοῦν τέχνην ἢν μὴ ἐστίν, ἢ καταγελωσίω ἢ χαλεπαίνουσι, καὶ οἱ οἰκεῖοι προσιόντες νουθετοῦσιν ὡς μαινόμενον· ἐν δὲ δικαιοσύνη καὶ ἐν τῇ ἄλλῃ πολιτικῇ ἀρετῇ, εἴαν τινα καὶ εἰδῶσιν, ὅτι ἀδικός ἐστίν, εἴαν οὗτος αὐτὸς καθ' αὐτοῦ τάληθῆ λέγῃ ἐναντίον πολλῶν, ὃ ἐκεῖ σωφροσύνην ἡγοῦντο εἶναι, τάληθῆ λέγειν, ἐνταῦθα μανίαν, καὶ φασὶ πάντας δεῖν φάναι εἶναι δικαίους, εἴαν τε ᾧσιν εἴαν τε μὴ, ἢ μαίνεσθαι τὸν μὴ προσκοιούμενον δικαιοσύνην, ὡς ἀναγκαῖον οὐδένα ὄντιν' οὐχὶ ἀμωσγέπως μετέχειν αὐτῆς, ἢ μὴ εἶναι ἐν ἀνθρώποις.

17. Explain the grammar of—ὡς γε πρὸς σὲ εἰρησθαι τάληθῆ—ταῦτ' οὖν ἤδη σὺ ἀκόπει, πότερον περὶ αὐτῶν μόνος οἶει δεῖν διαλέγεσθαι πρὸς μόνους—δόξαν ἡμῖν ταῦτα ἐπορευόμεθα; and the meaning of—πόρρω τῶν νυκτῶν—Ἰπποκράτη τὸν Κῶνον, τὸν τῶν Ἀσκληπιαδῶν—ἐν τῷ προστώφῳ—ἕως ἂν οἱ τοξόται αὐτὸν ἀφελκύσωσιν—οὗς πέρυσιν Φερεκράτης ἐδίδαξεν ἐπὶ Ληναίῳ.

18. Explain the attitude of Socrates towards the sophistic teaching.

LATIN.—PART II. (TRANSLATION OF
PREPARED BOOKS.)

The Board of Examiners.

1. Translate, with brief notes in the margin where you think them desirable—
 - (a) *Tactus enim leti satis esset causa profecto, quippe ubi nulla forent aeterno corpore quorum contextum uis deberet dissoluere quaeque.*
 - (b) *praeterea per se quodcumque erit, aut faciet quid aut aliis fungi debet agentibus ipsum aut erit ut possint in eo res esse gerique.*
 - (c) *Sed quae corpora decedant in tempore quoque, inuida praecluserit speciem natura uidendi.*
 - (d) *insula quem triquetris terrarum gessit in oris, quam fluitans circum magnis anfractibus aequor Ionium glaucis adspargit uirus ab undis.*
 - (e) *Heraclitus init quorum dux proelia primus, clarus ob obscuram linguam magis inter inanis quamde grauis inter Graios qui uera requirunt.*
 - (f) *perspicere ut possis res gestas funditus omnis non ita uti corpus per se constare neque esse, nec ratione cluere eadem qua constet inane, sed magis ut merito possis euenta uocare corporis atque loci, res in quo quaeque gerantur.*
2. State briefly the Epicurean physical theory, with the proper Latin terms. Enumerate the words used by Lucretius for "atoms" and "to be." Explain *homoeomeria*.

3. Comment on the forms—*indugredi, consumpse redducit, escit, queatur.*

4. Translate (as above)—

- (a) *Si forte necesse est
Indiciis monstrare recentibus abdita rerum,
Fingere cinctutis non exaudita Cethegis
Continget.*
- (b) *Publica materies privati iuris erit, si
Non circa vilem patulumque moraberis orbem.*
- (c) *Sic priscae motumque et luxuriam addidit arti
Tibicen traxitque vagus per pulpita vestem ;
Sic etiam fidibus voces crevere severis
Et tulit eloquium insolitum facundia praeceps,
Utiliumque sagax rerum et divina futuri
Sortilegis non discrepuit sententia Delphis.*
- (d) *Carminum qui tragico vilem certavit ob hircum
Mox etiam agrestes Satyros nudavit.*
- (e) *Ignotum tragicæ genus invenisse Camenæ
Dicitur et plaustris vexisse poemata Thespis,
Quæ canerent agerentque peruncti faecibus ora.*

5. How does Horace translate the following Greek terms :—

καθόλου, στρογγύλως, κύρια, τὸ ἀρμόττον, πρακτικόν, λεκτικόν ?

Explain the terms—*actus, voti sententia compos, ampullae, bidental.*

6. Translate (as above)—

- (a) *At hoc frementes verterunt bis mille equos
Galli canentes Caesarem,
Hostiliumque navium portu latent
Puppæ sinistrorsum citæ.*

Io Triumphe, tu moraris aureos
 Currus et intactas boves ?
 Io Triumphe, nec Iugurthino parem
 Bello reportasti ducem,
 Neque Africanum, cui super Carthaginem
 Virtus sepulchrum condidit.

- (b) Infamis Helenae Castor offensus vicem,
 Fraterque magni Castoris, victi prece
 Adempta vati reddidere lumina.
 Et tu, potes nam, solve me dementia,
 O nec paternis obsoleta sordibus,
 Neque in sepulchris pauperum prudens anus
 Novendiales dissipare pulveres.

7. Explain the term "Epodes." What were they called by Horace ?

8. Explain—Phocaeorum velut profugit exsecrata
 civitas — sectus flagellis hic triumviralibus
 praeconis ad fastidium—Appiam mannis terit—
 ibis Liburnis inter alta navium, amice, pro-
 pugnacula.

9. Translate, as above—

- (a) De familia liberata nihil est quod te moveat
 primum tuis ita promissum est, te facturam esse
 ut quisque esset meritis; est autem in officio
 adhuc Orpheus, praeterea magno opere nemo;
 ceterorum servorum ea causa est, ut, si res a
 nobis abisset, liberti nostri essent, si obtinere
 potuissent; sin ad nos pertinerent, servirent,
 praeterquam oppido pauci.
- (b) Consulares duce Favonio fremunt; nos
 tacemus, et eo magis, quod de domo nostra nihil
 adhuc pontifices responderunt: qui si sustulerint

religionem, aream praeclaram habebimus; superficiem consules ex senatus consulto aestimabunt: sin aliter, demolientur, suo nomine locabunt, rem totam aestimabunt.

- (c) Reliquum iam est: Σάρταν ἔλαχε, ταύταν κόσμει. Non mehercule possum, et Philoxeno ignosco, qui reduci in carcerem maluit; verum tamen id ipsum mecum in his locis commentor, ut istam probem, idque tu, cum una erimus, confirmabis.

What is the MSS. reading for istam probem? Can it be defended?

- (d) Hoc tibi tam ignoscemus nos amici, quam ignoverunt Medae.
 . . . quae Corinthum arcem altam habebant matronae opulentae, optimates.
 quibus illa manibus gypsatisissimis persuasit, ne sibi vitio illae verterent, quod abesset a patria.

10. Translate, briefly discussing the text—

- (a) Hac quidem cura certe iam vacuus sum; iacet enim ille sic, ut Phocis Curiana stare videatur.
- (b) Sed idem Nerius index edidit ad adligatos Cn. Lentulum Vatiā et C. Cornelium: + ista ei.
- (c) . . . in illo cubiculo tuo, ex quo tibi Stabianum perforasti.

11. Translate and explain—

- (a) Is, quem putabant magistrum fore, si bona venirent.

- (b) *Videsne consulatum illum nostrum, quem Curio antea ἀποθέσειν vocabat, si hic factus erit, fabam mimum futurum?*
- (c) *Explains:—HS. vices; libera legatio voti causa; forum attingere; familiam ducere; rationem ducere; vadimonium concipere; nos vero ferrei.*

12. Translate, as above—

- (a) *Agitatum secreto, num et Piso proficisceretur, maiore praetexto, illi auctoritatem senatus, hic dignationem Caesaris laturus.*
- (b) *Ignarus interim Galba et sacris intentu, fatigabat alieni iam imperii deos, cum adfertur rumor rapi in castra incertum quem senatorem, mox Othonem esse qui raperetur; simul ex tota urbe, ut quisque obvius fuerat, alii formidine augentes, quidam minora vero, ne tum quidem obliti adulationis.*
- (c) *nec principes modo coloniarum aut castrorum, quibus praesentia ex affluentia et parta victoria magnae spes, sed manipuli quoque et gregarius miles viatica sua et balteos phalerasque, insignia armorum argento decora, loco pecuniae tradebant instinctu et impetu et avaritia.*
- (d) *Celsus constanter servatae erga Galbam fidei crimen confessus exemplum ultro imputavit. nec Otho quasi ignosceret, sed, ne hostem metueret, consiliatorem adhibens statim inter intimos amicos habuit et mox bello inter duces delegit.*

What is the MSS. reading for *consiliatorem*?
Can it be defended?

- (e) *Precibus et igne puro altaria dolentur.*

13. The characteristics of the style of Tacitus have been said to be *brevitas*, *varietas*, and *poeticus color*.

Illustrate *any one* of these characteristics from the chapters prescribed.

14. Translate, with notes—

Vibius Crispus, pecunia potentia ingenio inter claros magis quam inter bonos, Annium Faustum equestris ordinis, qui temporibus Neronis delationes factitaverat, ad cognitionem senatus vocabat. nam recens Galbae principatu censuerant patres, ut accusatorum causae noscerentur. id senatus consultum varie iactatum et, prout potens vel inops reus inciderat, infirmum aut validum retinebat adhuc terrores.

15. Remark on anything unusual or non-Ciceronian in Tacitus' use of—*expedio*, *natales*, *impono*, *potissimus*, the ablative absolute, *partes*, *olim*, *inter*.
16. Explain — *provinciam domi retinere*, *ala*, *una cohors togata*, *septuma decuma cohors*, *praefectus legionis*, *vacationes*, *sectiones*.
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GREEK.—PART I. (UNPREPARED
TRANSLATION.)

The Board of Examiners.

Translate, with brief notes in the margin where you think them desirable—

1. Κριε̄ πέπον, τί μοι ὤδε διὰ σπέος ἔσσυο μήλων ὕστατος; οὔτι πάρος γε λελειμμένος ἔρχεται οἰῶν, ἀλλὰ πολὺ πρῶτος νέμειαι τέρεν' ἀνθεα ποίης μακρὰ βιβίαι, πρῶτος δὲ ῥοῶς ποταμῶν ἀφικάνεις, πρῶτος δὲ σταθμόνδε λιλαίειαι ἀπονέεσθαι ἑσπέριος· νῦν αὐτε πανύστατος. ἦ σύγ' ἀνακτος ὀφθαλμὸν ποθέεις, τὸν ἀνὴρ κακὸς ἐξαλάωσεν σὺν λυγροῖς ἐτάροισι, δαμασσάμενος φρένας οἴνω, Οὔτις, ὃν οὔπω φημι πεφυγμένον εἶναι ὄλεθρον. εἰ δὴ ὁμοφρονέοις ποτιφωνήεις τε γένοιο εἰπεῖν ὄππῃ κείνος ἐμὸν μένος ἤλασκάζει· τῷ κέ οἱ ἐγκέφαλός γε διὰ σπέος ἄλλυδις ἄλλη θεινομένου ῥαίοιτο πρὸς οὔδει, κὰδ δέ κ' ἐμὸν κῆρ λωφήσειε κακῶν, τὰ μοι οὔτιδανὸς πόρεν Οὔτις.

2. Μακάριόν ἐστιν ἡ τραγῳδία ποίημα κατὰ πάντ', εἰ γε πρῶτον οἱ λόγοι ὑπὸ τῶν θεατῶν εἰσιν ἐγνωρισμένοι, πρὶν καὶ τιν' εἰπεῖν· ὥσθ' ὑπομνήσαι μόνον δεῖ τὸν ποιητὴν· Οἰδίπουν γὰρ ἂν μόνον φῶ, τἄλλα πάντ' ἴσασιν· ὁ πατὴρ Λαίος, μήτηρ Ἰοκάστη, θυγατέρες, παῖδες τίνες, τί πείσεθ' οὔτος, τί πεποίηκεν. ἂν πάλιν εἴπῃ τις Ἀλκμέωνα, καὶ τὰ παιδία πάντ' εὐθύς εἶρηχ', ὅτι μανεῖς ἀπέκτονε τὴν μητέρ', ἀγανακτῶν δ' Ἄδραστος εὐθέως ἤξει πάλιν τ' ἄπεισι. . . .

ἔπειθ' ὅταν μηδὲν δύνωντ' εἰπεῖν ἔτι,
 κομιδῆ δ' ἀπειρήκωσιν ἐν τοῖς δράμασιν,
 αἴρουσιν ὥσπερ δάκτυλον τὴν μηχανήν,
 καὶ τοῖς θεωμένοισιν ἀποχρώντως ἔχει.
 ἡμῖν δὲ ταῦτ' οὐκ ἔστιν, ἀλλὰ πάντα δεῖ
 εὐρεῖν, ὀνόματα καινά, τὰ διωκημένα
 πρότερον, τὰ νῦν παρόντα, τὴν καταστροφὴν,
 τὴν εἰσβολήν. ἂν ἔν τι τούτων παραλίπη
 Χρέμης τις ἢ Φεῖδων τις, ἔκσυρίττεται·
 Πηλεῖ δὲ ταῦτ' ἔξεστι καὶ Τεύκρῳ ποιεῖν.

3. Παραλαβόντες δὲ αὐτοὺς οἱ Κερκυραῖοι ἐς οἴκημα μέγα κατεῖραν, καὶ ὕστερον ἐξάγοντες κατὰ εἴκοσιν ἄνδρας διῆγον διὰ δυοῖν στοίχοις ὀπλιτῶν ἐκατέρωθεν παρατεταγμένων, δεδεμένους τε πρὸς ἀλλήλους καὶ παισμένους καὶ κεντούμενους ὑπὸ τῶν πιρατεταγμένων, εἴ ποῦ τις τινα ἄδοι ἐχθρὸν ἑαυτοῦ· μαστιγοφόροι τε παρόντες ἐπεγάχονον τῆς ὁδοῦ τοὺς σχολαίτερον προΐοντας. Καὶ ἐς μὲν ἄνδρας ἐξήκοντα ἔλαβον τοὺς ἐν τῷ οἰκήματι τούτῳ τῷ τρόπῳ ἐξαγαγόντες καὶ διαφθείραντες (ᾗοντο γὰρ αὐτοὺς μεταστήσοντάς ποι ἄλλοσε ἄγειν)· ὡς δὲ ᾗσθητο καὶ τις αὐτοῖς ἐδήλωσε, τοὺς τε Ἀθηναίους ἐπεκαλοῦντο καὶ ἐκέλευον σφᾶς, εἰ βούλονται, αὐτοὺς διαφθεῖρειν, ἕκ τε τοῦ οἰκήματος οὐκέτι ἠθελον ἐξιέναι, οὐδ' ἐστένα ἔφασαν κατὰ δύναμιν περιόψεσθαι οὐδένα. οἱ δὲ Κερκυραῖοι κα' ἂ μὲν τὰς θύρας οὐδ' αὐτοὶ διεροῦντο βιάζεσθαι, ἀναβάντες δὲ ἐπὶ τὸ τέγος τοῦ οἰκήματος καὶ διελόντες τὴν ὄροφὴν ἔβαλλον τῷ κεράμῳ καὶ ἐτόξεον κάτω. οἱ δὲ ἐφυλάσσοντό τε ὡς ἐδύναντο καὶ ἅμα οἱ πολλοὶ σφᾶς αὐτοὺς διέφθειρον, οἰστούς τε, οὓς ἀφίεσαν ἐκεῖνοι, ἐς τὰς σφαγὰς καθιέντες καὶ [ἐκ] κλιῶν τιῶν, αἷ ἔτυχον αὐτοῖς ἐνοῦσαι, τοῖς σπάρτοις καὶ ἐκ τῶν ἱματίων παραιρήματα ποιούντες ἀπαγχόμενοι, παντὶ [τε] τρόπῳ τὸ πολὺ τῆς νυκτός (ἐπεγένετο γὰρ νύξ τῷ παθήματι) ἀναλοῦντες

σφᾶς αὐτοὺς καὶ βαλλόμενοι ὑπὸ τῶν ἄνω διεφθάρησαν. καὶ αὐτοὺς οἱ Κερκυραῖοι, ἐπειδὴ ἡμέρα ἐγένετο, φορμηθὸν ἐπὶ ἀμάξας ἐπιβαλόντες ἀπήγαγον ἔξω τῆς πόλεως.

4. Ἀμέλει ἢ δεισιδαιμονία δόξειεν ἂν εἶναι δειλία πρὸς τὸ δαιμόνιον· ὁ δὲ δεισιδαίμων τοιοῦτός τις, οἷος ἐπὶ κρήνη ἀπονιψάμενος τὰς χεῖρας καὶ περιρρανάμενος ἀπὸ ἱεροῦ, δάφνην εἰς τὸ στόμα λαβών, οὕτω τὴν ἡμέραν περιπατεῖν. Καὶ τὴν ὁδὸν ἔαν παραδράμῃ γαλῆ, μὴ πρότερον πορευθῆναι, ἕως διεξέλθῃ τις, ἢ λίθους τρεῖς ὑπὲρ τῆς ὁδοῦ διαβάλλῃ. Καὶ τῶν λιπαρῶν λίθων τῶν ἐν ταῖς τριόδοις παριῶν ἐκ τῆς ληκύθου ἔλαιον καταχεῖν, καὶ ἐπὶ γόνατα πεσῶν καὶ προσκυνήσας ἀπαλλάττεσθαι. Καὶ ἔαν μῦς θύλακον ἀλφίτων διαφάγῃ, πρὸς τὸν ἐξηγητὴν ἐλθὼν, ἐρωτᾷν, τί χρὴ ποιεῖν· καὶ ἔαν ἀποκρίνηται αὐτῷ, ἐκδοῦναι τῷ σκυτοδέψῃ ἐπιρράψαι, μὴ προσέχειν τούτοις, ἀλλ' ἀποτραπείς ἐκθύσασθαι. Καὶ πυκνὰ δὲ τὴν οἰκίαν καθᾶραι δεινός, Ἐκάτης φάσκων ἐπαγωγὴν γεγονέναι· κἂν γλαυῆ βαδίζοντος αὐτοῦ ταραττηται, εἶπας, Ἄθηνᾶ κρείττων! παρελθεῖν οὕτω· καὶ οὔτε μνήματι ἐπιβῆναι, οὔτε ἐπὶ νεκρὸν ἐλθεῖν, ἀλλὰ τὸ μὴ μαινεσθαι συμφέρον αὐτῷ φῆσαι εἶναι. Καὶ ὅταν ἐνύπνιον ἴδῃ, πορεύεσθαι πρὸς τοὺς ὄνειροκρίτας, πρὸς τοὺς μάντις, πρὸς τοὺς ὄρνιθοσκοποὺς, ἐρωτήσων τίνι θεῷ ἢ θεᾷ εὐχεσθαι δεῖ.

LATIN.—PART I. (UNPREPARED
TRANSLATION.)

The Board of Examiners.

1. Translate, with concise notes in the margin where you think them desirable—

(a) BA. Forum coquinum qui uocant, stulte uocant:

Nam non coquinum, uerum furinumst forum.

Nam ego si iuratus hominem nequam quaererem,

Peiorem hau potui quam hunc quem duco ducere,

Multilocum gloriosum insulsum inutilem.

Quin ob eam rem Orcus recipere ad se hunc noluit,

Vt esset hic qui mortuis cenam coquat :

Nam hic solus illis coquere quod placeat potest.

Co. Si me arbitrabare istoc pacto ut praedicas,

Quor conducebas? BA. Inopia: alius non erat.

Set quor sedebas in foro, si eras coquos,

Tu solus praeter alios? Co. Ego dicam tibi:

Hominum ego auaritia factus sum improbior coquos,

Non meopte ingenio. BA. Qua istuc ratione?

Co. Eloquar.

Quia enim, quom extemplo ueniunt conduc-tum coquom,

Nemo illum quaerit qui optumus, carissumust :

Illum conducunt potius qui uilissumust.

Hoc ego fui hodie solus opsessor fori.

Illi sunt drachumis miseri : me nemo potest

Minoris quisquam nummo ut surgam subigere.

(b) *Ite, leves elegi, doctas ad consulis aures,
 verbaque honorato ferte legenda viro.
 luce minus decima dominam venietis in urbem,
 ut festinatum non faciatis iter.
 si quis, ut in populo, qui sitis et unde requiret,
 nomina decepta quaelibet aure ferat.
 ut sit enim tutum, sicut reor esse, fateri,
 verba minus certe ficta timoris habent.
 copia nec vobis ullo prohibente videndi
 consulis, ut limen contigeritis, erit.
 aut reget ille suos, dicendo iura, Quirites,
 conspicuum signis quom premet altus ebur ;
 aut populi reditus positam componet ad
 hastam,
 et minui magnae non sinet urbis opes;
 aut feret Augusto solitam natoque salutem,
 deque parum noto consulet officio.*

(c) Dionysius, de quo ante dixi, cum fanum Proserpinae Locris expilavisset, navigabat Syracusas: isque cum secundissimo vento cursum teneret ridens: Videtisne, inquit, amici, quam bona a dis immortalibus navigatio sacrilegis detur? Idque homo acutus cum bene planeque percepisset, in eadem sententia perseverabat: qui cum ad Peloponnesum classem appulisset et in fanum venisset Iovis Olympii, aureum ei detrahit amiculum grandi pondere, quo Iovem ornat e manubiis Karthaginensium tyrannus Gelo, atque in eo etiam cavillatus est aestate grave esse aureum amiculum, hieme frigidum, eique laneum pallium iniecit, cum id esse [aptum] ad omne anni tempus diceret. Idemque Aesculapii Epidauri barbam auream demiussit: neque enim convenire barbatum esse filium, cum in omnibus fanis pater imberbis

esset. Idem mensas argenteas de omnibus delubris iussit auferri, in quibus quod more veteris Graeciae inscriptum esset BONORUM DEORUM, uti se eorum bonitate velle dicebat. Idem Victoriolas aureas et pateras et coronas, quae simulacrorum porrectis manibus sustinebantur, sine dubitatione tollebat eaque se accipere, non auferre dicebat: esse enim stultitiam, a quibus bona precaremur, ab iis porrigentibus et dantibus nolle sumere.

- (d) Servus ei dicitur comes unus fuisse nutritus una, eoque haud ignarus linguae eiusdem; nec quicquam aliud proficiscentes quam summatim regionis, quae intranda erat, naturam ac nomina principum in populis acceperere, ne qua inter colloquia insigni nota haesitantes deprehendi possent. Iere pastorali habitu, agrestibus telis, falcibus gaesisque binis armati. Sed neque commercium linguae, nec vestis armorumve habitus sic eos texit, quam quod abhorrebat a fide, quemquam externum Ciminios saltus intraturum. Usque ad Camertes Umbros penetrasse dicuntur: ibi, qui essent, fateri Romanum ausum: introductumque in senatam, consulis verbis egisse de societate amicitiaque: atque inde comi hospitio acceptum, nuntiare Romanis iussum, commeatum exercitui dierum triginta praesto fore, si ea loca intrasset, iuventutemque Camertium Umbrorum in armis paratam imperio futuram.
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GREEK.—PART II. (UNPREPARED
TRANSLATION).

The Board of Examiners.

Translate, with brief notes in the margin where you think them desirable—

1. Εὐρύμαχ', εἰ γὰρ νῶν ἕρις ἔργοιο γένοιτο
ὥρη ἐν εἰαρινῇ, ὅτε τ' ἤματα μακρὰ πέλονται,
ἐν ποίῃ, δρέπανον μὲν ἐγὼν εὐκαμπὲς ἔχοιμι,
καὶ δὲ σὺ τοῖον ἔχῃς, ἵνα πειρησαίμεθα ἔργου
νήστιες ἄχρι μάλα κνέφαος, ποίῃ δὲ παρείῃ.
εἰ δ' αὖ καὶ βόες εἶεν ἐλαυνόμεν, οἵπερ ἄριστοι,
αἰθῶνες, μεγάλοι, ἄμφω κεκορηότε ποιῆς,
ἤλακες, ἰσοφόροι, τῶν τε σθένος οὐκ ἀλαπαδίνω,
τετράγυον δ' εἶη, εἴκοι δ' ὑπὸ βῶλος ἀρότρη·
τῷ κέ μ' ἴδοις, εἰ ἄλκα δεηκεῖα προταμοίμην.
εἰ δ' αὖ καὶ πόλεμόν ποθεν ὀρήσειε Κρονίων
σήμερον, αὐτὰρ ἐμοὶ σάκος εἶη καὶ δύο δούρε
καὶ κυνὴ πάγχαλκος, ἐπὶ κροτάφοις ἀραρυῖα,
τῷ κέ μ' ἴδοις πρώτοισιν ἐνὶ προμάχοισι μιγέντα,
οὐδ' ἂν μοι τὴν γαστέρ' ὄνειδίζων ἀγορεύῃς·
ἀλλὰ μάλ' ἑβρίζεις, καὶ τοι νόος ἐστὶν ἀπηνής·
καὶ πού τις δοκέεις μέγας ἔμμεναι ἠδὲ κραταίος,
οὐνεκα πὰρ παύροισι καὶ οὐτιδανοῖσιν ὀμιλεῖς.
2. ΣΩ. ἄλλο τι δῆτ' οὐ νομεῖς ἤδη θεὸν οὐδὲν κλην ἄπερ
ἡμεῖς,
τὸ χάος τουτὶ καὶ τὰς νεφέλας καὶ τὴν γλῶτταν,
τρία ταυτί;
ΣΤ. οὐδ' ἂν διαλεχθείην γ' ἀτεχνῶς τοῖς ἄλλοις, οὐδ'
ἂν ἀπαντῶν·
οὐδ' ἂν θύσαιμ', οὐδὲ σπέσαιμ', οὐδ' ἐπιθείην
λιβανωτόν.

- ΧΟ. λέγε νυν ἡμῖν ὃ τι σοι δρῶμεν θαρρῶν, ὡς οὐκ ἀτυχήσεις,
ἡμᾶς τιμῶν καὶ θαυμάζων καὶ ζητῶν δεξιὸς εἶναι.
- ΣΤ. ὃ δέσποιναι, δέομαι τοίνυν ὑμῶν τουτὶ πάννυ
μικρόν,
τῶν Ἑλλήνων εἶναι με λέγειν ἑκατὸν σταδίοισιν
ἄριστον.
- ΧΟ. ἀλλ' ἔσται σοι τοῦτο παρ' ἡμῶν ὥστε τὸ λοιπὸν
γ' ἀπὸ τουδὶ
ἐν τῷ δῆμῳ γνώμας οὐδεὶς νικήσει πλείονας ἢ σύ.
- ΣΤ. μὴ μοί γε λέγειν γνώμας μεγάλας· οὐ γὰρ
τούτων ἐπιθυμῶ,
ἀλλ' ὅσ' ἐμαντῷ στρεψοδικῆσαι καὶ τοὺς χρήστας
διολισθεῖν.
- ΧΟ. τεύξει τοίνυν ὧν ἰμείρεις· οὐ γὰρ μεγάλων
ἐπιθυμεῖς.
ἀλλὰ σεαντὸν πιράδος θαρρῶν τοῖς ἡμετέροις
προπόλοισιν.
- ΣΤ. δράσω ταῦθ' ὑμῖν πιστεύσας· ἡ γὰρ ἀνάγκη με
πιέζει
διὰ τοὺς ἵππους τοὺς κοπκατίας καὶ τὸν γάμον ὃς
μ' ἐπέτριψεν.

3. τοῦτο μὲν δὴ οὕτω ἐξευρέθη, τὰς δὲ προσβολὰς ἀπεκ-
ρούοντο οἱ Βαρκαῖοι. χρόνον δὲ δὴ πολλὸν
τριβομένων καὶ πιπτόντων ἀμφοτέρων πολλῶν, καὶ
οὐκ ἔσσαν τῶν Περσέων, Ἄμασις ὁ στρατηγὸς τοῦ
πεζοῦ μηχανᾶται τοιάδε· μαθὼν τοὺς Βαρκαίους,
ὡς κατὰ μὲν τὸ ἰσχυρὸν οὐκ αἰρετοὶ εἶεν, δόλῳ δὲ
αἰρετοί, ποιέει τοιάδε· νυκτὸς τάφρον ὀρύξας εὐρέαν
ἐπέτεινε ξύλα ἀσθενέα ὑπὲρ αὐτῆς, κατύπερθε δὲ
ἐπιπολῆς τῶν ξύλων χουῖν γῆς ἐπεφύρησε, ποιέων τῇ
ἄλλῃ γῇ ἰσόπεδον. ἅμα ἡμέρῃ δὲ ἐς λόγους προε-
καλέετο τοὺς Βαρκαίους. οἱ δὲ ἀσπαστῶς ὑπήκουσαν,
ἐς ὃ σφι ἔαδε ὁμολογίῃ χρήσασθαι. τὴν δὲ ὁμολογίην
ἐποιεῦντο τοιήνδε τινά, ἐπὶ τῆς κρυπτῆς τάφρον

τάμνοντες ὄρκια, ἔστ' ἂν ἡ γῆ αὕτη οὕτω ἔχη, μένειν τὸ ὄρκιον κατὰ χώραν, καὶ Βαρκαίους τε ὑποτελείειν φάναι Ἀξίην βασιλεί καὶ Πέρσας μηδὲν ἄλλο νεοχμοῦν κατὰ Βαρκαίους. μετὰ δὲ τὸ ὄρκιον Βαρκαῖοι μὲν πιστεύσαντες τούτοισι αὐτοὶ τε ἐξήρισαν ἐκ τοῦ ἄστεος καὶ τῶν πολεμίων ἔων παριέναι ἐς τὸ τεῖχος τὸν βουλόμενον, τὰς πύλας πάσας ἀνοίξαντες. οἱ δὲ Πέρσαι καταρρήξαντες τὴν κρυπτήν γέφυραν ἔθειον ἔσω ἐς τὸ τεῖχος. κατέρρηξαν δὲ τοῦδε εἵνεκεν τὴν ἐποίησαν γέφυραν, ἵνα ἐμπεδορκέοιεν, ταμόντες τοῖσι Βαρκαίοισι χρόνον μένειν αἰεὶ τὸ ὄρκιον, ὅσον ἂν ἡ γῆ μένη κατὰ τότε εἶχε· καταρρήξασι δὲ οὐκέτι ἔμενε τὸ ὄρκιον κατὰ χώραν.

4. Καὶ ὅσα μὲν λόγῳ εἶπον ἕκαστοι ἢ μέλλοντες πολεμήσειν ἢ ἐν αὐτῷ ἤδη ὄντες, χαλεπὸν τὴν ἀκρίβειαν αὐτῆν τῶν λεχθέντων διαμνημονεῦσαι ἦν ἐμοὶ τε ὧν αὐτὸς ἤκουσα καὶ τοῖς ἄλλοθὲν ποθεν ἐμοὶ ἀπαγγέλλουσιν· ὡς δ' ἂν ἐδόκουν ἐμοὶ ἕκαστοι περὶ τῶν αἰεὶ παρόντων τὰ δέοντα μάλιστ' εἰπεῖν, ἐχομένῳ ὅτι ἐγγύτατα τῆς ξυμπάσης γνώμης τῶν ἀληθῶς λεχθέντων, οὕτως εἴρηται. τὰ δ' ἔργα τῶν πραχθέντων ἐν τῷ πολέμῳ οὐκ ἐκ τοῦ παρατυχόντος πυνθανόμενος ἠξίωσα γράφειν οὐδ' ὡς ἐμοὶ ἐδόκει, ἀλλ' οἷς τε αὐτὸς παρῆν καὶ παρὰ τῶν ἄλλων ὅσον δυνατὸν ἀκριβείᾳ περὶ ἐκάστου ἐπεξελεθῶν. ἐπιπόνως δὲ ἠύρισκετο, διότι οἱ παρόντες τοῖς ἔργοις ἐκάστοις οὐ ταῦτ' ἀπερὶ τῶν αὐτῶν ἔλεγον, ἀλλ' ὡς ἐκατέρων τις εὐνοίας ἢ μνήμης ἔχοι. καὶ ἐς μὲν ἀκρόασιν ἴσως τὸ μὴ μυθῶδες αὐτῶν ἀτερπέστερον φανεῖται· ὅσοι δὲ βουλήσονται τῶν τε γενομένων τὸ σαφὲς σκοπεῖν καὶ τῶν μελλόντων ποτὲ αὖθις κατὰ τὸ ἀνθρώπειον τοιούτων καὶ παραπλησίων ἔσεσθαι, ὠφέλιμα κρίνειν αὐτὰ ἀρκούντως ἔξει. κτῆμά τε ἐς αἰεὶ μᾶλλον ἢ ἀγώνισμα ἐς τὸ παραχρῆμα ἀκούειν ζύγκεται.

LATIN.—PART II. (UNPREPARED
TRANSLATION.)

The Board of Examiners.

Translate, with concise notes in the margin where you think them desirable—

- (a) Principio caelum ac terram camposque liquentes
Lucentemque globum lunae Titaniaque astra
Spiritus intus alit, totamque infusa per artus
Mens agitat molem et magno se corpore miscet.
Inde hominum pecudumque genus vitaeque
volantum
Et quae marmoreo fert monstra sub aequore
pontus.
Igneus est ollis vigor et caelestis origo
Seminibus, quantum non corpora noxia tardant
Terrenique hebetant artus moribundaque
membra.
Hinc metuunt cupiuntque, dolent gaudentque,
neque auras
Dispiciunt clausae tenebris et carcere caeco.
Quin et supremo cum lumine vita relinquit,
Non tamen omne malum miseris nec funditus
omnes
Corporeae excedunt pestes, penitusque necesse
est
Multa diu concreta modis inolescere miris.
- (b) Quandocumque igitur nostros mors claudet
ocellos,
Accipe quae serves funeris acta mei.
Nec mea tunc longa spatietur imagine pompa,
Nec tuba sit fati vana querella mei,
Nec mihi tunc fulcro sternatur lectus aburno,
Nec sit in Attalico mors mea nixa toro.

Desit odoriferis ordo mihi lancibus, adsint
 Plebei parvae funeris exequiae.
 Sat mea sat magnast, si tres sint pompa libelli,
 Quos ego Persephonae maxima dona feram.
 Tu vero nudum pectus lacerata sequeris,
 Nec fueris nomen lassa vocare meum,
 Osculaque in gelidis pones suprema labellis,
 Cum dabitur Syrio munere plenus onyx.
 Deinde, ubi suppositus cinerem me fecerit
 ardor,
 Accipiat Manes parvula testa meos,
 Et sit in exiguo laurus super addita busto,
 Quae tegat extincti funeris umbra locum,
 Et duo sint versus, 'qui nunc iacet horrida
 pulvis,
 Vnius hic quondam servus amoris erat.'

- (c) Illa vero deridenda arrogantia est, in minoribus navigiis rudem esse se confiteri, quinqueremes, aut etiam maiores, gubernare didicisse. Tu mihi, cum in circulo decipiari adversarii stipulatiuncula, et cum obsignes tabellas clientis tui, quibus in tabellis id sit scriptum quo ille capiatur, ego tibi ullam causam maiorem committendam putem? Citius hercule is qui duorum scalmorum naviculam in portu everterit in Euxino ponto Argonautarum navem gubernarit. Quid? si ne parvae quidem causae sunt, sed saepe maximae, in quibus certatur de iure civili, quod tandem os est illius patroni qui ad eas causas sine ulla scientia iuris audet accedere? Quae potuit igitur esse causa maior quam illius militis, de cuius morte cum domum falsus ab exercitu nuntius venisset, et pater eius, re credita, testamentum mutasset, et quem ei visum esset fecisset heredem, essetque ipse mortuus? Res delata est ad

centumviros, cum miles domum revenisset, egissetque lege in hereditatem paternam. Nempe in ea causa quaesitum est de iure civili, possetne paternorum bonorum exheres esse filius, quem pater testamento neque heredem neque exheredem scripsisset nominatim.

- (d) Nox per diversa inquires, cum barbari festis epulis, laeto cantu aut truci sonore subiecta vallium ac resultantis saltus complerent, apud Romanos invalidi ignes, interruptae voces, atque ipsi passim adiacerent vallo, oberrarent tentoriis, insomnes magis quam pervigiles. ducemque terruit dira quies: nam Quintilium Varum sanguine oblitum et paludibus emersum cernere et audire visus est velut vocantem, non tamen obsecutus et manum intendentis reppulisse. coepta luce missae in latera legiones, metu an contumacia, locum deseruere, capto propere campo umentia ultra. neque tamen Arminius quamquam libero incursu statim prorupit: sed ut haesere caeno fossisque impedimenta, turbati circum milites, incertus signorum ordo, utque tali in tempore sibi quisque properus et lentae adversum imperia aures, inrumpere Germanos iubet, clamitans 'en Varus eodemque iterum fato vinctae legiones!' simul haec et cum delectis scindit agmen equisque maxime vulnera ingerit. illi sanguine suo et lubrico paludum lapsantes excussis rectoribus disicere obvios, proterere iacentes. plurimus circa aquilas labor, quae neque ferri adversum ingruentia tela neque figi limosa humo poterant.

GREEK.—PART I. (COMPOSITION.)

The Board of Examiners.

1. Translate into Greek Iambics—

A league from Epidamnum had we sail'd,
Before the always wind-obeying deep
Gave any tragic instance of our harm :
But longer did we not retain much hope ;
For what obscured light the heavens did grant
Did but convey unto our fearful minds
A doubtful warrant of immediate death ;
Which though myself would gladly have embraced,
Yet the incessant weepings of my wife,
Weeping before for what she saw must come,
And piteous plainings of the pretty babes—
That mourned for fashion, ignorant what to fear—
Forced me to seek delays for them and me.

2. Translate into Greek Prose—

The king assembled both a great fleet and a great army ; and, entering the frontiers of Scotland, appeared with a force which the enemy could not think of resisting in the open field. The English navy, which sailed along the coast, secured the army from any danger of famine ; Edward's vigilance preserved it from surprises ; and by this prudent disposition they marched from one end of the kingdom to the other, ravaging the open country, reducing all the castles, and receiving the submissions of all the nobility, even those of the regent. Wallace, though he hung upon the English army in their march, found but few opportunities of signaling

that valour which had formerly made him so terrible to his enemies. At last that hardy warrior, who was determined, amidst the universal slavery of his countrymen, still to maintain his independence, was betrayed into Edward's hands by Sir John Monteith, his friend, whom he had acquainted with the place of his concealment.

LATIN.—PART I. (COMPOSITION.)

The Board of Examiners.

1. Translate into Latin Elegiacs—

She was a lady great and splendid,
 I was a minstrel in her halls.
 A warrior like a prince attended
 Stayed his steed by the castle walls.

Far had he fared to gaze upon her.
 "O rest thee now, Sir Knight," she said.
 The warrior wooed, the warrior won her,
 In time of snowdrops they were wed.
 I made sweet music in his honour,
 And longed to strike him dead.

2. Translate into Latin Prose—

Young Edward received the captive king with all the marks of regard and sympathy; administered comfort to him amidst his misfortunes; paid him the tribute of praise due to his valour; and ascribed his own victory merely to the

blind chance of war, or to a superior providence which controls all the efforts of human force and prudence. The behaviour of John showed him not unworthy of this courteous treatment ; his present abject fortune never made him forget a moment that he was a king. More touched by Edward's generosity than by his own calamities, he confessed that, notwithstanding his defeat and captivity, his honour was still unimpaired ; and that, if he yielded the victory, it was at least gained by a prince of consummate valour and humanity. Edward ordered a repast to be prepared in his tent for the prisoner, and he himself served at the royal captive's table, as if he had been one of his retinue. He stood at the king's back during the meal, constantly refused to take a place at table, and declared that, being a subject, he was too well acquainted with the distance between his own rank and that of his majesty to assume such a freedom.

GREEK.—PART II. (COMPOSITION.)

The Board of Examiners.

1. Translate into Greek Iambics—

A league from Epidamnum had we sail'd
 Before the always wind-obeying deep
 Gave any tragic instance of our harm :
 But longer did we not retain much hope ;
 For what obscured light the heavens did grant
 Did but convey unto our fearful minds
 A doubtful warrant of immediate death ;
 Which though myself would gladly have embraced,
 Yet the incessant weepings of my wife,
 Weeping before for what she saw must come,
 And piteous plainings of the pretty babes—
 That mourned for fashion, ignorant what to fear—
 Forced me to seek delays for them and me.

2. Translate into Greek prose—

The Lacedæmonians, we hear, have occupied not only all Attica, but are about to enter, if they have not entered already, the territory of their confederates the Thebans, and to join their forces. Whither will you go, my Aspasia ? Thessaly is almost as perilous as Bœotia. It is worse than criminal to be so nearly allied to the greatest man on earth, who must always have the greatest enemies. There are more who will forgive injury than there are who will forgive station : and those who assail in vain the power of Pericles, will exert their abilities in diminishing his equanimity and happiness. I fear your fondness will have induced you again to enter the city, that you may assuage and

divide those cares which must weigh heavily on his wisdom and patriotism; and the more, since his health has been undermined by the pestilence. I dare not advise you to forego a duty: but remember he has commanded you to remain away. Your return would afflict him. I am quite incapable of judging for you. Were I with you, then perhaps I might know many things which should influence your decision.

LATIN.—PART II. (COMPOSITION.)

The Board of Examiners.

1. Translate into Latin Elegiacs—

She was a lady great and splendid,
 I was a minstrel in her halls.
 A warrior like a prince attended
 Stayed his steed by the castle walls.

Far had he fared to gaze upon her.
 "O rest thee now, Sir Knight" she said.
 The warrior wooed, the warrior won her,
 In time of snowdrops they were wed.
 I made sweet music in his honour,
 And longed to strike him dead.

2. Translate into Latin Prose—

Pericles, I was much edified by your letter; but, pardon me, when I came to the close of it I thought you rather mad.

"What!" said I, "beard this panther!"

Q

However, when I had considered a little more and a little better on it, I went to him and delivered your love. He stared at me, and then desired to see the direction. "Ay," said he, "I remember the handwriting. He oftener writes to me than I to him. I suppose he has less to do and less to think of."

The few other words he added are hardly worth the trouble of repetition: in fact, they were not very filial. Dear Pericles! I would love him, were it only out of perversity. But, beside all other rights over me, you have made me more disposed than ever to obey you, in making me more contented with myself, as you have by this commission. I may do something yet, if we can but fumigate or pray away the plague. Of two thousand four hundred soldiers, who landed but forty days before me from the Bosphorus, under the command of Agnou, son of Nikias, one thousand and fifty are already dead. I shall have nobody to persuade or manage, or even to fight with, if we go on so.

GERMAN.—PART I.

SECOND PAPER.

The Board of Examiners

1. Translate, with brief marginal notes where necessary—

(a) Gleich einer schwarzen Mauer ragte der Wald vor ihm empor, und der Mondenglanz ruhte darauf wie frisch gefallener Schnee. Er fand den Platz, an dem vor Jahren die Hängematte gehangen, in gespenstigem Dämmerchein schimmerte die Lichtung durch das schwarze Gezweig. Weiter und weiter zog's ihn. Wie ein Palast aus flimmerndem Marmor stieg das "weisse Haus" mit seinem Erker und seinen Giebeln vor seinem Blicke empor. Tiefes Schweigen lag auf dem Gutshof, nur hin und wieder schlug ein Hund an, um sofort zu verstummen.

Er stand vor dem Gittertor, ohne zu wissen, wie er hingekommen. Er faszte die Stäbe mit beiden Händen und guckte ins Innere. In Mondenglanz gebadet lag der weite Hofplatz vor ihm da; in schwarzen Konturen hoben sich die Wirtschaftswagen ab, die in Reih und Glied vor den Ställen standen; eine weisse Katze schlich am Gartenzaun vorbei; sonst lag alles im Schlaf.

Längs dem Zaune ging er weiter. In dem Aschenhaufen hinter der Schmiede lag ein Häuflein glimmender Kohlen, die wie brennende Augen aus dem Dunkel guckten. Jetzt begann der Garten. Hochstämmige Linden neigten ihre Zweige über ihn, und ein Duft von Goldregen und frühen Rosen wogte durch die Gitterstäbe betäubend über ihn her. Durch das

Gezweig hindurch erglänzten wie silberne Bänder die kiesbestreuten Pfade, und die Sonnenuhr, welche der Traum seiner Kindheit gewesen, ragte düster dahinter empor.

- (b) Mit unheimlicher Klarheit stand die wilde Brandnacht vor seinen Augen, und inmitten der Angst, vor fremden Menschen zu stehn und zu sprechen, überkam es ihn wie ein Gefühl des Glücks, wenn er dessen gedachte, wie er in Qualm und Flammen hoch auf dem steilen Dache gestandem, handelnd und herrschend als der einzige, dem alle gehorchten, der einzige, der inmitten der Wirrnis bei klarem Kopf geblieben. "Vielleicht kann ich doch meinen Mann stehn, wenn's darauf ankommt!" sagte er sich tröstend, aber um so tiefer versank er darauf im Anschau seiner trübseligen, gedrückten, kraft und saftlosen Existenz. "Es wird nie anders, es kann nur schlimmer werden von Jahr zu Jahr" sagte er, da hörte er hinter sich die Mutter seufzen, und was er soeben gedacht, erschien ihm als schnöde, herzlose, Selbstsucht.

Im nächsten Augenblicke stand er in dem hohen, menschengefüllten Rounge vor einem erhöhten Tische, an welchem etliche Männer mit strengen ernsten Gesichtern saszen; nur einer, der ein wenig abseits Platz genommen hatte, lächelte immer. Das war der Staatsanwalt, vor dem alle Welt sich fürchtete. Auf der rechten Seite des Saales saz gleichfalls auf erhöhten Plätzen ein Häuflein würdiger Bürger, die sehr gelangweilt dreinschauten und sich mit Federmessern, Papierschnitzeln u.s.w. die Zeit zu vertreiben suchten. Das waren die Geschworenen. Auf der linken Seite saz in einer verschlossenen Bank der Angeklagte.

2. Translate, locate, and comment upon the following passages :—

- (a) Ich freue mich, wenn kluge Männer sprechen,
 Dass ich verstehen kann, wie sie es meinen.
 Es sei ein Urteil über einen Mann
 Der alten Zeit und seiner Taten Wert ;
 Es sei von einer Wissenschaft die Rede,
 Die, durch Erfahrung weiter ausgebreitet,
 Dem Menschen nutzt, indem sie ihn erhebt ;
 Wohin sich das Gespräch der Edlen lenkt,
 Ich folge gern, denn mir wird leicht zu folgen.
 Ich höre gern dem Streit der Klugen zu,
 Wenn um die Kräfte, die des Menschen Brust
 So freundlich und so fürchterlich bewegen,
 Mit Grazie die Rednerlippe spielt ;
 Gern, wenn die fürstliche Begier des Ruhms,
 Des ausgebreiteten Besitzes Stoff
 Dem Danker wird, und wenn die feine Klugheit,
 Von einem klugen Manne zart entwickelt,
 Statt uns zu hintergehen, uns belehrt.
- (b) O glaube mir, ein selbstisches Gemüt
 Kann nicht der Qual des engen Neids entfliehen.
 Ein solcher Mann verzeiht dem andern wohl
 Vermögen, Stand und Ehre ; denn er denkt,
 Das hast du selbst, das hast du, wenn du willst,
 Wenn du beharrst, wenn dich das Glück
 begünstigt.
 Doch das, was die Natur allein verleiht,
 Was jeglicher Bemühung, jedem Streben
 Stets unerreichbar bleibt, was weder Gold,
 Noch Schwert, noch Klugheit, noch Beharr-
 lichkeit
 Erzwingen kann, das wird er nie verzeihn.
- (c) Die wahre Freundschaft zeigt sich in Versagen
 Zur rechten Zeit, und es gewährt die Liebe

Gar oft ein schädlich Gut, wenn sie den Willen
 Des Fordernden mehr als sein Glück bedenkt.
 Du scheinst mir in diesem Augenblick
 Für gut zu halten, was du eifrig wünschest,
 Und willst im Augenblick, was du begehrt.
 Durch Heftigkeit ersetzt der Irrende.
 Was ihm an Wahrheit und an Kräften fehlt.

- (d) Zeigen Sie, auf Deutsch, in wie weit die Verhältnisse, Personen und das Problem von Goethe's "Tasso" denen entsprechen, die Goethe am Hofe zu Weimar fand.
3. Give a survey of Lessing's work as the greatest German representative of the "Aufklärung," with a more detailed reference to his "Laokoon" and the "Hamburgische Dramaturgie."

GERMAN.—PART I.

THIRD PAPER.

The Board of Examiners.

1. Translate, locate, and annotate—
- (a) Breiter wallet nun der Strom
 Mit vermehrten Wellen.
 Leben jetzt im hohen Ton
 Redliche Gesellen,
 Die sich mit gedrängter Kraft
 Brav zusammenstellen
 In des Glückes Sonnenschein
 Und in schlimmen Fällen.

Wie wir nun zusammen sind,
Sind zusammen Viele.
Wohl gelingen denn, wie uns,
Andern ihre Spiele!
Von der Quelle bis an's Meer
Mahlet manche Mühle,
Und das Wohl der ganzen Welt
Ist's, worauf ich ziele.

- (b) Jeder Jüngling sehnt sich so zu lieben,
Jedes Mädchen so geliebt zu sein;
Ach, der heiligste von unsern Trieben,
Warum quillt aus ihm die grimme Pein?
Du beweinst, du liebst ihn, liebe Seele,
Rettest sein Gedächtnis von der Schmach;
Sieh, dir winkt sein Geist aus seiner Höhle:
Sei ein Mann und folge mir nicht nach.
- (c) Geschieht wohl, dasz man einen Tag
Weder sich noch Andre leiden mag,
Will Nichts dir nach dem Herzen ein;
Sollt's in der Kunst wohl anders sein?
Drum hetze dich nicht zur schlimmen Zeit,
Denn Füll' und Kraft sind nimmer weit:
Hast in der bösen Stund' geruht,
Ist dir die gute doppelt gut.

2. Translate and explain the biographical allusions in the following lines:—

Klein ist unter den Fürsten Germaniens freilich
der meine;
Kurz und schmal ist sein Land; mäsizig nur,
was er vermag.
Aber so wende nach innen, so wende nach
auszen die Kräfte
Jeder; da wär's ein Fest, Deutscher mit
Deutschen zu sein.

Doch was priesest du ihn, den Taten und
 Werke verkünden?
 Und bestochen erschien deine Verehrung
 vielleicht;
 Denn mir hat er gegeben, was Grosze selten
 gewähren,
 Neigung, Musze, Vertraun, Felder und
 Garten und Haus.
 Niemals frug ein Kaiser nach mir, es hat sich
 kein König
 Um mich bekümmert, und Er war mir
 August und Mäcen.

3. Translate and explain—

“Ich kenne dich, ich kenne deine Schwächen,
 Ich weisz, was Gutes in dir lebt und glimmt!”
 So sagte sie, ich hör' sie ewig sprechen,
 “Empfange hier, was ich dir lang bestimmt!
 Dem Glücklichen kann es an nichts gebrechen,
 Der dies Geschenk mit stiller Seele nimmt;
 Aus Morgenduft gewebt und Sonnenklarheit,
 Der Dichtung Schleier aus der Hand der
 Wahrheit.”

4. Give a concise account of the friendship between
 Goethe and Schiller, showing its importance for
 their personal development and their literary
 activity.

II.

1. Translate and locate, with short notes in explana-
 tion where necessary—

(a) Sind wir denn wehrlos? Wozu lernten wir
 Die Armbrust spannen und die schwere Wucht
 Der Streitaxt schwingen? Jedem Wesen ward
 Ein Notgewehr in der Verzweiflungsangst.

Es stellt sich der erschöpfte Hirsch und zeigt
 Der Meute sein gefürchtetes Geweih ;
 Die Gemse reißt den Jäger in den Abgrund ;
 Der Pflugstier selbst, der sanfte Hausgenos
 Des Menschen, der die ungeheure Kraft
 Des Halses duldsam unters Joch gebogen,
 Springt auf, gereizt, wetzt sein gewaltig Horn,
 Und schleudert seinen Feind den Wolken zu.

(b) Wir wollen nicht frohlocken seines Falls,
 Nicht des empfangnen Bösen jetzt gedenken,
 Fern sei's von uns ! Doch dasz wir rächen
 sollten

Des Königs Tod, der uns nie Gutes tat,
 Und die verfolgen, die uns nie betrübten,
 Das ziemt uns nicht und will uns nicht
 gebühren.

Die Liebe will sin freies Opfer sein ;
 Der Tod entbindet von erzwungnen Pflichten,
 Ihm haben wir nichts weiter zu entrichten.

2. Schreiben Sie eine kurze Kritik von "Wilhelm Tell," seinen Vorzüge und Schwächen, besonders insofern diese für Schillers Tätigkeit als dramatischer Dichter allgemein charakteristisch sind.

III.

1. What is the difference between a "voiced consonant" and a vowel articulated in the same place, *e.g.*, the first two sounds in E. "wound," and "year" respectively ?
2. Show the difference in the pronunciation of—E. "fail," G. "fehl" ; E. "so," G. "so" ; E. "many," G. "Mähne" ; E. "room," G. "Ruhm."

3. Give the rules on the pronunciation of the letters "ch" in ordinary German spelling, as exemplified by the words—Rauch, doch, Dichter, solch, welch, möchte, Sachsen, Chor, China, Champagner.
 4. Transcribe the lines given above in Question No. I. (3) in phonetic characters.
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ANCIENT HISTORY.

SECOND PAPER.

Professor Elkington.

1. Discuss the original powers of the Consulate, their limitations, and their gradual devolution upon other magistrates. When was the Consulate abolished?
2. Mommsen says that the whole legislation of Gaius Gracchus was pervaded by conflicting aims. Discuss this statement.
3. Discuss the question of the participation of Cæsar and Crassus in the affair of Catiline.
4. By what arguments could Cæsar defend his action in the Civil War?
5. Give the history of the reign of Septimius Severus.

6. Trace briefly the history of the Carolingians to the coronation of Charlemagne.
 7. Consider briefly Solon as a legislator.
 8. Write an account of the Sophists.
 9. Comment upon the following citations from Professor Dill's "Roman Society":—
 - (a) "There were many causes which rendered the tragedy of the Early Empire inevitable."—p. 41.
 - (b) "Juvenal and Tacitus have much in common."—p. 58.
 - (c) "The Circle of the younger Pliny."—p. 142.
 - (d) "These colleges became homes for the homeless, a little fatherland, or *patria*, for those without a country."—p. 271.
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HISTORY OF THE BRITISH EMPIRE.—
PART I.

SECOND PAPER.

Professor Elkington.

Write a short **ESSAY** on each of the following subjects.

1. The double character of the English Constitution.
 2. The specially constitutional work of Henry the Eighth.
 3. The entry of Scotland into the history of Europe.
 4. The dissolution of the first Parliament of James the First.
 5. When and why the Court of Star Chamber became unpopular.
 6. The character and political opinions of Lord Bacon.
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PURE MATHEMATICS.—PART I.

FIRST PAPER.

The Board of Examiners.

1. Enunciate and prove Sturm's theorem.

If any one of the auxiliary functions has imaginary roots, show that the original equation has at least an equal number of imaginary roots.

2. Prove that any rational fraction can be expressed as a sum of partial fractions.

Express $(x - a)^{-\alpha} (x - b)^{-\beta}$ as a sum of partial fractions.

3. State and prove the exponential theorem.

Sum to infinity the series whose general term is

$$\frac{(n+1)^3}{n} x^n.$$

4. State and prove the rule for forming convergents to a continued fraction.

Find the value of

$$\frac{1}{1 + \frac{2}{2 + \frac{3}{3 + \dots}}}$$

5. If
- x, y
- are positive, show that
- $(x^p - y^p)/(x^q - y^q)$
- lies between
- $\frac{p}{q} x^{p-q}$
- and
- $\frac{p}{q} y^{p-q}$
- .

If a_1, a_2, \dots, a_n are positive quantities in arithmetical progression with common difference d , shew that

$$a_1^r + a_2^r + \dots + a_n^r$$

lies between

$$\frac{a_n^{r+1} - a_1^{r+1}}{(r+1)d} \text{ and } \frac{a_{n+1}^{r+1} - a_1^{r+1}}{(r+1)d}.$$

6. State and prove the rule for the multiplication of determinants.

Shew that

$$\begin{vmatrix} (xbc) & (ybc) & (zbc) \\ (axc) & (ayc) & (azc) \\ (abx) & (aby) & (abz) \end{vmatrix} = (abc)^2 (xyz).$$

7. Shew that the general rational integral equation of the n^{th} order with complex co-efficients has n roots.

Give a geometrical representation of the n n^{th} roots of a given complex quantity.

8. Expand $\sin n\theta \operatorname{cosec} \theta$, and $\cos n\theta$, in descending powers of $\cos \theta$, n being a positive integer.

Shew that the sum of n terms of the series whose r^{th} term is

$$\sin^m \left(\alpha + \frac{2r\pi}{n} \right)$$

does not depend on α if m is a positive integer less than n .

9. Define $\cos x$, $\sin x$ when x is complex, and prove the addition formula for these functions.

If $\sin^{-1}(x + iy) = \tan^{-1}(u + iv)$, express $u^2 + v^2$ in terms of x, y .

10. Resolve $\cos \theta$ into factors.

Show how to sum

$$\frac{1}{1^n} + \frac{1}{3^n} + \frac{1}{5^n} + \dots$$

when n is even.

PURE MATHEMATICS.—PART I.

SECOND PAPER.

The Board of Examiners.

1. Prove that the joins of any point with the three pairs of opposite vertices of a quadrilateral are in involution.

Hence find a condition for the collinearity of three points, one on each side of a given triangle, and deduce the theorem of Menelaus.

2. If $a = 0$, $\beta = 0$, $a' = 0$, $\beta' = 0$ are the equations of four straight lines in the standard form, show that the equation of the circle which has $a\beta$, $a'\beta'$ as the extremities of a diameter is

$$\begin{vmatrix} \cos aa' & \cos a\beta' & a \\ \cos \beta a' & \cos \beta\beta' & \beta \\ a' & \beta' & . \end{vmatrix} = 0.$$

Hence shew that the circles described on the diagonals of a complete quadrilateral as diameters have a common radical axis.

3. Shew that four normals can be drawn from an arbitrary point to an ellipse.

If the normals at three points P , Q , R of an ellipse meet on the curve, shew that the centre of the circle PQR lies on a coaxial ellipse.

4. Find the equation of a hyperbola referred to its asymptotes as axes.

Prove that the chords joining a variable point on the curve to two fixed points on the curve intercept a fixed length on each asymptote.

5. If $f(x)$, $f'(x)$, $f''(x)$ are continuous, and x lies between a and $a+h$, prove that

$$f(a+x) - f(a) = \frac{x}{h} \{f(a+h) - f(a)\} + \frac{1}{2} x(x-h) f''(a+\theta h),$$

where θ is a positive proper fraction.

Discuss the principle of proportional parts in the case of the logarithmic tangent.

6. Shew how to find the turning values of a function of one variable.

Find those of

$$\frac{a^{n+1}}{(x-a)^n} + \frac{b^{n+1}}{(x-b)^n}.$$

7. State and prove the rule for finding the Jacobian of functions of functions.

If the roots of

$$x^3 - p'x^2 + q'x - r' = 0,$$

are the squares of the roots of

$$x^3 - px^2 + qx - r = 0,$$

shew that the Jacobian of p', q', r' , with respect to p, q, r is $8r(pq - r)$.

8. Shew how, by an algebraic substitution, to rationalize

$$\int F(x, y) dx$$

where $y^2 = ax^2 + 2hx + b$, and F denotes a rational algebraic function of x, y .

Prove that

$$\int \frac{dx}{y} = \frac{2}{\sqrt{a}} \tanh^{-1} \left(\frac{1}{\sqrt{a}} \frac{y - y'}{x - x'} \right)$$

where x', y' are particular simultaneous values of x, y .

9. Shew how from a known indefinite integral to deduce others by differentiation.

If u_1, u_2, \dots, u_n, v are $n + 1$ quadratic functions of x , shew that the value of

$$\int \frac{u_1 u_2 \dots u_n}{v^{n+1}} dx$$

is algebraic provided v is harmonically related to one of the u 's.

10. Define a definite integral as the limit of a sum, and shew how to find the limit.

Find $\int_a^b x^n dx$ from the definition for all values of n .

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PURE MATHEMATICS.—PART II.

FIRST PAPER.

The Board of Examiners.

1. Find the equation of the polar line of a given point with respect to a conic whose polar equation referred to the focus as pole is given.

Three conics U, V, W have a common focus and touch in pairs at the points P, Q, R . Shew that the tangents at P, Q, R meet the corresponding directrices of U, V, W in collinear points.

2. Find the angle between the tangents drawn from an arbitrary point to the general conic referred to any rectangular axes.

Hence obtain the equation of the director circle.

3. Find the general equation of a conic having double contact with two given conics.

If two tangents to an ellipse cut the auxiliary circle in $Y, Y'; Z, Z'$; then $YZ', Y'Z$ intersect on the major axis.

4. Shew how to find the foci of the conic represented by the general equation.

Find the locus of the focus of a parabola which has a given triangle ABC for a self conjugate triangle.

5. Find the envelop of a line cut harmonically by two given conics.

Shew that the tangents to two conics at their four points of intersection touch a third conic.

6. Find the magnitude and direction of the shortest distance between two straight lines.

A straight line moves so as to be at given distances from the rectangular axes. Find the equation of the surface traced out by it.

7. Prove that six normals can be drawn from a given point to a central conicoid, and that they lie on a cone of the second order.

If the given point is on the conicoid, every generator of the cone cuts the conicoid again in a point the normal at which intersects the normal at the given point.

8. Find the principal planes of a given central conicoid.

Shew that the common conjugate diametral planes of two concentric conicoids are given by the Jacobian of the two conicoids and the reciprocal of either with respect to the other.

9. Shew that the hyperboloid of one sheet has on it two systems of generating lines, and that the generating lines do or do not intersect as they do not or do belong to the same system.

Two generators of the same system passing through the ends of any diameter of the principal elliptic section cut a third generator in P, P' . Shew that the product of the distances of P, P' from the plane of the principal elliptic section is constant.

10. Find the conditions that a conicoid may be a surface of revolution.

If such a surface pass through two given non-intersecting straight lines, shew that its centre lies on one of two straight lines intersecting at right angles, and that referred to these lines as axes of x , y and their common perpendicular as axis of z , the equation of the locus of the axis of revolution is $xy \sin \alpha = dz$, where α is the inclination and d the distance between the two given lines.

PURE MATHEMATICS.—PART II.

SECOND PAPER.

The Board of Examiners.

1. Investigate formulæ for the change of two independent variables.

If u , v are functions of x , y , and

$$\frac{U}{au + bv + c} = \frac{V}{a'u + b'v + c'} = \frac{1}{a''u + b''v + c''},$$

prove that—

$$\frac{U_{xx} V_x - U_x V_{xx}}{u_{xx} v_x - u_x v_{xx}} = \frac{\delta(U, V)}{\delta(u, v)}.$$

2. Shew how to eliminate n arbitrary functions of a given function of the variables from an equation in three variables.

Eliminate the n functions ϕ from

$$z = \sum x^{r-1} \phi_r(ax + by).$$

3. Shew how to find the maximum and minimum values of a function of n variables which are connected by m equations.

Find the minimum value of

$$x_1^2 + x_2^2 + \dots + x_n^2$$

where x_1, x_2, \dots, x_n , are connected by m equations of the form

$$a_{r1} x_1 + a_{r2} x_2 + \dots + a_{rn} x_n = b_r.$$

4. Shew that a curve of order n cannot have more than $\frac{1}{2}(n-1)(n-2)$ double points and that the homogeneous co-ordinates of any point on a curve with this maximum number of double points are proportional to rational integral functions of order n of a parameter.

5. Expand the co-ordinates of a point on a curve in powers of the arc of the curve.

If the tangents at the ends of a small arc PQ meet in T , compare the excess of TP and TQ over the arc PQ with their excess over the chord PQ .

6. Show how to find the envelop of a curve whose equation contains two parameters connected by a given equation.

Show how to determine the envelop of a line drawn through any point of a given curve so as to make a given angle with the tangent thereat.

7. Trace the curves

$$x^5 + y^5 = a^2 x^2 y$$

$$\tan \theta = \frac{r + \theta}{r - \theta}.$$

8. Show how to change the variables in a double integral.

Effect the change when the relations between the variables are

$$\frac{a \sin \theta \cos \phi}{\sin x \cos y} = \frac{b \sin \theta \sin \phi}{\sin x \sin y} = \frac{c \cos \theta}{\cos x},$$

and hence find the volume of an ellipsoid.

9. If x is a positive constant, shew that

$$\int_0^{\infty} \frac{\sin x\theta}{\theta} d\theta = \frac{\pi}{2}$$

Trace the surface

$$z = \int_0^{\infty} \frac{\sin x\theta \cos y\theta}{\theta} d\theta.$$

10. Define the Beta and Gamma functions and prove the formula connecting them.

Find the value of

$$\int \int \dots x^{l-1} y^{m-1} z^{n-1} \dots dx dy dz \dots$$

where the limits are such that x, y, z, \dots have all positive values for which $x + y + z + \dots$ does not exceed unity.

MIXED MATHEMATICS.—PART I.

SECOND PAPER.

The Board of Examiners.

1. A circular cylinder of radius a turns in V -shaped bearings of angle $2a$, the angle of friction being λ . The cylinder carries two concentric drums of radii r , R ($> r$), and a weight carried by a rope coiling on the smaller drum is raised by pulling a vertical rope uncoiling from the larger. Shew that the mechanical efficiency is

$$\frac{1 - a \sin 2\lambda/2 R \sin a}{1 + a \sin 2\lambda/2r \sin a}.$$

2. State and prove the principle of virtual work in as general a form as possible.

A, B, C , in a vertical plane, are three moving points of a frictionless mechanism (a form of tongs) and AB, AC are always equal. When the distance between A and BC increases by x BC decreases by x/k . A heavy block is seized between B and C , which bear on two vertical surfaces on it, the co-efficient of friction being μ . Shew that if the tongs are raised by a vertical pull on A , the block will not slip provided $\mu > 1/2k$.

3. Investigate the curvature of the path of a point of a moving lamina, the centrodes of the motion being given. When the centrodes are not given, give a geometrical construction for the centre of curvature of the path of a point when those of two points are given.

Three light bars AB , BC , CD are smoothly jointed together at B , C , and AB , CD are jointed to fixed points at A , D , the whole being in a vertical plane, and A vertically over D . The bar BC is prolonged downwards beyond C to E , and the frame is in equilibrium with a weight W carried at E . Find the position of E for a given position of the frame, determine the stresses in AB , CD , and examine the stability.

4. Investigate necessary and sufficient conditions of equilibrium of a three-dimensional system of forces on a rigid body.

A uniform triangular plate of sides a , b , c is at rest in a smooth spherical bowl of radius r with its angles on the bowl. Shew that the inclination θ of the plate to the horizontal is given by

$$\cos \theta = \frac{9V}{A \sqrt{(9r^2 - a^2 - b^2 - c^2)}},$$

where V is the volume of the tetrahedron whose corners are the centre of the bowl and the angles of the plate, and A is the area of the plate.

5. A rough circular cylinder of radius a fits easily in two fixed horizontal rings whose centres are in the same vertical and at a distance h apart. A horizontal arm at the top of the cylinder is loaded so that the whole weight W acts at distance b from the axis. Find the least value μ of the co-efficient of friction for equilibrium.

A couple P is applied around the axis so as to move the cylinder slowly. Shew that it descends with a screw motion of angular pitch

$$\alpha \text{ where } \sin \alpha = \sqrt{\frac{1 + 1/\mu^2}{1 + 4b^2/h^2}}.$$

6. Prove Maxwell's theorem for the relation between the quantities of material in tension and compression in a frame uniformly stressed and carrying given loads at given points.

A light semicircular frame, carrying a given load at a point O , bisecting the horizontal line of supports AB , consists of a large number of equal radial struts $OA, OA_1, \dots, OA_n, OB$, equally spaced in a vertical plane and connected by ties $AA_1, A_1A_2, \dots, A_nB$. The frame hangs suspended from A, B . Find the stresses in the frame.

The members being stressed to the working limit, shew that the quantity of material in tension between two close radii through O is as small as possible for any frame lying entirely below AB and carrying the same load. Hence shew that the frame is one of minimum material subject to the condition mentioned.

7. Shew that the centre of mass of a homogeneous solid formed of two pyramids on opposite sides of a plane quadrilateral base is that of eight equal particles, six of positive mass at the corners of the solid, one of negative mass at the intersection of the diagonals of the base, and a similar one at the intersection of the join of the vertices of the pyramids with the base.

8. A horizontal plate makes rectilinear simple harmonic oscillations of period T and amplitude a in its own plane. A mass m rests on the plate, the co-efficient of friction being μ . The initial velocity of mass and plate being given, shew how to construct the velocity-time graph of the mass. Investigate the possible types of periodic motion of the mass, and find the values of μ separating them.
9. Two masses m, M slide on a smooth horizontal bar. A massless helical spring, which gives a thrust T at unit compression, is interposed between the masses. The masses have velocities v, V towards one another before the spring comes into action. Find their velocities after that action ceases, and the time it lasts.
- If there are three masses each equal to m on the bar, with two springs of equal stiffness interposed between them, and if one of the outer masses moves with velocity v towards the two others, which are initially at rest, and at the length of the interposed spring apart, find which spring first recovers its natural length, and the velocities of the masses at the time.
10. Demonstrate the energy condition of stability, and shew how to assign limits to the range of motion of a stable system when the energy of the initial disturbance is given.

A rectangular vessel is free to turn on a horizontal axis which is normal to two sides, at equal distances a from the two others, and at distance h from the base. The c.m. of the vessel is at distance c below the axis. Shew

that the greatest depth of liquid which can be poured into the vessel without rendering the upright position unstable is

$$h + \sqrt{h^2 + 2cl - 2a^2/3},$$

where l is the depth of liquid whose weight is that of the vessel.

MIXED MATHEMATICS.—PART II.

(ARTS AND ENGINEERING.)

The Board of Examiners.

1. Investigate the vector equations of equilibrium of a rigid body under any forces, and deduce the Cartesian equations.

A body is maintained in equilibrium under a given system of forces, such as F at ρ , by three reactions, R_1, R_2, R_3 , at $A (\rho_1), B (\rho_2), C (\rho_3)$. Each reaction is resolved into three components, one normal to the plane ABC , the others along the sides of ABC which pass through the point of application. Find expressions for the normal components and for the differences of the pairs of components along the sides of ABC .

2. Investigate general equations of equilibrium for a perfectly flexible string.

A rope is suspended from two points at the same level, and the cross-section is the same at the same distance from the two ends. Shew

that any reduction of section (subject to this condition) decreases the tension at every point of the rope. Hence or otherwise, shew that the maximum span for a given length of rope and a given strength of material is that of the catenary of equal strength.

3. A frictionless statical system consists of a linear series of pieces, the position of the n th piece being determined by the points (x_n, y_n) , (x_{n+1}, y_{n+1}) , and its potential energy being $w_n(x_n, y_n, x_{n+1}, y_{n+1})$, with the relation $u_n(x_n, y_n, x_{n+1}, y_{n+1}) = 0$. Shew that in a position of equilibrium

$$\frac{\delta(w_{n-1} + w_n)}{\delta x_n} + \lambda_{n-1} \frac{\delta u_{n-1}}{\delta x_n} + \lambda_n \frac{\delta u_n}{\delta x_n} = 0$$

where y_n may be substituted for x_n and the λ 's are undetermined multipliers.

Hence, or otherwise, shew that if the potential energy of a continuous linear system is

$$\int_{z_1}^{z_2} w(x, y, x', y') dz,$$

where

$$x' = dx/dz \quad y' = dy/dz,$$

with the relation $u(x, y, x', y') = 0$, the differential equations of equilibrium are

$$\frac{\delta w}{\delta x} - \frac{d}{dz} \frac{\delta w}{\delta x'} + \lambda \frac{\delta u}{\delta x} - \frac{d}{dz} \lambda \frac{\delta u}{\delta x'} = 0$$

with the corresponding equation in y .

Apply this to a heavy elastic cord.

4. Prove the differential equation—

$$\frac{d^2}{dx^2} K \frac{d^2 y}{dx^2} = w(x)$$

for the deflection of a naturally straight beam under transverse load.

Shew that for a uniform beam, if M_1, M_2, M_3 are the moments, y_1, y_2, y_3 the deflections at three points x_1, x_2, x_3 of a span

$$\begin{aligned} \Sigma\{M_1 - w_2(x_1)\}(x_2 - x_3) &= 0 \\ \Sigma\{Ky_1 - w_4(x_1)\}(x_2 - x_3) \\ &= -\frac{1}{6} \Pi(x_2 - x_3) \Sigma\{M_1 - w_2(x_1)\} \end{aligned}$$

where

$$w_n(x) = \int_0^x w_{n-1}(x) dx, w_0(x) = w(x).$$

Deduce the equations of three moments by taking x_1, x_2, x_3 as points of support, and treating the supporting pressure at x_2 as a concentrated load.

5. Shew that the displacement $\Delta\rho$ of the point ρ of a body due to a rotation ϕ around an axis OA through the origin is given by

$$\Delta\rho = \frac{[\alpha(\rho + \frac{1}{2}[\alpha\rho])]}{1 + \alpha^2/4}$$

where α is in the direction OA and of magnitude $2 \tan \phi/2$.

Shew that two rotations α, β in succession are equivalent to a rotation γ given by

$$\gamma/2 = \frac{\alpha/2 + \beta/2 - [\alpha \beta]/4}{1 - (\alpha \beta)/4}$$

6. A body moving in a straight line is acted on by a force F_1 which is a function of position and by a force F_2 which is the product of the square of the velocity and a function of position. If v_0 is the initial velocity, v the velocity in a subsequent position, v_1, v_2 the values v would have if F_1, F_2 respectively acted alone, shew that

$$\frac{v^2}{v_2^2} = 1 + \int_{v_0^2}^{v_1^2} \frac{dv_1^2}{v_2^2}.$$

7. Investigate equations for the motion of a heavy particle in a rough rotating groove, and discuss methods of solution.

A particle slides on a fixed rough plane curve under no external forces. Shew that if the coefficient of friction is $1/6$, the velocity is reduced 41 % while the direction of motion turns through two right angles.

8. A cam turning uniformly in its plane about a fixed centre O drives a straight-line sliding piece by contact with a plane surface on it normal to its direction of motion. Shew that if the sliding piece moves with uniform acceleration, the (p, r) equation of the profile of the cam is $r^2 = p^2 + 2ap + b$, where a, b are constants and O is the origin.

9. Investigate general equations for the path of a resisted projectile, and examine the general character of the path.

If the resistance is very small, shew that the decrease of horizontal range is approximately

$$2 \frac{U^2}{g\lambda_0} \int_0^{\lambda_0} (\lambda^2 + \lambda_0^2) X d\lambda$$

where U is the initial horizontal velocity, X is the horizontal component of the resistance per unit weight, $\lambda = \tan \psi$, $\lambda_0 = \tan \psi_0$ where ψ_0 is the elevation of projection, and X is to be calculated from the unresisted trajectory.

Complete the integration when the resistance varies as the square of the velocity.

MIXED MATHEMATICS.—PART II.

(ARTS AND ENGINEERING.)

SECOND PAPER.

The Board of Examiners.

1. Investigate the relations between the true, mean, and eccentric anomalies in a planetary orbit.

Find the form of these relations for an eccentricity near unity, and hence obtain the time of falling a given distance towards the centre from rest at a given distance.

2. Summarize the methods of solution for the dynamical equation $\ddot{x} = f(x, \dot{x}, t)$.

Shew that

$$4\Delta y = \{f(x, y) + 3f(x + 2\Delta x/3, y + \Delta'y)\}\Delta x,$$

$$\text{where } 3\Delta'y = 2f(x + \Delta x/3, y + f\Delta x/3)\Delta x,$$

is a third-order quadrature-formula for the differential equation $dy/dx = f(x, y)$.

3. The dynamical equation of a certain system is

$$\ddot{x} + a\dot{x} + bx + cx = 0,$$

where a, b, c are functions of x, \dot{x}, \ddot{x} . Shew that there is an equation of the form

$$(x, \dot{x}, \ddot{x})^2 + \int (Ax^2 + B\dot{x}^2 + C\ddot{x}^2) dt = K,$$

where the co-efficients of the two quadrics are linear functions of a, b, c and their differential co-efficients with respect to the time, K is a constant, and A, B, C may be made to have the same constant sign for a sufficiently small range, on both sides of zero, of x, \dot{x}, \ddot{x} , provided $b(000), c(000)$ are not zero.

4. Shew that a homogeneous octahedron formed by two opposed pyramids on any plane quadrilateral base, is equimomental with $m/20$ at each corner, $-m/20$ at the intersection of the diagonals of the base, $-m/20$ at the intersection with the base of the join of the vertices of the pyramids, and $4m/5$ at the c.m. of the octahedron.
5. A uniform bar AB of mass M , and length $2a$, is smoothly jointed to two massless sleeves on the fixed smooth rods OA, OB , which are at right angles. Beyond A on OA is a second sleeve C of mass m , and between the two is a very stiff massless helical spring in contact with both of them. C being at rest, the bar is started with angular velocity $\bar{\omega}$ so that A moves up to C . Shew that the period of compression of the spring is

$$\pi \sqrt{\frac{4m Ma^2}{T(4Ma^2 + 3mb^2)'}}$$

where $OB = b$, and T is the thrust of the spring per unit compression.

Find the motion of AB and C at the end of the compression.

6. State and demonstrate the general integrals of a two-dimensional system under no external forces.

Two laminas moving in the same plane are smoothly connected in such a way that a fixed line in one can slide freely along a fixed line in the other. The system being projected in any given manner and left to itself, reduce the determination of the subsequent motion to quadratures.

7. Demonstrate Lagrange's general equations of motion.

A cord of length l fits smoothly in a uniform tube whose axis is a plane curve. The tube rotates in its plane about a fixed centre C with uniform angular velocity $\bar{\omega}$, and the cord lies at relative rest with its middle point on an axis of symmetry of the tube through C . Find the condition of stability of the cord, and if it is satisfied, shew that the time of a small oscillation is $2\pi\sqrt{l/2\bar{\omega}^2 p}$ where p is the projection of the radius to one end of the cord on the direction of the tube at that point.

8. Find the acceleration of a point whose position is defined relative to a rotating space.

If there are $n + 1$ rotating spaces with a common fixed point, and the angular velocity of the r^{th} relative to the $r + 1^{\text{th}}$ is Ω_r , shew that the

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acceleration relative to the $n + 1^{\text{th}}$ space of a point ρ whose velocity and acceleration relative to the first space are v, α , is

$$a + 2 \sum_1^n [\Omega v] + \{ \sum_1^n \Omega \}^2 \cdot \rho - \rho (\sum_1^n \Omega)^2 \\ + \sum_1^n \left[\frac{d\Omega}{dt} \rho \right]$$

where $\{ \sum \Omega \}^2$ is to be algebraically expanded, and one factor of each term, of not lower index than the other factor, associated with ρ as a scalar product; $d\Omega_n/dt$ is calculated as if the space with respect to which Ω_n is defined were fixed.

9. State and prove the general equation for the rate of increase of angular momentum of a body about a fixed point, and obtain the equations of motion when the angular momentum is defined by components along axes fixed in the body.

It is observed that if the axis of a top with fixed c.m. is prolonged as a spindle, this spindle will move along a fixed wire of any form with which it is placed in contact. Explain this, assuming that the spindle rolls on the wire, and obtain an expression for the pressure of the spindle against the wire.

DEDUCTIVE LOGIC.

SECOND PAPER.

Professor Laurie.

1. It has been said that Plato was the founder of logical science. Consider this statement.

2. May the question of the validity of the logical laws be disentangled from the question of their origin? Give reasons for your answer.
3. Mention different meanings in which the Law of Sufficient Reason has been affirmed. Is this law necessary for Formal Logic?
4. What problems does thought present to Psychology and to Logic respectively?
5. In what ways does language minister to the progress of thought? Is thought possible without language?
6. Give, in its simplest form, the contradictory of the following proposition:—"Nothing that is either PQ or PR is Pqr or pQs or prs or qrs or pq or pS or qR ." May a contrary be also obtained?
7. What meaning is attached by Keynes to the process of contraposition in dealing with complex propositions? Find the full contrapositive of each of the following:—Whatever is A or BD or BE is C ; some AC is not either BD or bDE or de .
8. Eliminating X and Y , what may be inferred by a combination of the following premisses:—“(1) Either some A that is X is not Y , or all D is both X and Y ; (2) Either some Y is both B and X , or all X is either not Y or C and not B ”?

INDUCTIVE LOGIC.

SECOND PAPER.

Professor Laurie.

1. What assurance, if any, may be given of the validity of the Law of Universal Causation? Is it possible to disentangle the question of the validity from the question of the origin of this Law?
2. Consider Venn's statement that the third stage in the expression of the causal relation renders it useless for any purpose of inference.
3. Analyse the process involved in the discovery and proof of an Original Induction.
4. What conditions are to be aimed at in the employment of the Method of Difference?
5. Show the value of the Darwinian theory, as providing a basis of classification in the Natural Sciences.
6. What is the value of Illustrative as compared with Constructive Hypotheses? Refer to Venn's treatment of this subject.
7. Is it necessary that the man of science, in investigating social phenomena, should leave them undisturbed if his observations are to be theoretically valid? Is this ideal position secured even in physics?

BIOLOGY.—PART I.

MEDICAL COURSE.

The Board of Examiners.

WRITTEN.

All answers must be illustrated by rough sketches.

1. Write an account of the glands and gland products of a rabbit.
 2. Describe the development of the mesoblastic somites in the bird, frog, and amphioxus.
 3. Describe the development of the Wolffian tubes in a frog and in a bird.
 4. Describe the eye and method of vision of an arthropod and a sheep. How is the movement of the eyeball provided for?
 5. Give an account of the structure, life history, and nutrition of the Hay Bacillus, and discuss the question of spontaneous generation.
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BIOLOGY.—PART I.

The Board of Examiners.

PRACTICAL EXAMINATION.

All answers must be illustrated by rough sketches.

1. Dissect the frog provided so as to show the circulatory system.
 2. Describe specimen A by sketches.
 3. Describe the skull provided. Draw three transverse sections in order to show the structure and relative positions of the parts in the region of the cranium.
 4. Describe specimen B by sketches.
 5. Describe specimen C by sketches. Where does it live?
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BIOLOGY.—PART I.

ZOOLOGY.—SCIENCE COURSE.

The Board of Examiners.

WRITTEN.

All answers must be illustrated by rough sketches.

1. Write an account of the glands and gland products of a rabbit.
2. Describe the development of the mesoblastic somites in the bird, frog, and amphioxus.
3. Describe the development of the Wolffian tubes in a frog and in a bird.
4. Describe the eye and method of vision of an arthropod and a sheep. How is the movement of the eyeball provided for?
5. Write an account of the structure of the skeleton in the dog-fish.

NATURAL PHILOSOPHY.—PART I.

The Board of Examiners.

1. A steamer *A* is travelling due E. at 12 knots an hour, and another *B* is travelling N.E. at 9 knots an hour. At a certain instant *A* is N.W. of *B* at a distance of 18 knots. Show how to determine, by graphic construction, the shortest distance the steamers get from each other, supposing they keep on their original courses.

2. With a certain balance, when the weights are put into the left hand pan the apparent weight of a body is 51.474 grams, and when the weights are put into the right hand pan its apparent weight is 51.577 grams. Find the true weight of the body, and the ratio of the arms of the balance.

3. Describe fully Regnault's method of determining the coefficient of expansion of a gas at constant pressure.
Show how to deduce the coefficient from the observations, making all corrections.

4. Describe fully how to determine the pressure of aqueous vapour present in the atmosphere at any time.
Explain why it is that for the same barometric pressure moist air is lighter than dry air.

5. What is supposed to be the electrical condition of a solution of sulphuric acid in water ?

If two metal plates maintained at a fixed potential difference are immersed in the solution, how is this condition affected ?

Discuss the theory of the simple galvanic cell.

6. State what you know of the mutual action of coils carrying currents; and describe some accurate form of current meter based on this action.

7. A reflecting galvanometer, whose resistance is 450 ohms, is shunted by a 50-ohm coil, and a resistance of 99,255 ohms is placed in series with the combination. A cell of e.m.f. 1.433 volts and internal resistance 700 ohms is coupled up to this system, and a deflection of 4.3 scale divisions is produced.

Find the deflection of the galvanometer when unshunted (*a*) per micro-ampere ($\text{amp.} \times 10^{-6}$); (*b*) per micro-volt.

8. Two thin concave lenses 1 and 2, of focal lengths f_1 and f_2 , have a common axis, and are a distance a apart. A ray of light parallel to the axis and distant y from it is refracted by 1 and then by 2; show that the total deviation it suffers is equal to

$$y \left\{ \frac{1}{f_1} + \frac{1}{f_2} + \frac{a}{f_1 f_2} \right\}$$

and find the focal length of the single lens which when coaxial with the pair would produce the same deviation on this ray.

NATURAL PHILOSOPHY.—PART II.

(ARTS AND SCIENCE.)

SECOND PAPER.

The Board of Examiners.

1. The true mass of a body is required to be determined correct to one part in a million. Supposing a suitable balance and correct weights are available, describe the necessary experiments, and deduce the complete formula expressing the result.
2. Prove that the bending moment required to produce a given curvature in a uniform elastic rod, initially straight, is equal to

$$\frac{YI}{\rho},$$

where Y = Young's modulus,

I = moment of inertia of section of rod,

ρ = radius of curvature produced.

Two equal metal bars are joined by a straight wire forming the letter H , the wire being rigidly attached to the bars, perpendicular to their axes, and in the line joining their centres of gravity. The bars are hung from the ceiling by two thin threads without rigidity so that the H lies in a horizontal plane and the wire is straight. Two adjacent ends of the H are now slightly approximated and then released producing vibrations in the horizontal plane. Prove that

$$Y = \frac{4\pi^2}{T^2} \frac{Kl}{2I},$$

where Y = Young's modulus for the wire,
 T = period of the vibration,
 K = moment of inertia of either bar about
 a vertical axis through its centre
 of gravity,
 l = length of wire,
 I = moment of inertia of section of wire.

3. A perfect gas describes a Carnot cycle. Determine the work done, the efficiency, and the quantities of heat taken in and rejected.
4. Obtain the dimensional equation connecting the frequency of a vibrating string and the quantities on which it depends, and deduce the mathematical expression of Mersenne's laws.
5. Design an achromatic cemented convex lens of 20 cm. focal length whose external surfaces have the same curvature, the optical properties of the glasses to be used being—
 mean refractive indices, $\mu_1 = 1.5$, $\mu_2 = 1.6$;
 dispersive powers, $\phi_1 = .016$, $\phi_2 = .025$.
6. Describe, and give the complete theory of, the laboratory method of determining H .
7. Describe with full detail how to calibrate a voltmeter by using a copper voltameter as the basis of the calibration.
8. Define "co-efficient of self-induction" and "co-efficient of mutual induction," and describe fully how to measure a co-efficient of self-induction.

NATURAL PHILOSOPHY.—PART II.

(ENGINEERING COURSE.)

SECOND PAPER.

The Board of Examiners.

1. A fly-wheel, mounted so that friction may be neglected, is set in motion by a mass m_1 which is hung at the end of a light string wound round the axle and which describes a measured space from rest in time t_1 ; when a mass m_2 is substituted for m_1 , the same space is described in time t_2 . Express the moment of inertia of the fly-wheel in terms of these masses and times and the radius of the axle.

If friction is not neglected determine the acceleration of the falling mass m_1 .

2. Draw an accurate diagram of the apparatus employed by Berthelot for the determination of the latent heat of steam; explain fully the use of each part and the reasons for the various precautions to be taken when employing the apparatus.
3. Describe the construction and mode of use, and give the theory of Féry's radiation pyrometer.

State what you know regarding the industrial applications of this instrument.

4. The cycle of the Banké engine differs from the Beau de Rochas cycle in that the compression of the gaseous mixture is isothermal; in other respects the cycles are identical. Express the maximum efficiency of the Banké cycle in terms of the lowest and highest values of the pressures and volumes concerned.
5. Describe the construction and mode of use, and give the theory of Kelvin's absolute electrometer.
6. Define "co-efficient of self-induction" and "co-efficient of mutual induction."

Describe fully how to measure a co-efficient of mutual induction.

7. Discuss fully the armature reactions of a continuous current dynamo, and point out the mechanical and electrical arrangements by which the effects of these reactions can be approximately eliminated.

Prove the formula that gives the e.m.f. generated in such an armature in terms of the different quantities involved.

CHEMISTRY.—PART I.

The Board of Examiners.

1. Explain and exemplify the behaviour of different solid phosphates when heated.
2. Give a short account of the chief non-metallic hydrides—their composition, properties, reactions, and modes of formation.
3. Explain and exemplify the terms “double oxides”, “double chlorides”, “double sulphates”, “double sulphides”.
4. Give instances of metals which readily vary their valence when in aqueous solution as the positive radicles of salts, and explain some of the reactions which bring out this tendency.
5. Give practical instances of normal salts that are not neutral to litmus, and explain the theory of such cases.
6. Explain fully, from a practical point of view, why calcium, strontium, and barium are regarded as forming a group of allied elements. Point out also their more striking differences.
7. Discuss the actions of dilute sulphuric acid on the following:—Nitrites, hypochlorites, thiosulphates, sulphides.

CHEMISTRY.—PART II.

(SCIENCE AND ENGINEERING.)

The Board of Examiners.

1. What is meant by "The ratio of the specific heats of a gas"? How can the limiting value of this ratio be calculated? Discuss the bearing of the magnitude of the ratio for a given gas on the question of its molecular complexity.
2. A certain reaction is either uni- or bi-molecular. In order to decide which, experiments were carried out, with the following results:—

Experiment.	1.	2.	3.	4.
$A =$	0.5	0.4	0.2	0.1 g. mols. per litre.
$t =$	20	25	50	100 minutes.

Find the number of reacting molecules, and also the value of the velocity co-efficient. (A represents the initial concentration of the reacting substance, t the time when the reaction was half completed.)

$$\text{For a unimolecular reaction } k = \frac{1}{t} \log. \frac{a}{a-x},$$

$$\text{For a bimolecular reaction } k = \frac{1}{t} \left(\frac{1}{a} - \frac{1}{a-x} \right).$$

3. Discuss the Vapour Pressure (or Boiling Point) curves of pairs of completely miscible liquids.

Illustrate by reference to the following, or similar, cases:—

- (a) Methyl Alcohol and Water.
 (b) Ethyl Alcohol and Water.
 (c) Nitric Acid and Water.

4. Discuss the influence of change of Pressure and of Temperature on chemical equilibrium. How is the change of equilibrium with temperature related to the heat of reaction ?
- 5 and 6. Write papers discussing the relation between the chemical properties of the element and its position in the Periodic classification in the case of the following :—
- (5) Beryllium.
(6) Thallium.
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JURISPRUDENCE (INCLUDING ROMAN LAW).

The Board of Examiners.

Candidates should answer **SEVEN** questions only.

1. Explain the operation of the *exceptio non numeratæ pecuniæ*.
2. What do you consider to be the fundamental distinctions between moveable and immovable property, and how have the two classes of property been differently treated in law ?
3. In what connections, and with what significance was the term *quasi* used in Roman Law ?
4. In what different modes may several persons be liable in respect to a single sum of money ? What was the nature of the liability of *co-heredes* to creditors, and what was the position of *heres* and *fidei-commissarius* respectively in universal *fidei-commissum* ?

5. Write a brief note on personal and territorial law.
 6. In what senses does Hearn use the terms *power* and *liberty*? Criticise their use.
 7. Connect *law* as used in the social sciences with *law* as used in physical science.
 8. On what grounds, and with what reason, has the definition of law as a command of the State been attacked?
 9. Write a note on self-redress in Roman Law.
 10. Criticise Austin's rejection of Public Law as a fundamental decision, and his inclusion of the matter of it in the Law of Persons.
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CONSTITUTIONAL HISTORY AND LAW.—
PART II.

The Board of Examiners.

Candidates should answer **SIX** questions only.

1. What courts and jurisdictions in the English system have been of an "international" character, and what has been their fate?
2. Write a note on the principal objects of the Judicature Acts 1873 and 1875.

3. Write a note on the following dictum :—

“A case is only authority for what it actually decides. I entirely deny that it can be quoted for a proposition that may seem to follow logically from it. Such a mode of reasoning assumes that the law is necessarily a logical code, whereas every lawyer must acknowledge that the law is not always logical at all.” (Per Lord Halsbury, L.C., in *Quinn v. Leatham*, 1901, A.C. 495.)

4. “In adopting a construction (*i.e.* of a Statute) not in strict conformity with the language, there is more danger than there once was of going beyond or falling short of its real intention.” (Stephen, *Com.* 1-77.) Explain and comment.
5. What sources of information outside a Statute may be looked at as aids to its interpretation ?
6. What is the power of the Crown (*a*) to legislate, (*b*) to establish Legislatures for colonies ?
7. What are the most important differences in pleadings at common law and pleadings in equity ? What conclusions do you draw from these differences as to the purpose of pleadings in the two jurisdictions ?
8. State briefly the principal features of New South Wales government from 1828 until the introduction of responsible government.
9. Write a note on public policy as a source of judiciary law.

LAW OF PROPERTY IN LAND AND
CONVEYANCING.

Mr. Guest.

1. How is the operation of a conveyance in fee simple of land in this country affected by the Statute *Quia Emptores*.
2. How, if at all, are common law conditions annexed to estates in fee simple affected by the Rule against Perpetuities? Cite authority.
3. What are the exceptions to the Rule that the Statute of Uses operates only where there is a transmutation of possession?
4. *B*, who died in 1905, by his will devised land to his daughter *A* for her life, and after her death to such of her children as should attain the age of 21 years and their respective heirs. *A* died in 1906, leaving her surviving two children only of the ages of 15 and 12 years respectively. What effect, if any, should be given to the gift in remainder? Give reasons.
5. *A*, the assignee of a certain lease, contracted in writing to sell the leasehold to *B*. The purchase money was paid, but the lease was never formally assigned. *B* entered into possession, and paid rent for a time, but ultimately got into arrears, and the lessee brought an action for the rent against *A*. Can he succeed? Give reasons.

6. If the person conveying is expressed to convey as beneficial owner, what is the effect in the case of--
- (a) A conveyance on sale of freehold land,
 - (b) A conveyance of leasehold property,
 - (c) A conveyance by way of mortgage respectively? Give reasons.
7. On a partition between joint tenants in fee simple, how is the land to be taken by each conveyed to him in severalty? How would you arrange the parties to the conveyance, and what operative words would you use? How would the conveyance be affected by the omission of any words of limitation? Give reasons.
8. What are the rules as to covenants running with the land where the relation of landlord and tenant does not exist? To what extent is any such rule affected by any and what doctrine of Equity? Cite authority.
9. What is the effect of the provisions of the Insolvency Act 1897 as to the effect of insolvency in post-nuptial settlements?
10. A testator signed his will at the foot thereof when no other person was present. On being told that two witnesses were necessary he sent for *A* and *B*, who arrived together. The testator produced his will in their presence, and said to them—"I want you to sign as witnesses. I have already signed," and pointed to his signature. *A* and *B* thereupon signed their names as witnesses. Is the will validly executed? Give reasons.

11. Discuss shortly the effect of the provisions in the Transfer of Land Act 1890 as to the application of other laws and Statutes to land under the Act.
12. If land subject to a mortgage in fee is brought under the Transfer of Land Act 1890, how, if at all, are the rights and remedies of the mortgagee affected? What provision is made by the Act for the cases of foreclosures and sales by mortgagees?

**LAW OF CONTRACTS AND PERSONAL
PROPERTY.**

Mr. Duffy.

Write a short paper on each of the six following topics:—

1. Guarantees within the meaning of Section 208 of the Instruments Act 1890.
2. *Par delictum* in cases of illegal contract.
3. An infant's contract for necessaries.
4. The Common Law action of deceit.
5. Champerty.
6. Assignment of choses in action.

7. What were the evils intended to be remedied by the first legislation in Victoria with respect to Bills of Sale, and what were the main provisions of such legislation ?
 8. What is essential to the validity of a "lien on crops" under the provisions of the Instruments Act 1890 ?
 9. Explain the nature of a partner's share in the partnership property.
 10. Explain and illustrate the different methods of delivering possession of personal chattels.
 11. Under what circumstances, if any, can a person give to another a better title to personal property than he himself has ?
 12. What are the rights of an unpaid seller of goods against such goods ?
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PHYSICAL GEOGRAPHY.

The Board of Examiners.

1. Discuss the strong and weak points of Lowthian Green's "Tetrahedral" theory of Geomorphology.
2. Illustrate the park and alpine types of mountain structures. Show how more intense folding of the alpine type passes into thrust faulting. Where are such features met with ?
3. Discuss the influence of the Southern Ocean and of the Indian Ocean respectively on Australian climate.
4. Define the following terms:—Anticyclone, caldera, atoll, fiord, geoisotherm, nimbus.
5. Classify the different types of plains. State their modes of origin, and, as far as possible, illustrate your answer by Victorian examples.
6. Illustrate by diagrams the ways in which a river may change—
 - (a) Its length.
 - (b) Its velocity.
 - (c) The width of its valley.

PHYSIOLOGY AND HISTOLOGY.

SECOND YEAR SCIENCE.

The Board of Examiners.

1. What is meant by the phrase "dissociation curve of oxyhæmoglobin"? What is the physiological significance of this curve?
 2. Write a short account of the duodenum from a histological as well as a physiological standpoint.
 3. Describe any form of apparatus which will stimulate a nerve trunk (say, the sciatic of the frog) without producing injury.
 4. Define the terms *enzyme*, *hormone*, *blaze current*, *receptive substance*, *axon reflex*.
 5. How may a fatty acid be distinguished chemically from a fat?
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EDUCATION.

SECOND PAPER.

The Board of Examiners.

1. Contrast the influence of the Sophists with that of Socrates in the history of Greek education.
2. What problem in education propounded by Socrates did Plato and Aristotle seek to solve?
Contrast their solutions.
3. Give the substance of the first chapter of Spencer's work, adding any opinions of your own.
4. Discuss the following statement of Spencer's :—The subject which involves all other subjects, and therefore the subject in which education should culminate, is the Theory and Practice of Education."
5. State and discuss the views advanced by Spencer in his chapter on "Intellectual Education."
6. Give the place that manual training possessed in the thought of Frœbel, and suggest means of realizing his ideas in all grades of our schools.
7. "To make the internal external, and the external internal, to find the unity for both, this is the general external form in which man's destiny is expressed."
Show that here Frœbel furnishes a complete scheme of education, and in particular show how it fits into the successive stages of development.
8. What are some of the views expressed by Frœbel in dealing with the School and the Family?

METALLURGY.—PART I.

FIRST PAPER.

The Board of Examiners.

Candidates should answer **SIX** of the following questions.
Chemical equations must be given wherever possible.

1. Describe, with the aid of sketches, a good type of assay muffle furnace designed for the consumption of long-flaming coal, and a second, similar, furnace designed for the consumption of coke, give reasons for any variations in design.
2. Outline the principal dry methods used for the assay of silver ores, and explain the principles upon which they are based.
3. Explain the action of potassium cyanide, and potassium carbonate—both separately and conjointly—in crucible assays for—(a) tin, and (b) lead. What effect would metallic iron have if present in similar assays? Give chemical equations descriptive of the reactions concerned.
4. Define the terms — “parting,” “inquarting,” “annealing,” “surcharge” (plus and minus), “volatilisation loss,” “cupel absorption loss,” and “slag loss”—as applied to gold and silver assays.
5. Outline a rapid method for the partial analysis of slag produced in smelting silver-lead ores in blast-furnaces, and explain, with the aid of chemical equations, the principal reactions concerned.

6. Outline a reliable method for estimating copper by means of a standard solution of potassium cyanide, including the preliminary separation of the copper from any ore impurities that would otherwise injuriously affect the titration.

What effect would salts of iron, lead, zinc, manganese, and aluminium have if present during the titration ?

7. Describe a rapid method which is sometimes used (for furnace control purposes) for estimating—very approximately—the amount of sulphur present in roasted ore or matte.

METALLURGY.—PART I.

SECOND PAPER.

The Board of Examiners.

Candidates should answer **SIX** of the following questions.

Chemical Equations must be given wherever possible.

1. What are "refractory materials" ? How are they classified, and for what metallurgical purposes are they used ?
2. Explain the terms "intermittent" and "continuous" as applied to (a) hand-worked reverberatory furnaces ; and (b) mechanically-worked reverberatory furnaces.

Give an example of each type, and compare their relative merits and demerits.

3. Write a short paper upon modern developments in copper smelting in reverberatory furnaces.
4. What are the reactions mainly concerned in the "Roast and Reaction" method for treating lead ores, and for what class or classes of ore is the method most suitable?
5. Define the terms "slag" and "matte." How are slags classified?
6. Outline a method suitable for the extraction of zinc from its sulphide ore on a large scale. Explain the principal reactions concerned, and point out in what particulars (if at all) the method you give differs from one suitable for the treatment of zinc carbonate ores.
7. Explain, very briefly, the reactions upon which the various "hyposulphite" methods, for treating silver ores on a large scale, are dependent. For what class or classes of ore are such methods most suitable?

GEOLOGY.—PART I.

The Board of Examiners.

1. Give a short account of the nature, organic and mineralogical composition of coral atolls, and an outline of the important theories as to their mode of origin.

2. Define the following crystallographic terms:—
Form, truncation, law of rational indices, hemihedral, hemimorphic, and state the crystal forms (giving Miller's symbols) present in crystals of garnet, albite, beryl, rutile.
3. Give the chief subdivisions of Dana's classification of the silicates, and quote examples of minerals belonging to each of the subdivisions.
4. Give an account of the geology of the Dandenong area, and especially of the relations of the dacites to the plutonic rocks to the south.
5. Discuss the relative value of different fossil groups to the stratigraphical geologist. What do you understand by "zones," and give examples among Palaeozoic and Mesozoic rocks?
6. Discuss the chemical and mineralogical peculiarities of the intrusive rocks rich in alkalis.
7. Draw sections illustrating the following:—Crust block, trough fault, thrust fault, recumbent anticline, and state the effects produced on the outcrops of beds by dip, strike and reversed faults, respectively.
8. Compare the Permo-carboniferous formations of Victoria and New South Wales. Give a concise account of the lithological character of the Glacial deposits of Victoria and their probable mode of origin.

APPLIED MECHANICS.

FIRST PAPER.

Professor Kernot.

1. Prove that any tangential stress in ordinary materials is accompanied by an equal stress in a plane at right angles to the first. What bearing has this on the arrangement of rivets in plate girders?
 2. Describe, fully, the process of testing a specimen of structural steel, giving the results you would expect including the autographic diagram. How do you account for the oblique or cup-shaped fracture so often seen?
 3. Assuming the specimen tested to be 8 inches long between gauge-points, and 1 square inch sectional area, compute the probable resilience and the average work done per cubic inch of specimen, before fracture, in foot pounds.
 4. A circular obelisk of concrete is 50 feet high, 5 feet diameter at the base, and 3 feet at the top. It is composed of concrete, weighing 150 lbs. per cubic foot. What is its greatest safe resistance to wind-pressure, and what will be the safe resistance of a similar obelisk of double the linear dimensions, but supported on a foundation only 5 feet diameter.
-

APPLIED MECHANICS.

SECOND PAPER.

Professor Kernot.

1. A beam is 30 feet long, and is supported at points 6 and 25 feet from one end. For the first 6 feet it is loaded with a uniform load of 1 ton per foot. In the next 6 feet the load gradually increases from 1 ton per foot to 2 tons per foot, and then ceases. At 18 feet a concentrated load of 10 tons is imposed, while at the far end there is an upward force of 1 ton. Draw to scale moment and shear diagrams, and state what size beam you would use, the material being good ironbark.
 2. Investigate the modulus of section as a beam of a circular tube 20 inches internal diameter $\frac{1}{2}$ inch thick for a quadrant at each side, and 1 inch thick for a quadrant top and bottom.
 3. A suspension bridge consists of a parabolic cable, numerous vertical suspenders, and a stiffening girder hinged at ends and centre. Investigate the moments and shears on the girder while a concentrated load traverses the whole span of the bridge.
 4. Discuss the behaviour of an unhinged circular arch as at Prince's Bridge under varying temperatures, partial loading, and slight yielding of abutments.
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MECHANICAL ENGINEERING.—PART I.

FIRST PAPER.

Professor Kernot.

1. Make a longitudinal and cross section of Siemens' Regenerative Furnace, and describe how it is used for producing open hearth steel. How, in your opinion, does such steel compare with that made by the Bessemer process?
2. Make a neat drawing of an engineer's shaping machine, with a quick return motion, and show the action of the quick return appliance by a diagram in which the abscissa represents time and the ordinate distance of the tool from the starting point of its stroke.
3. It is required to drive an air compressor at the rate of 100 double strokes per minute and the horse power required is 200. There is a stream falling 1,400 feet in half a mile in the vicinity, the supply of water being abundant. Design in outline the machinery you would employ, giving all principal dimensions and computing the quantity of water used.
4. Design a water engine to work a capstan in a dock-yard. The water being supplied at a pressure of 700 lbs. per square inch, and the capstan to exert an effort of 2 tons at 100 feet per minute. State what are the principal difficulties to be met with in such an engine, and how they are to be dealt with.

N.B.—Nothing but the capstan itself may project above the level of the ground.

MECHANICAL ENGINEERING.—PART 1.

SECOND PAPER.

Professor Kerfoot.

1. Discuss fully the improvements made by James Watt in the steam-engine, and state what effect they had on its efficiency. Make a neat sketch, with names of all important parts of Watt's most improved engine.
2. Describe a temperature-entropy diagram, and illustrate its use and its relations to the pressure volume diagram.
3. Make a diagram on the lines of that of Weighton and Leavenworth, showing all losses of energy between the fuel and the useful work done in a winding-engine at a mine.
4. Describe and sketch any appliances you may be acquainted with for intercepting and utilizing of heat that would otherwise have gone up the chimney or exhaust pipe of a non-condensing steam plant. What, in your opinion, is the probable numerical value of the gain in each case?
5. A non-condensing steam-engine, 20 inches diameter and 40 inches stroke, makes 100 revolutions a minute. It is supplied with dry saturated steam at 100 lbs. per square inch above the atmosphere, cut off at $\frac{1}{4}$ -stroke

T

Draw the indicator diagram to scale. Compute the power and consumption of steam, with and without steam jacketing. State whether an earlier cut off would improve the economy; and, if so, how much earlier and by what amount—what is the effect of too early a cut off and also of too late ?

SURVEYING.—PART I. •

FIRST PAPER.

The Board of Examiners.

1. From the following observations made with an aneroid barometer at the three places named, deduce the most probable height of the place "L.J." above sea-level.

Place.	Aneroid Reading.	Temperature F	Barograph at University : Simultaneous Readings.	Height as per Time Table above Sea Level.
Sunbury Railway Station	29·12	67°	29·97	feet. 702
Gisborne Railway Station	28·34	66½°	29·98	1526
L.J. ...	28·77	68°	29·98	?

Give all calculations. State what rules or tables you employ. Explain what assumptions are involved in deducing the required height of L.J., and discuss their reasonableness.

2. Describe the kind of telescope which is used in an engineer's level and theodolite.

Explain the defects that may exist in it, and how these defects may be detected.

3. Prove the principle involved in the test and adjustment which has for its object the placing of the line of collimation in the telescope of a transit theodolite at right angles to the horizontal axis.

4. Explain clearly the effect produced by various errors of adjustment on the work done with a transit theodolite, and explain how these effects may be eliminated by employing certain methods of observation.

SURVEYING.—PART I.

SECOND PAPER.

The Board of Examiners.

1. Fill in the missing figures, and complete the following page of a level-book. Explain the operations to which the figures refer.

Describe the process of testing and adjusting a dumpy level to prepare it for work of the kind referred to.

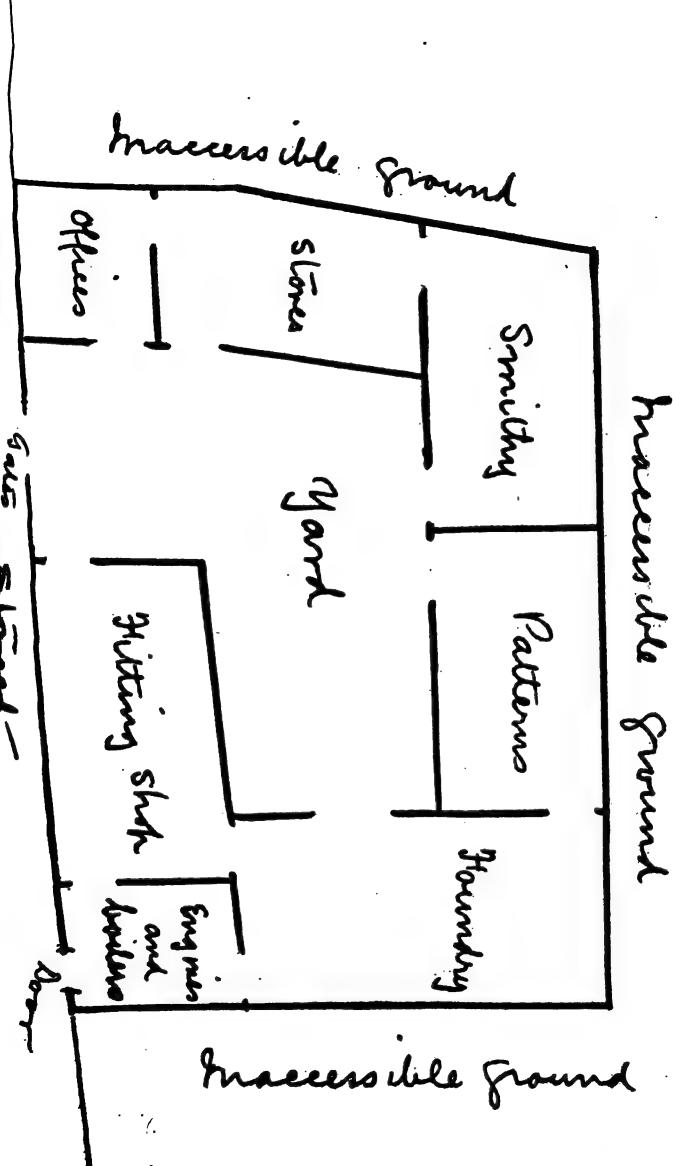
B.S.	I.S.	F.S.	Rise.	Fall.	R.L.	Remarks
3·96					185·66	B.M. No. 1.
					191·27	Shoulder of pile on Pier No. 1 of Viaduct.
2·76		14·96				Change.
					191·27	Shoulder of pile on Pier No. 16 of Viaduct.
		10·80				B.M. No. 2.

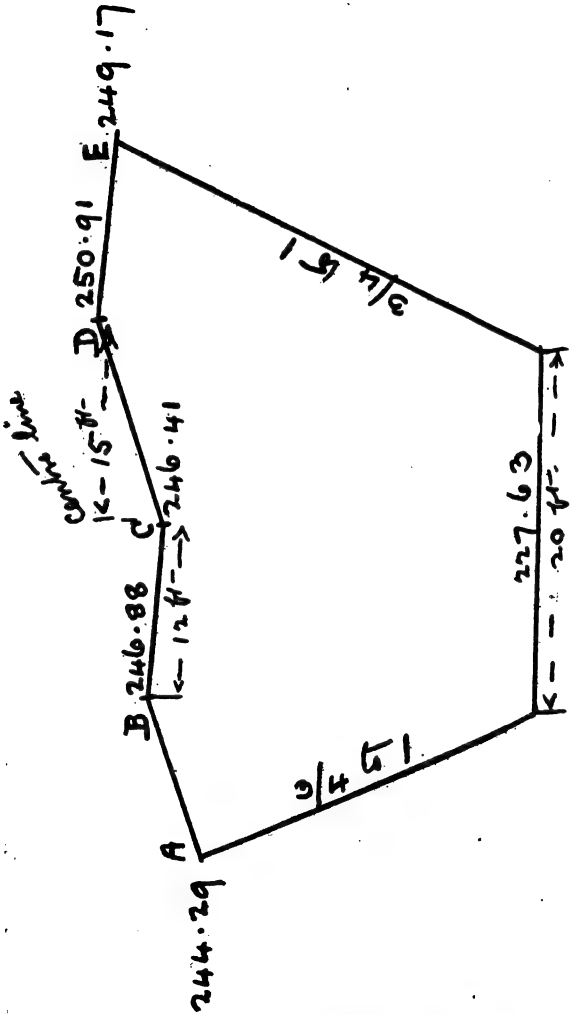
2. Show what lines you would measure when making a chain survey of the engineering workshops on opposite page.

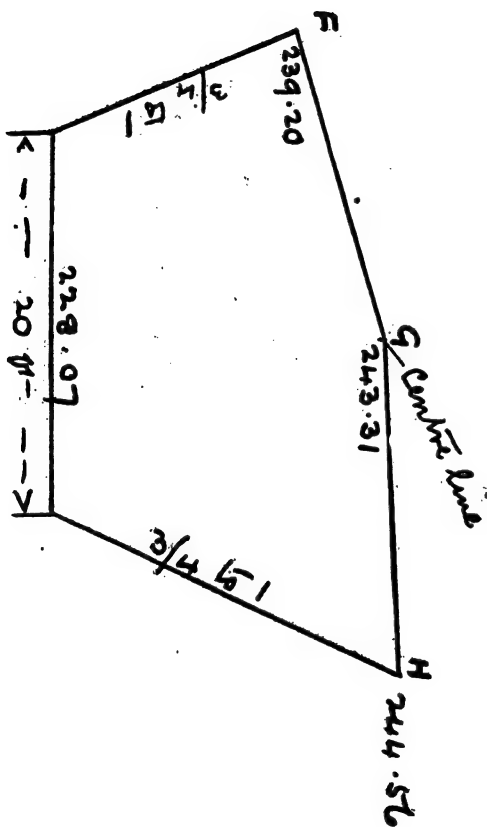
The walls may all be taken as 14 inches thick

Assume no obstacles in the way, other than the walls shown.

3. The sketches, given on pages 294 and 295, represent cross-sections, 1 chain apart, on a straight portion of a railway cutting. The reduced levels at various points are given.







If EH , DH , CH , CG , BG , BF , and AF be joined, the triangles into which the surface is so divided may be treated as planes.

Compute, accurately, the volume of earth contained between the sections.

SURVEYING.—PART II.

FIRST PAPER.

The Board of Examiners.

1. Divide the area, which is shown surrounded by roads on the attached topographic map, into blocks of between 20 and 30 acres each. Give the reasons which influence you in choosing the particular scheme of subdivision which you propose.
2. Explain the principle of the anallatic lens used in certain tacheometers.
3. What curve would you adopt to connect the two proposed straight portions of the railway line marked in red on the accompanying topographic map? Perform the calculations necessary for setting out.

NOTE.—A full answer to Question No. 1 will be considered as possessing half the whole value of the paper; Question No. 2, 20 per cent.; and Question No. 3, 30 per cent.

SURVEYING.—PART II.

SECOND PAPER.

The Board of Examiners.

1. Find the loss of head, through friction, in a length l ft. of wrought-iron riveted pipe, which tapers uniformly from a diameter D ft. to a diameter d ft., the discharge being Q cub. ft. a second.

Apply this to ascertain the error in calculating the loss of head as though it were equal to that in a pipe of uniform diameter $= \frac{1}{2}(D + d)$, and of same length l , using for illustration the values $D = \frac{10}{12}$ ft., $d = \frac{4}{12}$ ft., $l = 6$ ft.

What is the error, in the same case, in assuming the head lost in friction to be equal to that in a pipe $\frac{1}{2}l$ ft. long and of uniform diameter d ft. ?

State what formulæ or tables you make use of.

2. A pipe is to be designed to discharge a minimum quantity of 12.6 cub. ft. of water per second from a certain reservoir. Its axis is vertical at the inlet, and the lip, where the water enters, is in a horizontal plane. The water surface in the reservoir may fall to within 2 feet of the said horizontal plane. What is the least diameter

that the inlet orifice must have in order that the said discharge may be maintained? Give full reasons for your answer.

NOTE.—A full answer to Question No. 1 will be considered to possess twice the value of a full answer to Question No. 2.

SURVEYING.—PART III.

FIRST PAPER.

The Board of Examiners.

1. Find the time of elongation of some of the following stars on the night of November the 19th, this year; the place of observation being the observatory at the Engineering School. Assume the latitude of the said observatory to be $37^{\circ} 48'$ S. and the longitude 9h. 39m. 50s. E.

Find the altitude of each star at the time of elongation, also its magnetic bearing, the declination of the compass being $8^{\circ} 21'$ E.

Explain, fully, how you would test and adjust the theodolite before using it to find the direction of the meridian by observations of the said stars. The theodolite has no bubble-tube on the telescope; there is one on the vernier arm for the vertical circle, and another, at right angles to the first, on the upper horizontal plate.

The Nautical Almanac shows that the sidereal time at mean noon at Greenwich, on the day of the proposed observations, is 15h. 50m. 25s.

Say which stars you would prefer to observe, and why.

Star.	Magni- tude.	For 19th Nov., 1906.					
		Right Ascension.			Declination S.		
		h.	m.	s.	°	'	"
θ Eridani ...	3.0	2	54	45	40	40	47
γ Hydri ...	3.1	3	48	45	74	31	35
α Horologii...	3.8	4	10	56	42	31	29
α Reticuli ...	3.4	4	13	16	62	42	28
α Doradus ...	3.5	4	32	1	55	14	17
β Doradus ...	3.7	5	32	51	62	33	0
α Argus (Canopus)	-1.0	6	21	54	52	38	33
ν Argus ...	3.2	6	34	56	43	6	43
α Pictoris ...	3.3	6	47	16	61	50	18
β Arae ...	2.7	17	17	30	55	26	29
θ Scorpii ...	2	17	30	35	42	56	17
η Pavonis ...	3.5	17	36	31	64	40	48
α Telescopii...	3.7	18	20	1	46	1	13
α Coronae Australis	4.2	19	3	6	38	3	2
ι Sagittarii...	4.1	19	48	48	42	6	54
α Pavonis ...	2	20	18	14	57	2	14
α Indi ...	3.2	20	30	59	47	37	10
α Gruis ...	1.9	22	2	21	47	24	59
α Toucani ...	2.9	22	12	6	60	43	44
β Gruis ...	2.1	22	37	6	47	22	33
β Hydri	2.9	0	20	54	77	47	4
α Phoenicis...	2.4	0	21	41	42	48	56
β Phoenicis...	3.4	1	1	56	47	13	17
γ Phoenicis...	3.3	1	24	20	43	47	56
α Eridani (Achernar)	0.5	1	34	16	57	42	50

SURVEYING.—PART III.

SECOND PAPER.

The Board of Examiners.

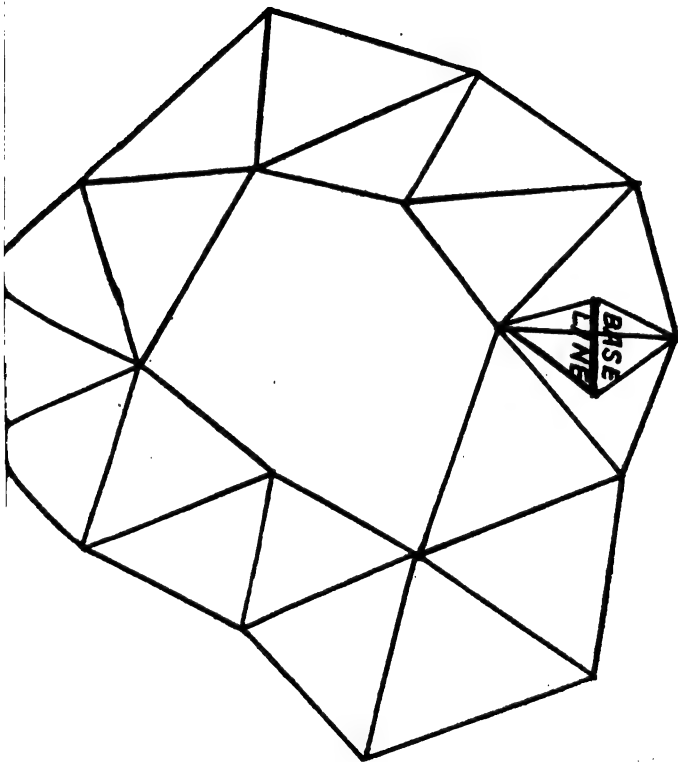
1. How would you test and adjust the trigonometrical survey shown in sketch on opposite page?
2. Lay out a town site, of about three-quarters of a square mile in area, at or near the point marked *A* on the accompanying topographic map of a mining district. Formation may be assumed to be Lower Silurian.

Give full reasons for your choice of plan.

Existing roads are shown in black ink. A railway line is shown in red pencil. Creeks in blue pencil.

What water-way would you provide at the town bridges over the main creek, assuming the catchment area above the town site to be 20 square miles? Moderate rainfall, as in Victoria.

The catchment area in the case of the branch, which joins the main creek to the S.E. of *A*, is about 7 square miles.



CIVIL ENGINEERING.—PART I.

FIRST PAPER.

The Board of Examiners.

It is required to bridge, temporarily, an opening of 60 feet by means of a trussed oregon beam. Beams, of any transverse dimensions up to 24" x 22", are readily obtainable in lengths of over 60 feet. Head-room being limited, it is decided to keep the centre of the steel tension-rod at mid-span, 5 feet from centre of beam. Intermediate struts are to be used, midway between centre and ends, the bottoms of all three struts being on an arc of a circle passing through the ends of the beam. See outline sketch B on pages 305-6.

The moving load on the beam is 10 tons, and it may be regarded as applied at a point.

Compute the necessary dimensions of the beam and tension rods, giving all calculations, and explain the reasoning upon which your calculations are based.

Give all details, such as you would put into the hands of the carpenters and blacksmiths who will construct the structure.

Outline sketch of trussed oregon beam, 60 feet span. Full lines show centre lines of beam, struts, and tension rods. Dotted lines indicate approximate positions of beams and struts.

CIVIL ENGINEERING.—PART I.

SECOND PAPER.

The Board of Examiners.

1. Design a re-inforced concrete floor to carry 5 cwt. per square foot, distributed over any part, or the whole, of it. Two-wheeled carts, weighing 2 tons gross, may travel over any part of the floor which is not otherwise loaded at the time.

Wheel-gauge of cart = 5' 3".

Area of floor = 100 feet \times 70 feet.

The pillars, which support the floor, are to be spaced not less than 12 feet apart, centre to centre. Design these pillars, assuming them to be 14 feet high from their bases to the bottoms of the floor beams.

Compare round with square pillars.

State fully the reasoning on which your design is based.

2. The sketch A, appearing on pages 305-6, shows a cross-section of a river valley on the centre line of a proposed railway. The ordinary water-channel and part of the adjoining flat are to be bridged over.

It has been decided that the total width of water-way shall be 200 feet.

Suggest a type of bridge suitable place, the bridge being designed for a line of railway, 4' 8½" gauge.

The navigation of the river is unimportant that there is no restriction as to the piers.

The mean velocity of the stream, when lowest, is about 2 feet a second. The velocity in the channel, during floods, is 5 feet a second.

Describe the process of placing the foundations of the abutments and piers which you propose for the case.

Show how you would provide for expansion and contraction in the event of your recommending iron or steel girders.

Give, fully, the reasons which influence your choice of type.

Sketch

O. ris

level

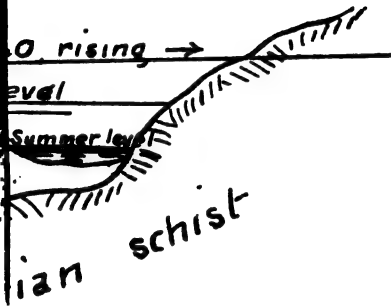
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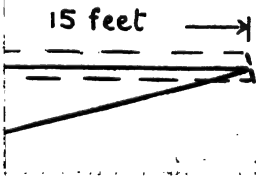
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305-6

Sketch A.



Sketch B.



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ANNUAL EXAMINATION, DECEMBER, 1906.

GREEK.—PART I. (TRANSLATION OF
PREPARED BOOKS.)*The Board of Examiners.*

1. Translate, with brief notes (in the margin) where you think them desirable—

- (a) ΗΦ. ὄραν ταῦτ' ἀνάγκη, μηδὲν ἐγκέλευ' ἄγαν.
 ΚΡ. ἦ μὴν κελεύσω, κάπιθώζω γε πρὸς.
 χώρει κάτω, σκέλη δὲ κίρκωσον βία.
 ΗΦ. καὶ δὴ πέπρακται τοῦργον οὐ μακρῶ πόνῳ.
 ΚΡ. ἐρρωμένως νῦν θεῖνε διατόρους πέδας,
 ὡς οὐκιτιμητῆς γε τῶν ἔργων βαρῦς.
 ΗΦ. ὅμοια μορφῇ γλῶσσά σου γηρύεται.
 ΚΡ. σὺ μαλθακίζου, τὴν δ' ἐμὴν ἀνθαδῖαν
 ὀργῆς τε τραχύτητα μὴ 'πίπλησέ μοι.
 ΗΦ. στείχωμεν, ὡς κώλοισιν ἀμφίβληστρ' ἔχει.
 ΚΡ. ἐνταῦθά νυν ὕβριζε, καὶ θεῶν γέρα
 συλῶν ἐφημέροισι προστίθει. τί σοι
 οἰοί τε θνητοὶ τῶνδ' ἀπαντλήσαι πόνων ;
 ψευδωνύμως σε δαίμονες Προμηθέα
 καλοῦσιν· αὐτὸν γὰρ σὲ δεῖ Προμηθέως,
 ὅτῳ τρόπῳ τῆσδ' ἐκκυλισθήσει τέχνης.
- (b) ἀλλ' αὐτὰ σιγῶ· καὶ γὰρ εἰδύιαισιν ἂν
 ὑμῖν λέγοιμι. τὰν βροτοῖς δὲ πῆματα
 ἀκούσαθ', ὡς σφᾶς νηπίους ὄντας τὸ πρὶν
 ἔννοους ἔθηκα καὶ φρενῶν ἐπηβόλους.

λέξω δὲ, μέμψιν οὔτιν' ἀνθρώποις ἔχων,
 ἀλλ' ὧν δέδωκ' εὐνοίαν ἐξηγούμενος·
 οἱ πρῶτα μὲν βλέποντες ἔβλεπον μάτην,
 κλύοντες οὐκ ἤκουον· ἀλλ' ὄνειράτων
 ἀλίγκιοι μορφαῖσι τὸν μακρὸν χρόνον
 ἔφυρον εἰκῆ πάντα, κοῦτε πλινθυφεῖς
 δόμους προσείλους ἦσαν, οὐ ξυλουργίαν·
 κατῶρυχες δ' ἔναιον, ὥστ' ἀήσυροι
 μύρμηκες, ἀντρων ἐν μυχοῖς ἀνηλίοις.
 ἦν δ' οὐδὲν αὐτοῖς οὔτε χερίματος τέκμαρ,
 οὔτ' ἀνθεμώδους ἦρος, οὔτε καρπίμου
 θέρους βέβαιον, ἀλλ' ἄτερ γνώμης τὸ πᾶν
 ἔπρασσον, ἕς τε δὴ σφιν ἀντολᾶς ἐγὼ
 ἄστρον ἔδειξα τὰς τε δυσκρίτους δύνσεις.

- (c) μηδ' ἀμ' ὁ πάντα νέμων
 θεῖτ' ἐμᾶ γνώμα κράτος ἀντίπαλον Ζεύς,
 μηδ' ἐλινύσαιμι θεοὺς ὀσίαις θοίμαις ποτινισσομένα
 βουφόνοις παρ' Ὀκεανοῦ πατρὸς ἄσβεστον πόρον,
 μηδ' ἀλίτοιμι λόγοις·
 μάλα μοι τοῦτ' ἐμμένοι
 καὶ μήποτ' ἔκτακείη.
 ἀδύ τι θαρσαλείαις
 τὸν μακρὸν τείνειν βίον ἐλπίσι, φανυῖς
 θυμὸν ἀλδαίνουσαν ἐν εὐφροσύναις· φρίσσω δέ σε δερ-
 κομένα
 μυρίοις μόχθοις διακναιόμενον * * *
 Ζῆνα γὰρ οὐ τρομέων
 ἰδίᾳ γνώμα σέβει
 θνητοὺς ἄγαν, Προμηθεῦ.

2. Comment on—μή μου προκήδου μᾶσσον ὡς ἐμοὶ
 γλυκύ—βούκολος δὲ γηγενῆς ἄκρατος ὄργην Ἄργος
 —γῆν πρὸ γῆς ἐλαύνομαι—Μολοσσὰ δάπεδα—
 Πελασγία—οἱ προσκνυοῦντες τὴν Ἀδράστειαν
 σοφοί.

3. (a) Discuss the geography of Æschylus as revealed in the *Prometheus*.
- (b) Write a brief essay on the story of Prometheus and its probable development.
4. Give a short sketch of the characters of, and part played in the Proem by, Cephalus, Thrasymachus, Glaucon.
5. Translate, with notes as above—

(a) Πάνυ μὲν οὖν, ἦν δ' ἐγώ. ἀλλά μοι ἔτι τοσόνδε εἰπέ· τί μέγιστον οἶει ἀγαθὸν ἀπολελευκέναι τοῦ πολλὴν οὐσίαν κεκτηῆσθαι; "Ὁ, ἦ δ' ὦς, ἴσως οὐκ ἂν πολλοὺς πείσαιμι λέγων. εὖ γὰρ ἴσθι, ἔφη, ὦ Σώκρατες, ὅτι ἐπειδάν τις ἐγγυς ἢ τοῦ οἰεσθαι τελευτήσῃν, εἰσέρχεται αὐτῷ δέος καὶ φροντίς περὶ ὧν ἔμπροσθεν οὐκ εἰσήει. οἳ τε γὰρ λεγόμενοι μῦθοι περὶ τῶν ἐν Ἀΐδου, ὡς τὸν ἐνθάδε ἀδικήσαντα δεῖ ἐκεῖ διδόναι δίκην, καταγελῶμενοι τέως, τότε δὴ στρέφουσιν αὐτοῦ τὴν ψυχὴν μὴ ἀληθεῖς ὄσιν, καὶ αὐτὸς ἦτοι ὑπὸ τῆς τοῦ γήρωσ ἀσθενείας ἢ καὶ ὥσπερ <εἰ> ἤδη ἐγγυτέρω ὧν τῶν ἐκεῖ μᾶλλον τι καθορᾶ αὐτά, ὑποψίας δ' οὖν καὶ δείματος μεστὸς γίγνεται καὶ ἀναλογίζεται ἤδη καὶ σκοπεῖ, εἴ τινὰ τι ἠδίκηκεν.

(b) Βαβαί, ἦν δ' ἐγώ, ὦ φίλε Γλαύκων, ὡς ἐρρωμένως ἐκότερον ὥσπερ ἀνδριάντα εἰς τὴν κρίσιν ἐκαθαίρεις τοῖν ἀνδροῖν. Ὡς μάλιστ', ἔφη, δύναμαι. ὄντιον δὲ τοιούτοιον, οὐδὲν ἔτι, ὡς ἐγῶμαι, χαλεπὸν ἐπεξελεθεῖν τῷ λόγῳ, οἷος ἐκότερον βίος ἐπιμένει. λεκτέον οὖν· καὶ δὴ κἂν ἀγροικότερος λέγηται, μὴ ἐμὲ οἶον λέγειν, ὦ Σώκρατες, ἀλλὰ τοὺς ἐπαινοῦντας πρὸ δικαιοσύνης ἀδικίαν. ἐροῦσι δὲ τάδε, ὅτι οὕτω διακείμενος ὁ δίκσιος μαστιγώσεται, στρεβλώσεται, δεδῆσεται, ἐκκαυθήσεται τῷ φθαλμῷ, τελευτῶν πάντα

κακὰ παθῶν ἀνασχινδύλευθήσεται καὶ γνώσεται, ὅτι οὐκ εἶναι δίκαιον ἀλλὰ δοκεῖν δεῖ ἐθέλειν· τὸ δὲ τοῦ Αἰσχύλου πολὺ ἦν ἄρα ὀρθότερον λέγειν κατὰ τοῦ ἀδίκου.

- (c) οἱ δὲ αὐτοὶ οὗτοι λέγουσιν, ὡς εἰσὶν οἴοι θυσίαις τε καὶ εὐχολαῖς ἀγανῆσιν καὶ ἀναθήμασιν παράγεσθαι ἀναπειθόμενοι· οἷς ἢ ἀμφοτέρα ἢ οὐδέτεμα πειστέον· εἰ δ' οὖν πειστέον, ἀδικητέον καὶ θυτέον ἀπὸ τῶν ἀδικημάτων. δίκαιοι μὲν γὰρ ὄντες ἀζήμιοι μὲν ὑπὸ θεῶν ἐσόμεθα, τὰ δ' ἐξ ἀδικίας κέρδη ἀπώσομεθα· ἀδικοὶ δὲ κερδανουόμεν τε καὶ λισσόμενοι ὑπερβαίνοντες καὶ ἀμαρτάνοντες πείθοντες αὐτοὺς ἀζήμιοι ἀπαλλάξομεν. ἀλλὰ γὰρ ἐν Ἀιδου δίκην δώσομεν ὧν ἂν ἐνθάδε ἀδικήσωμεν, ἢ αὐτοὶ ἢ παῖδες παίδων.

6. Translate, with notes on grammatical peculiarities—

- (a) ἐλεεῖσθαι οὖν ἡμᾶς πολὺ μᾶλλον εἰκός ἐστίν που ὑπὸ ὑμῶν τῶν δεινῶν ἢ χαλεπαίνεσθαι.
- (b) νῦν, ἦν δ' ἐγώ, ἔμαθον ὃ λέγεις.
- (c) πρὸς ταῦτα κακούργει καὶ συκοφάντει; εἰ τι δύνασαι οὐδέν σου παρίεμαι· ἀλλ' οὐ μὴ οἶός τ' ἦς.
- (d) τούτων δὲ πάντων οἱ περὶ θεῶν τε λόγοι καὶ ἀρετῆς θαυμασιώτατοι λέγονται, ὡς ἄρα καὶ θεοὶ πολλοῖς μὲν ἀγαθοῖς δυστυχίας τε καὶ βίον κακὸν ἔνειμαν, τοῖς δ' ἐναντίοις ἐναντίαν μοῖραν.
- (e) Οὐκοῦν, ἦν δ' ἐγώ, τὸ λεγόμενον, ἀδελφὸς ἀνδρὶ παρείη.

LATIN.—PART I. (TRANSLATION OF
PREPARED BOOKS.)

The Board of Examiners.

1. Translate, with brief notes (in the margin) where you think them called for—

(a) Quod superest, ubi pulsam hiemem Sol
aureus egit

Sub terras caelumque aestiva luce reclusit,
Illae continuo saltus silvasque peragrant
Purpureosque metunt flores et flumina libant
Summa leves. Hinc nescio qua dulcedine
laetae

Progeniem nidosque fovent, hinc arte recentis
Excudunt ceras et mella tenacia fingunt.

Hinc ubi iam emissum caveis ad sidera caeli
Nare per aestatem liquidam suspexeris agmen
Obscuramque trahi vento mirabere nubem,
Contemplator.

(b) Saepe etiam duris errando in cotibus alas
Attrivere, ultroque animam sub fasce dedere :
Tantus amor florum et generandi gloria mellis.
Ergo ipsas quamvis angusti terminus aevi
Excipiat (neque enim plus septima ducitur
aestas),

At genus immortale manet multosque per
annos

Stat Fortuna domus et avi numerantur avorum.

(c) Exiguus primum atque ipsos contractus ad
usus

Eligitur locus ; hunc angustique imbrice tecti
Parietibusque premunt artis et quattuor
addunt

Quattuor a ventis obliqua luce fenestras.

Tum vitulus bima curvans iam cornua fronte
 Quaeritur; huic geminae nares et spiritus oris
 Multa reluctanti obstruitur, plagisque perempto
 Tunsæ per integram solvuntur viscera pellem.

2. Explain — aërii mellis—numina laeva — Phrygiae
 Idae—mella durum Bacchi domitura saporem—
 biferi rosaria Paesti—siletur in noctem—Medus
 Hydaspes—esse apibus partem divinae mentis et
 haustus aetherios dixere—animas in vulnere
 ponunt—defruta — Cecropium thymum—leves
 Parthi — manibus Procne pectus signata
 cruentis.
3. State the exact meaning of the words italicised in
liquidi fontes—graviter spirantis thymbrae—
raras superinice frondes—fractos sonitus imitata
tubarum—horridus desidia—niger Galaesus—
eduram pirum—fessos sopor suos occupat artus.
4. Translate, with notes as above—
- (a) contracta pisces aequora sentiunt
 iactis in altum molibus; huc frequens
 caementa demittit redemptor
 cum famulis dominusque terrae
 fastidiosus. sed Timor et Minae
 scandunt eodem, quo dominus, neque
 decedit aerata triremi et
 post equitem sedet atra Cura.
 quod si dolentem nec Phrygius lapis
 nec purpurarum sidere clarior
 delenit usus nec Falerna
 vitis Achaemeniumque costum,
 cur invidendis postibus et novo
 sublime ritu moliar atrium?
 cur valle permutem Sabinæ
 divitias operosiores?

(b) Quantum distet ab Inacho

Codrus pro patria non timidus mori
 narras et genus Aeaci
 et pugnata sacro bella sub Ilio :
 quo Chium pretio cadum
 mercemur, quis aquam temperet ignibus,
 quo praebente domum et quota
 Paelignis caream frigoribus, taces.

(c) eradenda cupidinis

pravi sunt elementa et tenerae nimis
 mentes asperioribus
 formandae studiis. nescit equo rudis
 haerere ingenuus puer
 venarique timet, ludere doctior,
 seu Graeco iubeas trocho
 seu malis vetita legibus alea.

5. Explain—cenae sine aulacis et ostro — si ture placaris et horna fruge Lares—Socraticis madet sermonibus—Maecenas, equitum decus—capitis minor—pharetratos Gelonos—Philippis versa acies retro—descendat in Campum petitor.

6. Give the exact sense (or senses) of—pius—arbusta—rudis—purpureus—ferox—lyra—cyathus—pauperies—regum apices.

7. Discuss briefly the merits and the originality of Horace as a writer of lyrics.

8. Translate, with notes as above—

(a) Simul crescit inopia omnium longa obsidione et minuitur expectatio externae opis, cum tam procul Romani, unica spes, circa omnia hostium essent. paulisper tamen adfectos animos recreavit

repentina profectio Hannibalis in Oretanos Carpetanosque, qui duo populi dilectus acerbitate consternati, retentis conquisitoribus metum defectionis cum praebuissent, oppressi celeritate Hannibalis omiserunt mota arma. nec Sagunti oppugnatio segnior erat, Maharbale Himilconis filio—eum praefecerat Hannibal—ita inpigre rem agente, ut ducem abesse nec cives nec hostes sentirent.

(b) Taetra ibi luctatio erat via lubrica glacie non recipiente vestigium et in prono citius pedes fallente, ut, seu manibus in adsurgendo seu genua se adiuvisent, ipsis adminiculis prolapsis iterum corruerent; nec stirpes circa radicesve, ad quas pede aut manu quisquam eniti posset, erant; ita in levi tantum glacie tabidaque nive volubantur. iumenta secabant interdum etiam infimam ingredientia nivem, et prolapsa iactandis gravius in conitendo unguis penitus perfringebant, ut pleraque velut pedica capta haerent in dura et alte concreta glacie.

(c) Erat forte brumae tempus et nivalis dies in locis Alpibus Appenninoque interiectis, propinquitate etiam fluminum ac paludium praegelidis. ad hoc raptim eductis hominibus atque equis non capto ante cibo, non ope ulla ad arcendum frigus adhibita, nihil caloris inerat, et quidquid aurae fluminis adpropinquabant, adflabat acrior frigoris vis. ut vero refugientes Numidas insequentes aquam ingressi sunt—et erat peccatoribus tenuis aucta nocturno imbri,—tum utique egressis rigere omnibus corpora, ut vix armorum tenendorum potentia essent, et simul lassitudine et procedente iam die fame etiam deficere.

9. Translate with notes on grammatical difficulties—
- (a) Circumscribit includitque nos terminis montium fluminumque quos non excedamus.
 - (b) Locum insidiis circumspectare.
 - (c) Vestitus nihil inter aequales excellens.
 - (d) Munimento ad tempus.
 - (e) Exercitum in reficiendo maxime sentientem contracta ante mala.
 - (f) Haud dubia res visa, quin per invia circa nec trita antea quamvis longo ambitu circumduceret agmen.
10. Explain—
- (a) Sardos Corsosque et Histros atque Illyrios lacesse magis quam exercuisse Romana arma.
 - (b) Lectisternium Caere, ubi sortes attenuatae.
11. Explain — sublatis armamentis; occidente iam sidere Vergiliarum; Iuppiter Latiaris; bello integro; nomen Latinum; stipendium; subinde.
12. Indicate on a rough map the positions of the rivers Padus, Ticinus, Trebia, also Victumulae, Augusta Taurinorum, Placentia, Mutina, the Boii and Insubres.

LATIN.—PART II. (TRANSLATION OF
PREPARED BOOKS.)

The Board of Examiners.

1. Translate, with notes in the margin where you think them needed—

- (a) Corpora sunt porro partim primordia rerum, partim concilio quae constant principiorum. sed quae sunt rerum primordia, nulla potest vis stinguere; nam solido vincunt ea corpore demum.

etsi difficile esse videtur credere quicquam in rebus solido reperiri corpore posse. transit enim fulmen caeli per saepta domorum, clamor ut ac voces; ferrum candescit in igni dissiliuntque fero ferventia saxa vapore; tum labefactatus rigor auri solvitur aestu; tum glacies aeris flamma devicta liquescit; permanat calor argentum penetratque frigus, quando utrumque manu retinentes pocula rite sensimus infuso lympharum rore superne. usque adeo in rebus solidi nil esse videtur.

- (b) “At saepe in magnis fit montibus” inquis
“ut altis

arboribus vicina cacumina summa terantur inter se, validis facere id cogentibus austris, donec flammai fulserunt flore coorto.” scilicet et non est lignis tamen insitus ignis, verum semina sunt ardoris multa, terendo quae cum confluxere, creant incendia silvis. quod si facta foret silvis abscondita flamma, non possent ullum tempus celarier ignes, conficerent volgo silvas, arbusta cremarent.

2. Translate (as above)—

- (a) Mollis inertia cur tantam diffuderit imis
 Oblivionem sensibus,
 Pocula Lethaeos ut si ducentia somnos
 Arente fauce traxerim,
 Candide Maecenas, occidis saepe rogando :
 Deus, Deus nam me vetat
 Inceptos, olim promissum carmen, iambos
 Ad umbilicum adducere.
 Non aliter Samio dicunt arsisse Bathyllo
 Anacreonta Teïum,
 Qui persaepe cava testudine flevit amorem
 Non elaboratum ad pedem.
- (b) Interdum speciosa locis morataque recte
 Fabula nullius Veneris, sine pondere et arte,
 Valdius oblectat populum meliusque moratur
 Quam versus inopes rerum nugaeque canorae.
 Graiis ingenium, Graiis dedit ore rotundo
 Musa loqui, praeter laudem nullius avaris.
 Romani pueri longis rationibus assem
 Discunt in partes centum diducere. Dicat
 Filius Albin, " Si de quincunce remota est
 Uncia, quid superat?" Poteras dixisse,
 "Triens." "Eu!"
 Rem poteris servare tuam. Redit uncia, quid
 fit?"
 "Semis."
- (c) Et tragicus plerumque dolet sermone pedestri
 Telephus et Peleus, cum pauper et exsul uterque
 Proicit ampullas et sesquipedalia verba,
 Si curat cor spectantis tetigisse querella.

3. Translate (as above)—

- (a) Noster autem status est hic : apud bonos iidem
 sumus, quos reliquisti, apud sordem urbis et

faciem multo melius nunc, quam *cum* reliquisti : nam et illud nobis non obest, videri nostrum testimonium non valuisse : missus est sanguis invidiae sine dolore, atque etiam hoc magis, quod omnes illi fautores illius flagitii rem manifestam illam redemptam esse a iudicibus confitentur ; accedit illud, quod illa contionalis hirudo aerarii, misera ac ieiuna plebecula, me ab hoc Magno unice diligi putat, et hercule multa et iucunda consuetudine coniuncti inter nos sumus, usque eo, ut nostri isti commissatores coniurationis, barbatuli iuvenes, illum in sermonibus Cn. Ciceronem appellent.

- (b) In tribunis pl. designatis reliqua spes est ; quam si exspectaro, non erit, quod putes me causae meae, voluntati meorum defuisse. Quod me saepe accusas, cur hunc meum casum tam graviter feram, debes ignoscere, cum ita me afflictum videas, ut neminem umquam nec videris nec audieris. Nam quod scribis te audire me etiam mentis errore ex dolore adfici, mihi vero mens integra est. Atque utinam tam in periculo fuisset ! cum ego iis, quibus meam salutem carissimam esse arbitrabar, inimicissimis crudelissimisque usus sum, qui, ut me paulum inclinari timore viderunt, sic impulerunt, ut omni suo scelere et perfidia abuterentur ad exitium meum.

4. Translate, with explanatory notes—

- (a) Tribuni non tam aerati quam, ut apellantur, aerarii.

(b) Quaeres scilicet κατὰ τὸ κηδεμονικὸν et ad me ab eo quasi ὑποθήκας adferes, quem ad modum me geram; aliquid ex eius sermone poterimus περὶ τῶν ὄλων suspicari.

(c) Dignitatis ἄλις, tamquam δρῶς.

(d) Nam et stipendium Caesari decretum est et decem legati, et ne lege Sempronia succederetur, facile perfectum est.

5. Write short grammatical notes on—

- (a) Dum veritus est. (b) Viximus, floruimus.
 (c) Quod si conficitur negotium, omnia consequemur. (d) Nam si spes inveterarit, actum est. (e) Id ei perpetua oratione contigit.
 (f) Neque ullius beneficii certum nomen peto.
 (g) Qui istinc veniunt, superbiam tuam accusant, quod negent te percontantibus respondere.

6. Indicate in a rough map the positions of—Upper and Lower Germany—Colonia Agrippina—the Lingones—the Cottian and Pennine Alps—Forum Julii — Albintimilium — Rhaetia — Noricum.

7. Explain fully—cohortes alaeque—septima decuma cohors—cohors togata—legatus—procurator—praefectus legionis — speculator — Tiberinus amnis—optio—vacationes.

8. Comment on—vir facundus et pacis artibus—linguae feroces—exsolutorum promisit, rem haud dubie utilem—non tamen quies urbi redierat—locum castris capere—saepe honestas rerum causas, ni iudicium adhibeas, perniciosi exitus consequuntur.

9. Translate, with notes, and pointing out non-Ciceronian words or constructions—

(a) Quarta pars manipuli sparsa per commeatus aut in ipsis castris vaga, dum mercedem centurioni exsolveret, neque modum oneris quisquam neque genus quaestus pensi habebat: per latrocinia et raptus aut servilibus ministeriis militare otium redimebant. tum locupletissimus quisque miles labore ac saevitia fatigari donec vacationem emeret. ubi sumptibus exhaustus socordia insuper elanguerat, inops pro locuplete et iners pro strenuo in manipulum redibat; ac rursus alius atque alius eadem egestate ac licentia corrupti ad seditiones et discordias et ad extremum bella civilia ruebant.

(b) Non fallebat duces impetus militum, sed bellantibus aliis placuit expectari. bellum ruere in victores victosque, numquam solida fide coalescere; nec referre, Vitellium an Othonem superstitem fortuna faceret. rebus secundis etiam egregios duces insolescere: discordiam his, ignaviam, luxuriam; et suismet vitiis alterum bello, alterum victoria periturum. igitur arma in occasionem distulere, Vespasianus Mucianusque nuper, ceteri olim mixtis consiliis; optimus quisque amore rei publicae, multos dulcedo praedarum stimulabat, alios ambiguae domi res.

GREEK.—PART I. (COMPOSITION AND
UNSEEN TRANSLATION.)

The Board of Examiners.

1. Translate into Greek Prose—

When the Greeks lost heart at the sight of the multitude of their enemies, a brave Phokæan (Φωκaiεύς), named Dionysius, promised them victory if they would obey his commands. The Ionians obeyed, and during seven days Dionysius made them practise (μελετάω) for the battle all the day till night. But on the eighth day, such was their indolence (ῥαθυμία) and love of pleasure that they left the ships, and lay down under the trees in the island. In the meantime, in accordance with the commands of the Persian generals, the tyrants were trying to persuade the leaders of the Ionians to desert, when the battle should be fought, promising them that the king of Persia would pardon them ; and the Persians, thinking that the tyrants had succeeded, ordered the Phœnicians to attack at once. The Greeks, were, however, again on board their ships ; but when they were about to make a last struggle for freedom, a shameful thing befel. Before a blow was struck, forty-nine out of the sixty ships of the Samians sailed away.

2. Translate accurately into good English—

ἔπειτα δὲ κατεστρατοπεδεύσατο τῷ μὲν πεζῷ ἐπὶ
λόφῳ ἀπέχοντι τῆς πόλεως ὡς πέντε στάδια, πρὸ τῆς
χώρας ὄντι, ὅπως ἀποτέμνοιτο ἐντεῦθεν, εἴ τις ἐπὶ
τὴν χώραν τῶν Κορκυραίων ἐξίῃ· τὸ δὲ ναυτικὸν εἰς

τάπι θάτερα τῆς πόλεως κατεστρατοπέδευσεν, ἔνθεν ᾤετ' ἂν τὰ προσπλέοντα καὶ προαισθάνεσθαι καὶ διακωλύειν. πρὸς δὲ τούτοις καὶ ἐπὶ τῷ λιμένι, ὁπότε μὴ χειμῶν κωλύοι, ἐφώρμει. ἐπολιόρκει μὲν δὴ οὕτω τὴν πόλιν. ἐπεὶ δ' οἱ Κορκυραῖοι ἐκ μὲν τῆς γῆς οὐδὲν ἐλάμβανον διὰ τὸ κρατεῖσθαι κατὰ γῆν, κατὰ θάλατταν δ' οὐδὲν εἰσήγετο αὐτοῖς διὰ τὸ ναυκρατεῖσθαι, ἐν πολλῇ ἀπορίᾳ ἦσαν. καὶ πέμποντες πρὸς τοὺς Ἀθηναίους βοηθεῖν ἑ' ἐδέοντο καὶ ἐδίδασκον ὡς μέγα μὲν ἀγαθὸν ἀποβάλοιεν ἂν, εἰ Κορκύρας στερηθεῖεν, τοῖς δὲ πολεμίοις μεγάλην ἂν ἰσχὺν προσβάλοιεν· ἐξ οὐδεμιᾶς γὰρ πόλεως πλήν γ' Ἀθηνῶν οὔτε ναῦς οὔτε χρήματα πλείονα ἂν γενέσθαι.

LATIN.—PART I. (COMPOSITION AND
UNSEEN TRANSLATION.)

The Board of Examiners.

1. Translate into Latin—

Greece was saved, but the general who had saved it perished miserably. Miltiades had been twenty years a tyrant, and he now wished to employ the forces of Athens like a tyrant instead of a citizen. He persuaded the people to give him command of a fleet, without telling them for what purpose; and out of private enmity he attacked the island of Paros. But as the Parians made a desperate defence, Miltiades found that he could do nothing. At last a priestess, wishing to betray the city, sent word to Miltiades to come secretly to her temple. Miltiades tried to climb into the temple by night, but fell and wounded his leg. And now, after twenty-six

days' command, he returned to Athens with nothing done. He was accused of deceiving the people, and was sentenced to pay a heavy fine. His property being in the hands of the Persians, he could pay nothing, and, his wound mortifying, he died in dishonour.

2. Translate accurately into good English—

Dum haec Veii agebantur, interim arx Romae Capitoliumque in ingenti periculo fuit. Namque Galli, seu vestigio notato humano, qua nuntius a Veii pervenerat, seu sua sponte animadverso saxorum ascensu aequo, nocte sublustri, cum primo inermem, qui temptaret viam, praemisissent, sublevantes in vicem et trahentes alii alios, prout postularet locus, tanto silentio in summum evasere ut non custodes solum fallerent sed ne canes quidem—sollicitum animal ad nocturnos strepitus—excitarent. Anseres non fefellerent, quibus sacris Iunonis in summa inopia cibi tamen abstinebatur: quae res saluti fuit: namque clangore eorum alarumque crepitu excitus M. Manlius, qui triennio ante consul fuerat, vir bello egregius, armis arreptis vadit et, dum ceteri trepidant, Gallum, qui iam in summo constiterat, umbone ictum deturbat. Cuius casus cum proximos sterneret, trepidantes alios armisque omissis saxa, quibus adhaerebant, manibus amplexos trucidant. Iamque et alii congregati telis missilibusque saxis proturbare hostes, ruinaque tota prolapsa acies in praecipua deferri. Sedato deinde tumultu reliquum noctis—quantum in turbatis mentibus poterat, cum praeteritum quoque periculum sollicitaret—quieti datum est.

COMPARATIVE PHILOLOGY.

SECOND YEAR.

Professor Tucker.

1. Describe and illustrate the morphological methods of Mexican, Magyar, Malay, Zulu, Chinese. Point out any resemblance of principle underlying the dissimilarity.
2. Take an area including Asia Minor, Persia, Arabia, and the northern half of Africa, and state what languages are or have been spoken within it. If possible place them on an outline map. Name the families to which they respectively belong, and state their morphological classification.
3. (a) Describe the production of each of the sounds actually heard in the words *king*, *porridge*, *heard*, *table*. Give diagrams for each of those in *king*.
(b) Write phonetically the words which form the headings to this paper.
(c) Explain (for one previously ignorant of the matter) the exact part played by the vocal chords in speech or singing.
4. Write a full and clear account of the development of Italian from Latin and of Danish from Ur-Teutonic.
5. (a) Write a concise essay on phonetic change and its causes.

- (b) What causes have prevented the English language (for example) from showing entire regularity of "phonetic laws"?
6. Discuss fully the expression "Latin Race" as applied to speakers of Romance tongues.
7. Write an essay on the application of scientific principles to the etymology of words.

FRENCH.—PART I.

FIRST PAPER.

The Board of Examiners.

I. VERSION.

1. Traduisez (*ni trop littéralement ni trop librement*):
- (a) Jean-Irénée, our gardener at the lodge, does little work for us save plant and tend the kitchen-garden, whose produce he shares, and mow the lawns and orchard—when he deems the grass long enough to feed his cows. He labours for us until noon; after midday he is on his own account, a busy man, and a small farmer in his way, with four cows, a cart, and four tiny fields of his own well chosen, scattered in different enclosures and hollows of the mountain. We give him his house, an acre of grass or two, his garden, and stabling for his cows and pigs; in addition, he has some £20 of wages and *étrennes*,

so that he is well off, for Olmet, where even a *bouvier-grand*, that important person and mainstay of a farm, the head cowboy, earns barely £17 a year.

- (b) Too passionate to be impartial, his *Memoirs* nevertheless present a living picture of his time as a whole. They abound in portraits which were then coming into fashion, and in political considerations.

II. TRADUCTION.

1. Traduisez :

- (a) Voltaire, qui aimait la vie et qui savait la remplir, marque un profond mépris pour le suicide. Il comprend, sans les excuser tout à fait, les suicides des anciens "qui préfèrent une mort volontaire à la vie;" mais il ajoute tout de suite: "Nous nous tuons aussi nous autres; mais c'est quand nous avons perdu notre argent ou dans l'excès très rare d'une folle passion pour un objet qui n'en vaut pas la peine. J'ai connu des femmes qui se sont tuées pour les plus sots hommes du monde." Remarquez-vous ce mot presque prodigieux. C'est le suicide envisagé par quelqu'un qui n'a pas, un seul jour de sa vie, compris la mélancolie, ni même la passion. Comme si sottise ou esprit, et d'une façon générale le mérite personnel, avaient quoi que ce soit à voir aux choses d'amour. Les causes de l'amour sont ailleurs: "La cause en est un je ne sais quoi," disait Pascal, plus psychologue que Voltaire. Le mérite de l'être aimé n'est pour rien dans l'affection de l'être aimant, voilà
5. (a) un axiome dont il faut toujours partir quand on raisonne sur les passions.

- (b) Sa politique
 Est d'être toujours grave envers un domestique.
 S'il lui disait un mot, il croirait s'abaisser ;
 Et qu'un valet lui parle, il le fera chasser.
 Enfin, pour ébaucher en deux mots sa peinture,
 C'est l'homme le plus vain qu'ait produit la nature.
 Pour ses inférieurs plein d'un mépris choquant,
 Avec ses égaux même il prend l'air important.
 Si fier de ses aïeux, si fier de sa noblesse,
 Qu'il croit être ici bas le seul de son espèce ;
 Persuadé d'ailleurs de son habileté,
 Et décidant sur tout avec autorité ;
 Se croyant en tout genre un mérite suprême,
 Dédaignant tout le monde, et s'admirant lui
 même.
 En un mot, des mortels le plus impérieux,
 Et le plus suffisant et le plus glorieux.

III. SYNTAXE COMPARÉE.

Répondez en anglais aux questions suivantes :

- (a) Qu'entend-on par Syntaxe formelle et Syntaxe logique. Leur relation est-elle la même dans les langues modernes que dans les langues anciennes?
- (b) Comment doit-on traduire en français les verbes anglais, qui sont étroitement liés à l'adverbe suivant ; Par exemple :

to go out,
 to come away,
 to take off,
 to take down, etc.

Donnez d'autres exemples que vous pourriez savoir !

- (c) Montrez, au moyen d'exemples, pourquoi les mots abstraits sont plus rares en français qu'en anglais.

FRENCH.—PART I.

SECOND PAPER.

The Board of Examiners.

PRESCRIBED AUTHORS.

1. Traduisez (*en soignant le style et la précision des expressions*) :

(a) *Leurs* banquets ne se terminaient guère sans bataille. La cuisse de la bête appartenait au plus brave, et chacun voulait être le plus brave. Leur grand plaisir, après celui de se battre, c'était d'entourer l'étranger, de le faire asseoir, bon gré mal gré, avec eux, de lui faire dire des histoires de terres lointaines. Ces barbares étaient insatiablement avides et curieux ; ils faisaient la presse des étrangers, les enlevaient des marchés et des routes, et les forçaient de parler. Eux-mêmes parleurs terribles, infatigables, abondants en figures, solennels et burlesquement graves dans leur *prononciation gutturale*, c'était une affaire dans leurs assemblées que de maintenir la parole à l'orateur au milieu des interruptions.

(b) A la manière dont les joues rentraient en continuant la bouche, on devinait que *le vieillard* édenté s'adressait plus souvent au tonneau qu'à la huche. Sa barbe blanche, clairsemée, donnait quelque chose de menaçant à son profil par la raideur des poils coupés court. Ses yeux, trop petits pour son énorme visage, inclinés comme ceux du cochon, exprimaient à la fois la ruse et la paresse ; mais en ce moment ils jetaient comme une lueur, tant le regard jaillissait droit sur la rivière. Pour tout vêtement ce pauvre

homme portait une vieille blouse, autrefois bleue, et un pantalon de cette toile grossière qui sert à Paris à faire des emballages. Tout citadin aurait frémi de lui voir aux pieds des sabots cassés, sans même un peu de paille pour en adoucir les crevasses. Assurément, la blouse et le pantalon n'avaient de valeur que pour la cuve d'une papeterie.

.
Pension bourgeoise des deux sexes et autres.

.
L'étude était une grande pièce ornée du poêle classique qui garnit tous les antres de la chicane.

.
 Quelques habitués se coulèrent familièrement dans l'assemblée, ainsi que deux ou trois fils de famille, parés comme des châsses, heureux d'avoir été conviés.

(c) Pour être complet, *il* eût dû être ignare, gourmand et lâche. Mais loin de là, il était fort savant, très sobre et follement courageux. Il avait toutes les grandes qualités de l'âme, jointes à un caractère insupportable et à un contentement de lui même qui allait jusqu'au délire. Il avait les idées les plus absolues, les manières les plus rudes, le langage le plus outrecuidant. Mais quel dévouement, quel zèle, quelle âme généreuse et sensible! *Pauvre grand homme!* Comme je t'ai pardonné tes persécutions!

(d) *Nous* arrivâmes à *une* contrée où le soleil ne se couchait plus. Pâle et élargi, cet astre tournait tristement autour d'un ciel glacé; de rares animaux erraient sur des montagnes

inconnues. D'un côté s'étendaient des champs de glace, contre lesquels se brisait une mer décolorée; de l'autre, s'élevait une terre hâve et nue, qui n'offrait qu'une morne succession de baies solitaires et de caps décharnés. Nous cherchions quelquefois un asile dans des trous de rochers, d'où les aigles marins s'envolaient avec de grands cris. J'écoutais alors le bruit des vents répétés par les échos de la caverne, et le gémissement des glaces qui se fendaient sur la rive.

.

Si tu n'es pas un dieu caché sous la forme d'un mortel, tu es sans doute un étranger que les Satyres ont égaré comme moi dans les bois. Dans quel port est entré ton vaisseau? Viens-tu de Tyr, si célèbre par la richesse de ses marchands? Viens-tu de la charmante Corinthe, où tes hôtes t'auraient fait de riches présents?

Les questions suivantes peuvent se traiter en anglais.

2. Commentez les 4 morceaux précédents (a), (b), (c), (d), en ce qui concerne les ouvrages auxquels ils appartiennent, ainsi que leurs auteurs. Indiquez les personnages ou les événements dont ils font mention, et commentez dans la marge les mots en italique.
3. Expliquez pourquoi G. Sand est plutôt idéaliste que romantique. Indiquez ceux de ses ouvrages qui appartiennent à l'une ou à l'autre de ces écoles, Quelles qualités vous ont frappé dans son style?

4. En quoi Chateaubriand complète-t-il l'œuvre de Mme. de Staël ? Montrez les différentes tendances littéraires que vous avez pu remarquer dans les *Natchez*, le *Génie du Christianisme* et les *Martyrs*.
5. Décrivez brièvement les défauts et qualités de Michelet comme historien—Montrez le rôle que cet écrivain, Balzac et Daudet ont joué et l'influence qu'il ont exercée dans leurs différentes sphères littéraires.

FRENCH.—PART I.

THIRD PAPER.

HISTORY OF THE LITERATURE AND
LANGUAGE.

The Board of Examiners.

Les réponses peuvent se faire en anglais.

Traitez seulement cinq des questions suivantes ; mais ayez soin de comprendre toujours dans votre choix les questions (a), (c) (f).

I. HISTOIRE DE LA LITTÉRATURE.

- (a) Qu'entendez-vous par Roman pastoral et Roman réaliste ? Comparez ces deux genres et donnez les noms des auteurs et les titres des ouvrages qui en sont les meilleurs exemples. Traitez à fond cette question.

- (b) Quel est le rôle de Voltaire dans l'histoire du Roman ? En quoi diffère-t-il de J. J. Rousseau et de Lesage dans cette branche de la littérature ?
- (c) Quelles sont les qualités spéciales qui constituent la supériorité littéraire de Commines, de Voltaire et de Michelet sur les autres historiens français ? Donnez une idée du style de chacun de ces écrivains ; énumérez leurs ouvrages et indiquez l'influence qu'ils ont pu exercer sur leurs contemporains and leurs successeurs.
- (d) Décrivez brièvement l'Encyclopédie et indiquez, avec quelques détails précis, les principaux écrivains qui y ont contribué.
- (e) En quoi les écrivains anglais Richardson, Walter Scott, and G. Elliot sont-ils importants en ce qui concerne l'étude du Roman en France ?
- (f) Montrez longuement l'importance des Mémoires de Brantôme, de Montluc, de St. Simon and de de Retz.
- (g) Ecrivez une note détaillée sur chacun des écrivains suivants : Froissart, G. Sand, Mme de la Fayette, De Tocqueville, Montesquieu— Mettez ces écrivains dans l'ordre voulu.

II. HISTOIRE DE LA LANGUE.

- (a) Montrez que le celtique a laissé bien des traces dans le français moderne, contrairement à ce que prétendent certains écrivains.

ENGLISH.—PART I.

FIRST PAPER.

Mr. Murdoch.

1. Summarise the differences between Early and Modern English, with respect to inflexion of Noun, Adjective, and Verb.
2. Account for the great influx of French words into the English Language towards the close of the Thirteenth Century.
3. Explain tersely—
 - (a) My foot my tutor.
 - (b) . . . No hope that way is
Another way so high a hope that even
Ambition cannot pierce a wink beyond,
But doubt discovery there.
 - (c) His word is more than the miraculous harp.
 - (d) . . . bring a corollary
Rather than want a spirit.
 - (e) . . . I will pay thy graces
Home both in word and deed.
 - (f) This is the tune of our catch, played by the
picture of Nobody.
4. Explain the phrases,—By'r lakin—forthrights and meanders—one dowle that's in mv plume—Mars's hot minion—an excellent pass of pate—this wooden slavery.

5. Write concise notes on—

- (a) Must I go show them my unbarb'd sponce ?
 (b) The thing I have forsworn to grant may never
 Be held by you denials.
 (c) A pair of tribunes that have rack'd for Rome,
 To make coals cheap.
 (d) Take to you, as your predecessors have,
 Your honour with your form.
 (e) If he have power
 Then veil your ignorance ; if none, awake
 Your dangerous lenity. If you are learn'd
 Be not as common fools ; if you are not,
 Let them have cushions by you.

6. Explain the following words as used in *Coriolanus* :
 —tetter, kam, cog, absolute, factionary, lurch,
 cautelous, practice, atone.

7. Explain the following phrases, with reference to
 their context :—Warping on the eastern wind—
 Amram's son—that approbrious hill—gay
 religions—Thammuz yearly wounded—Javan's
 issue—sons of Belial—bands of pioners—sub-
 limed with mineral fury.

8. Comment upon—

- (a) Came ye on none but phantoms in your quest,
 No man, no woman?
 (b) I saw the spiritual city, and all her spires
 And gateways in a glory like one pearl.
 (c) And on the splendour came, flashing me blind ;
 And seem'd to me the Lord of all the world,
 Being so huge.

- (d) Knights that in twelve great battles splash'd
and dyed
The strong White Horse in his own heathen
blood.
- (e) Behold, the enchanted towers of Carbonek.
9. Quote examples of—
- (a) *Plays on words*, from Milton.
- (b) *Latinisms of vocabulary*, from Milton.
- (c) *Alliteration*, from Tennyson.
10. Give a very short account of each of the following persons mentioned by Johnson :—Dennis, Curll, Theobald, Cibber, Tickell, Atterbury, Arbuthnot.

ENGLISH.—PART I.

SECOND PAPER.

Mr. Murdoch.

1. Give the substance of Johnson's criticism of the *Essay on Man*.
2. What does Johnson mean by the term "representative metre"? What is his opinion in the matter?
3. What opinion of Richard I., as a king, would you form from *Ivanhoe*?
4. Are we justified in drawing any conclusion from *Coriolanus* as to Shakespeare's political opinions?

5. What is meant by "internal evidence" with regard to the chronology of Shakespeare's plays? Illustrate by *The Tempest*, or *Coriolanus*.
6. Discuss the originality of Tennyson's treatment of the Grail legend.
7. Divide Milton's life into three periods, and describe one characteristic work of each period.
8. Write a short essay on the character of Miranda.

ENGLISH.—PART II.

FIRST PAPER.

Mr. Murdoch.

1. Explain the following phrases:—Now is he total gules—the triumph of his pledge—the first row of the pious chanson—I eat the air, promise-crammed—as flush as May—goes it against the main of Poland?—on mount of all the age—the dram of eale.
2. Discuss Goethe's account of Hamlet's character, and compare it with Coleridge's account.
3. Comment on—
 - (a) I will from henceforth rather be myself,
Mighty and to be fear'd, than my condition.
 - (b) Shall we buy treason? and indent with fears,
When they have lost and forfeited themselves?

- (c) He apprehends a world of figures here,
But not the form of what he should attend.
- (d) Burgomasters and great oneyers, such as can
hold in.
- (e) Happy man be his dole, say I.
- (f) He of Wales, that gave Amamon the
bastinado.

4. What is meant by the term *dramatic irony*?
Illustrate from *King Henry IV., Part I.*
5. Give the substance of Dryden's comparison of
English with French drama.
6. Give the substance of Dryden's account of
Shakespeare.
7. Quote from Gray examples of (a) periphrasis, (b)
Latinism of diction, (c) obscurity due to inver-
sion.
8. What, according to Macaulay, were Addison's
most striking qualities as an essayist? Discuss
Macaulay's estimate of Addison.
9. In what respects did Burke, in his *Reflections*,
prove himself a true prophet?

ENGLISH.—PART II.

SECOND PAPER.

Mr. Murdoch.

A.

1. Give a concise account of the work of Geoffrey of Monmouth, Layamon, Orm, Wace, and Occleve.
2. Write a short account of the Elizabethan novel.
3. Who were the principal English dramatists before Shakespeare? Name *one* work by each.
4. Write a note on—
 - (a) Dryden's work in prose.
 - (b) Johnson's work in verse.
5. Give a short description of *one* work by each of the following:— Hooker, Walton, Sir Thomas Browne, Hume, Goldsmith, Cowper, Campbell.

B.

Write an essay on *one* of the following subjects:—

- (a) Tragedy.
- (b) The meaning of "Romance."
- (c) Didactic Poetry.

EDUCATION.—SECTION A.

SUPPLEMENTARY PAPER.

The Board of Examiners.

1. What advantages are to be gained from a study of Parker's work ?
2. In what respects is Frœbel the greatest of educators ?
3. Why does Modern Education lay such stress on school conditions ?
Give those which a teacher should consider as perfect.
4. What is Thring's Theory of Education ?
5. Why does De Garmo in his treatment of Apperception find it necessary to discuss the nature of the syllogism ? Can you indicate his views on this point ?
6. Why does the acceptance of the Doctrine of Apperception lead to Child Study ? Contrast the findings of Lange with those of Parker on the content of children's minds on entering school, and reconcile the two views.
7. What is the value of Oral Composition to all school work ?
Indicate how you would treat it as a branch of Language to pupils between the ages of ten and fourteen.

8. Outline a lesson according to the Herbartian Steps :—
- (a) In Latin—Indirect Statement, or
 - (b) In Mathematics—The Recurring Decimal as an example of Geometrical Progression, or
 - (c) In History—Any historical character.
9. Discuss Parker's views on "Modes of Attention."

EDUCATION.—SECTION B.

SUPPLEMENTARY PAPER.

The Board of Examiners.

1. What is the value of Oral Composition to all school work? Indicate how you would treat it as a branch of Language to pupils between the ages of ten and fourteen.
2. Outline a lesson according to the Herbartian Steps :—
 - (a) In Latin—Indirect Statement, or
 - (b) In Mathematics—the Recurring Decimal as an example of Geometrical Progression, or
 - (c) In History—any historical character.
3. Why does Interest occupy such an important place in Herbart's treatment of Instruction?
4. From what points of view must "The Material of Instruction," be considered? Compare the findings of any two educators on the best programme.

5. Give the Herbartian account of—
- (a) Subjective side of Character.
 - (b) Memory of the Will.
 - (c) Morality.
- Or give the "General Method of Training" according to Herbart.
6. Outline a programme of instruction for a Secondary School; indicate the time per week to be given to each subject; and defend your whole position.
7. Taking the great aims of education, discuss the programmes of the present schools for girls between the ages of twelve and eighteen.
8. Give some of the great lessons to be learned from the History of Education.
9. What discussion has taken place over History as a Secondary School subject? Outline a course in History.
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ANCIENT HISTORY.

Professor Elkington.

1. Write a note on Ancestor Worship.
2. Give some account of the legislation which gradually secured to the Plebs the full rights of citizenship.

3. Show the effects of the Punic Wars in beginning and extending the provincial governments of Rome.
4. Explain the circumstances in which the office of Praetor was evolved from the Consulate.
5. Mommsen describes Gaius Gracchus as the "greatest of political transgressors"; also as "the regenerator of his country." Show the applicability of both epithets.
6. Describe the geographical position of the following places, and mention any important historical events connected with them:—Carrhae, Delphi, Megara, Messana, Pharsalia, Sena, Tigranocerta, Vercellae.
7. Trace the steps by which the Emperor gradually acquired control over the Senate.
8. Write a note on the more important sources of Roman revenue.
9. Sketch the history of the Confederacy of Delos, its origin and purpose, and the causes of its ultimate dissolution.
10. Give some account of the various reforms which gradually brought the constitution of Athens to its fullest democratic form.

HISTORY OF THE BRITISH EMPIRE.

PART I.

Professor Elkington.

1. Trace the gradual decay of the Roman power in Britain.
2. Trace briefly the history of the early Overlordships of one State over another in England.
3. Give some account of the great Earldoms established in England by Canute.
4. Show that the Norman Conquest was important for *all* Britain.
5. Give the date of the Provisions of Oxford, and explain their constitutional significance.
6. Give a brief but clear summary of the legislation of Edward the First.
7. Trace the causes of the Peasants' Revolt of 1381.
8. Write a note on the characteristics of the Wars of the Roses.
9. Give some account of the Holy League, 1511.
10. Give some account of Edward the Sixth's "Device for the Succession."
11. Give some account of "The Humble Petition and Advice," 1657.
12. Summarise the results of the Cabal Administration.

HISTORY OF THE BRITISH EMPIRE.—
PART II.

Professor Elkington.

1. Discuss the circumstances which led to the formation of the Jacobite party in England.
2. To what events did the Revolution of 1688-9 give rise in Ireland?
3. What do you know of the Grenville Act; the Schism Act; the Triennial Act?
4. Write an account of the circumstances in which the Talents Ministry (*a*) entered upon office, (*b*) continued in office, (*c*) quitted office.
5. What would you set down as the chief positive results of the long administration of Walpole?
6. Consider briefly the parliamentary career of Edmund Burke.
7. Write a summary of the political and social achievements of the reign of William the Fourth.
8. Trace very briefly the growth of the cotton manufacture in England.
9. What does India owe to (*a*) Lord Cornwallis, (*b*) Lord George Bentinck?
10. Explain the circumstances in which the first European settlement of Australia was brought about.

POLITICAL ECONOMY.

Professor Elkington.

1. Explain fully the exact meaning you apply to each term in the equation : Produce = Rent + Interest + Wages.
2. Discuss the question whether Wages should be considered as paid out of Capital.
3. How does honesty tend to increase the productiveness of Labour ?
4. Account as well as you can for the rates of Interest in Great Britain, Turkey, and Victoria respectively.
5. Explain the phrases "immobility of labour," and "standard of comfort," and show how the facts they point to affect the wages question.
6. What is meant by the Demand for Money ? What are the qualities which should characterise the commodity we adopt as Money ?
7. What objections would there be to an Act of Parliament ordering that shillings should henceforth rank as florins ?
8. Discuss the question whether Trades Unions can raise wages, indicating any of the difficulties in their way.
9. What can you say for and against a policy of imposing duties to establish an industry which is expected ultimately to flourish without Protection ?
10. Distinguish between the necessary and the optional functions of government.

PURE MATHEMATICS.—PART I.

The Board of Examiners.

Candidates must answer satisfactorily in each of the three divisions of this Paper.

I.

1. The opposite angles of any quadrilateral inscribed in a circle are together equal to two right angles.

Two circles $ABXY$, $CDXY$ intersect in X , Y . If AYC , BXD are straight, then AB , CD are parallel.

2. Inscribe a circle in a given triangle.

Shew that the difference of two sides is equal to the difference of the segments into which the third side is divided at the point of contact with the inscribed circle.

3. A straight line drawn parallel to one side of a triangle cuts the other sides proportionally and conversely.

If from one angle A of a parallelogram a straight line is drawn cutting the diagonal in E and the sides in P , Q , shew that AE is a mean proportional between PE and EQ .

II.

1. Shew how to solve two simultaneous equations of which one is of the first degree, and the other of the second degree.

Solve—

$$\begin{aligned} bx + ay &= 2ab \\ x^2 + y^2 &= ax + by. \end{aligned}$$

2. Define an arithmetical progression and prove formulæ for the n^{th} term and the sum of n terms.

If a, b, c are in arithmetical progression so are $a^2 - bc, b^2 - ca, c^2 - ab$.

3. State and prove the formula for the number of permutations of n different things taken r at a time.

Prove that—

$${}_n P_r = n \cdot {}_{n-1} P_{r-1}$$

4. State and prove the binomial theorem for a positive integral exponent.

Find the middle term in the expansion of

$$(x + y)^{2n}.$$

III.

1. State and prove formulæ for expressing the sum or the difference of two sines or two cosines as a product.

If $A + B + C = 0$, express

$$1 + \cos A + \cos B + \cos C$$

as a product.

2. Find a formula for all the angles which have a given sine.

Find the general solution of

$$\cos 3x \sin 5x = \cos 7x \sin 9x.$$

3. Prove that in any triangle

$$c = a \cos B + b \cos A.$$

Shew that

$$a \cos A - b \cos B = \cos C (b \cos A - a \cos B).$$

4. Shew how to solve a triangle, having given two sides and the included angle.

If $b = 8$, $c = 3$, $A = 62^\circ$, find B , C , having given

$$\log 2 = \cdot 3010300 ;$$

$$\log 1 \cdot 1 = \cdot 0413927 ;$$

$$L \cot 31^\circ = 10 \cdot 2212263 ;$$

$$L \tan 37^\circ 6' = 9 \cdot 8786907 ;$$

$$\text{Difference from } 1'' = 2626.$$

PURE MATHEMATICS.—PART II.

The Board of Examiners.

1. Find the equation of a straight line through a given point, and perpendicular to a given straight line.

Shew that the three perpendiculars of a triangle meet in a point.

2. Find the locus of the middle points of a system of parallel chords of a parabola.

A chord of a parabola passes through a fixed point. Find the locus of its middle point.

3. Find the locus of the intersection of perpendicular tangents to an ellipse.

Shew that the chord of contact touches a coaxial ellipse.

4. Find the limit when $x = 1$ of $(x^n - 1)/(x - 1)$, and deduce the differential coefficient of x^n .

Differentiate $(x^n - 1)/(x - 1)$.

5. Shew how to find the maximum and minimum values of a function of one variable.

Find the rectangle of maximum perimeter described about a given rectangle.

6. Define the curvature at any point of a curve, and prove the formula—

$$\rho = r \, dr/dp.$$

Find the curvature at any point of an ellipse.

7. State and prove the rule for integration by substitution.

Integrate—

$$\frac{1}{a + b \cos x}, \quad \frac{1}{a + b \cosh x}.$$

8. State and prove the formula for integration by parts.

$$\text{Integrate } e^{ax} \cos (bx + c).$$

9. Investigate a formula for the volume of a solid of revolution.

Find the volume generated by the revolution of the curve

$$y^2 (2a - x) = x^3$$

about its asymptote.

MIXED MATHEMATICS.—PART I.

The Board of Examiners.

1. State and prove the polygon law of composition of relative velocities and accelerations.

A plate rotates in its own plane with uniform angular velocity $\bar{\omega}$ about a fixed centre O . A circle of radius r and centre C , distant c from O , is drawn on the plate, and a point P describes this circle with uniform speed v . Find the velocity and acceleration of P relative to the earth, when $\sphericalangle OCP = \theta$.

2. The path of an unresisted projectile fired from a point O with velocity v at elevation i , intersects a line inclined at an angle θ to the horizontal in the points P, Q . Shew that the middle point of PQ is at a horizontal distance

$$\frac{v^2 \cos^2 i}{g} (\tan i - \tan \theta)$$

from O , and hence find the distance from O of the parallel straight line which is grazed by the projectile.

3. The resistance to a mass of M tons at any velocity is given to differ from the resistance when it is just moving by a quantity proportional to the square of the velocity. The resistance at the low velocity is 5 lbs. wt. per ton, and at 30 miles per hour it is double. Give an algebraic formula for the resistance in tons wt. at a velocity of v ft. per sec.

If the mass is 100 tons, and there is a constant driving force on it of 2 tons wt., find what speed the mass will attain and the H.P. expended at that speed.

4. Find the time of a small oscillation of a simple pendulum.

A small ball hangs suspended by a string of length l and is in contact with a vertical wall. The ball is pulled back so that the string makes an angle θ with the vertical in a plane normal to the wall and is then let go. Given that the coefficient of impact with the wall is e , shew that the angular amplitude of the rebound after n impacts with the wall is

$$2 \sin^{-1} (e^n \sin \theta/2),$$

and find the time elapsed up to the n^{th} impact, assuming the amplitudes small.

5. A given set of forces in one plane act on a particle. Shew how to find graphically and algebraically the two forces in given directions which will balance the given set.

CA, CB are two equal light bars jointed to fixed points at A, B , and to one another at C . Find the stresses in the bars due to a force F acting on the joint at C in a given direction in the plane ABC , and shew that if the material is equally strong in extension and compression, the necessary material in the bars is greatest for a given magnitude of F , when that force bisects the greater of the angles formed at C by the directions of the bars.

6. Shew that if three forces acting in one plane on a rigid body balance, they either meet at a point or are all parallel.

A heavy block standing on a rough horizontal plane (coefficient of friction μ) is pulled by a force P in a vertical plane of symmetry of the block and at a fixed angle θ above the horizontal. P being gradually increased, the block at length begins to slide without overturning. Shew that the line of action of P must intersect the base within a length $d/\mu \tan \theta$ where d is the distance between the extreme lines which intersect the base and are perpendicular to the vertical plane of P .

7. Find the mechanical advantage of a smooth light lever with the applied force and resistance in given directions.

Shew that if the fulcrum is formed of a pin of radius r in the lever resting in a rough circular bearing, the greatest loss of mechanical advantage is obtained by treating the fulcrum as shifted from the centre of the pin a distance $r \sin \lambda$ towards the driving force, supposed in the same direction as the resistance.

8. From the triangle CAB a triangular corner $CA'B'$ is cut off. Shew that the distance of the c.m. of the remainder from AB is

$$\frac{1}{3} p \frac{(x/a + y/b)^2 - (1 + x/a + y/b) xy/ab}{x/a + y/b - xy/ab},$$

where $x = BB'$, $y = AA'$ and p is the distance of C from AB .

Shew that the distance from AB of the c.m. of the trapezium obtained by increasing indefinitely the height p of the triangle, keeping AB , x , y constant, is

$$\frac{1}{3} \frac{x^2 + y^2 + xy}{x + y} \sin \theta$$

where θ is the inclination of the parallel sides of the trapezium to AB .

9. State and prove Archimedes' theorem of buoyancy.

A solid of revolution with vertical axis plugs a circular aperture of radius r in the horizontal base of a vessel containing a depth h of water. If the weight of the solid is W , and the volume of water it displaces is V , find the vertical force required to lift it off the aperture.

MIXED MATHEMATICS.—PART II.

The Board of Examiners.

Electrical Engineering Students omit the first question.

1. State and prove the fundamental cosine-formula for a spherical triangle.

The latitudes and longitudes of two points B , C on the earth are given. Find the latitude and longitude of the pole of the great circle through B and C .

2. Shew how to find the magnitudes of three forces in given directions which balance a given system of forces at a point.

The lines OA , OB , OC , are mutually at right angles. CA , CB , CO are light bars jointed to fixed points at A , B , O and jointed together at C . A force F is applied at C in a direction making angles θ , ϕ , ψ , with OA , OB , OC respectively. Find the stresses in the bars.

3. State and prove the principle of virtual work. .

A frictionless mechanism is in equilibrium under external forces $P_1, P_2 \dots$ applied at the points $A_1, A_2 \dots$. The position of the mechanism is determined by a variable x and the corresponding arcual distances of the points named along their paths are $f_1(x), f_2(x) \dots$. If the forces are at inclinations $\theta_1, \theta_2 \dots$ to the directions of motion of their points of application, shew that for equilibrium

$$\Sigma P f'(x) \cos \theta = 0.$$

OA, OB, OC are three smooth fixed rods mutually at right angles, OC being vertical. A, B, C are three sliding pieces on the rods, each of weight w . AC, BC are uniform bars of weights W_1, W_2 respectively, jointed to the sliding pieces. The system is in equilibrium under forces P, Q applied at A, B in the direction AB . Shew that

$$P - Q = (2w + W_1 + W_2) AB/2OC.$$

4. Shew that the tangential and normal components of acceleration of a particle moving along a curve are respectively

$$\frac{d^2s}{dt^2}, \quad \kappa \left(\frac{ds}{dt} \right)^2.$$

A rod AB of length l turns about a fixed point A in a vertical plane. A cord attached to the end B is carried over a small fixed pulley at C , the distances of C from A , B when AB is vertical being h , k respectively.

The cord is pulled over the pulley at a constant rate V . Find the acceleration of B when the rod makes an angle θ with the vertical.

5. Discuss the rectilinear motion of a particle under an elastic force as the displacement, and a resistance as the velocity.

If the resistance in the equilibrium position is 1% of the elastic force at the preceding extreme position, shew that the ratio of the amplitudes of two successive half swings is about 1.016 : 1.

6. Investigate the period of a small oscillation under gravity of a rigid body on a horizontal axis.

A uniform rod AB of length l and mass m can turn in a vertical plane about a fixed point A . One end of an elastic cord is attached to the point B , and the other end to a fixed point C , in the vertical plane, and distant c from A . In the equilibrium position, the rod makes an angle θ with the vertical, and an angle $\alpha - \theta$ with AC . If the cord gives a tension T per unit extension, find the time of a small oscillation of the rod.

7. Demonstrate the equations of impulsive motion of a rigid body.

A rectangular lamina lies on a table. A knock is given at a point of one side of the rectangle in a horizontal direction perpendicular to that side. Find about what point the lamina begins to turn.

DEDUCTIVE LOGIC

Professor Laurie.

1. In connection with the rule that as denotation increases connotation decreases and *vice versâ*, how would you deal with the difficulty that a general name may acquire an added meaning while its denotation is unchanged?
2. Point out any ambiguities which attach to the signs "all," "some," "or." Show the importance of fixing the exact significance of these signs for purposes of Formal Logic.
3. What distinction is drawn by Keynes between conditional and hypothetical propositions? Consider different statements which have been made as to the import of hypothetical propositions, giving reasons for the interpretation which you prefer.
4. What is meant by (a) a subaltern mood, (b) a strengthened syllogism? In what moods is the middle term distributed twice?
5. May the fourth figure of the Syllogism be treated as "only the first with a converted conclusion"? Give your reasons.
6. What are the principal rules for definition? Are any kinds of terms indefinable; and, if so, why?
7. What do you understand by *petitio principii*? Is an argument necessarily fallacious when one of the premisses is exactly equivalent in meaning to the conclusion? Refer, in your answer, to Whately's treatment of *petitio*.

8. Examine the following arguments, reducing them where possible to syllogistic form, and pointing out fallacies, if any.

(a) No law should be changed unless it has been found to be unsuitable. The licensing law is subject to this objection, and should therefore be amended.

(b) Few persons have an intimate knowledge of Greek literature, and, as those who possess this are worthy of honour for their learning, we may conclude that few persons are thus worthy of honour.

(c) All metals are elements ; therefore all very heavy metals are very heavy elements.

(d) Those who are deficient in generosity fail to fulfil their duties to the community. An avaricious man attaches undue importance to the accumulation of wealth ; and it frequently happens that those who attach undue importance to the accumulation of wealth are deficient in generosity. May we conclude, then, that an avaricious man fails to fulfil his duties to the community ?

9. In a given universe of discourse, everything is A or D ; but the presence of A is marked by the absence either of B or of C ; and whenever B is absent, C is present. What can be inferred
(a) as to the presence of C and D together, and
(b) as to the absence of D ?

INDUCTIVE LOGIC.

Professor Laurie.

1. Does Judgment, as expressed in propositions, necessarily include a reference to reality? Distinguish, in your answer, between real and verbal propositions.
2. Discuss the question whether the so-called immediate inferences (including conversion, &c.) are entitled to that name. Show the bearing of this question on the meaning attached by Mill to Inference or Reasoning.
3. Give a definition of Induction which appears to you satisfactory. Distinguish ampliative Induction from any operations with which it is likely to be confused.
4. Are any inductions fitted to be tests of others? And, if so, on what principle may these testing inductions be selected?
5. What method, or methods, are most suitable for ascertaining the conditions of compound effects? Show the difficulties to be encountered in such investigations.
6. In what respects does the Method of Concomitant Variations supplement other methods? Give an example of its use.
7. In what sense, if any, may a plurality of causes be affirmed? Explain the bearing of this alleged plurality on any of Mill's methods.
8. Show the value of those hypotheses in which an unknown cause is supposed for purposes of explanation.

MENTAL PHILOSOPHY.

SECOND AND THIRD YEARS.

Professor Laurie.

Second Year Candidates are requested to confine themselves to Questions 1-8 inclusive.

1. What precisely is the psychological question as to the relation between mind and the bodily organism? Is it necessary, for purposes of psychology, to decide such controversies as those of materialism and idealism?
2. On what grounds may sensations of temperature be distinguished from sensations of touch proper?
3. Sketch the development of visual perception.
4. In the consideration of Memory, what meanings may be attached to (a) Retention, (b) Reproduction? Does Retention furnish any evidence of unconscious states of mind?
5. Give an account of the various directions which may be taken by the productive Imagination.
6. What is the character of the mental act of Conception? On what grounds has it been said that the processes commonly marked off as Conception and Judgment are not essentially different?
7. Consider the account given by Subjective Idealism of our knowledge of Space.

8. Examine Spencer's argument, in his First Principles, from "an indefinite consciousness which cannot be formulated" to an Unknowable Reality.
9. Show the significance, in the historical development of thought, of Spencer's recognition of necessities of Knowledge.
10. Compare Spencer's doctrine of Transfigured Realism either (a) with Subjective Idealism or (b) with Hypothetical Realism.

MORAL PHILOSOPHY.

Professor Laurie.

1. Mention any points (a) of similarity, (b) of opposition, between the teaching of Socrates and that attributed by Plato to the Sophists.
2. What were the distinguishing features of the Cyrenaic ethics?
3. Is it necessary for morality that there should be choice between conflicting motives? Examine the position of Aristotle on this question.
4. What difficulties stand in the way of an intuitional theory of morals, such as that of Butler?
5. How does Mill seek to vindicate the duty of Justice as a part of Utilitarian ethics? Add any comments.

6. Does the moral life embrace the whole of human conduct? Consider this question in connection with Spencer's statement that "conduct with which Morality is not concerned, passes into conduct which is moral or immoral, by small degrees and in countless ways."
7. Examine Green's statement of a timeless Self. Is the solution of this question necessary to moral philosophy?
8. How may we explain (a) the increasing recognition of universal human fellowship; and (b) the retardation of this fellowship? Refer, in your answer, to Green's treatment of these questions.

GEOLOGY.—PART I.

The Board of Examiners.

1. Describe the symmetry of the Calcite type of crystals. Name the principal forms belonging to this type, giving in each case the symbols of Miller's notation; and explain the relation of the Calcite to the Beryl and Tourmaline types respectively?
2. Give the general characters of the Amphibole and Pyroxene groups of minerals, respectively.
State precisely by what optical or other methods you would distinguish between Hornblende and Augite, Actinolite and Diopside, or a Soda Augite.

3. From a molten magma of sub-basic composition what different rocks may be formed? Explain clearly the conditions which lead to the formation of the different types.
 4. Give an account of the nature of an earthquake shock, the different causes which may give rise to it, and the nature of the record of the shock as traced on a self-recording seismograph.
 5. State what you know of the characters and stratigraphical horizon of the following :—Favosites, Cypræa, Ogygia, Lepidodendron, Tetragraptus, Ichthyosaurus.
 6. Give an account of the geology and physical geography of the district near Ascotvale and the Saltwater River.
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BIOLOGY.—PART I.

WRITTEN PAPER.

The Board of Examiners.

1. Identify specimen A, and write a short account of its life-history.
2. Identify specimen B. Describe briefly its external anatomy, and compare this with that of a typical insect so far as locomotory and respiratory structures are concerned, indicating how each animal is adapted to its environment.

3. Describe the shoulder girdle of a frog, and compare it with that of a bird.
4. Write an account of the development of the foetal membranes of a bird and a mammal.
5. Write an account of the excretory structures of (1) amoeba, (2) tape worm, (3) frog.
6. Describe the arterial system of a rabbit, and compare it with that of a frog.

BIOLOGY.—PART I.

LABORATORY WORK.

The Board of Examiners.

1. Dissect the frog provided, so as to show the arterial system.
2. Make preparations to show the structure other than microscopic of the eye provided.

NATURAL PHILOSOPHY.—PART I.

The Board of Examiners.

TEN questions only to be attempted.

1. Explain fully the different arguments involved in the proof of the formula.

$$s = ut + \frac{1}{2} at^2.$$

A point moving in a straight line with uniform acceleration covers 12 feet in a certain second, and 18 feet in the next second. What is its acceleration, and what time has elapsed since it was at rest?

2. What force is required to stop a train of 100 tons going 30 miles an hour (*a*) in half-a-minute; (*b*) in half-a-mile?

A ten-gramme bullet, in passing through a plank 5 cm. thick has its velocity reduced from 30,000 cm/sec to 20,000 cm/sec. Find the average resistance offered by the plank to the bullet; find also how thick the plank would require to be to just stop the bullet.

3. Describe the principal kinds of strain and stress, and explain how they are specified.

Describe also the principal kinds of elasticity, and use them as the basis for a classification of matter.

4. Describe the common hydrometer, and give its complete theory.

The stem of one such instrument is cylindrical, and the highest and lowest graduations on it correspond to specific gravities of 1 and 1.2; find the specific gravity that corresponds to a graduation equidistant from these two.

5. Describe fully, and give the theory of, one method of determining the coefficient of linear expansion of a metal.

An iron telegraph wire is 100 miles long at 0°C .; determine correct to the nearest foot the increase in its length produced when the temperature rises to 25°C . (Coefficient of linear expansion of iron = $\cdot 000012$.)

6. Describe fully how you would determine the specific heat of a liquid by the method of mixtures, and give a complete proof of the formula, which expresses the result.

Point out the defects in the method, and explain fully how they may be corrected for or eliminated.

7. Describe fully how a thermopile is constructed and used to compare the diathermancies of different media.

8. Describe fully how to project a pure spectrum on to a screen.

What different kinds of spectra are there, and how are their characteristic features accounted for?

9. Describe the Wimshurst machine, and explain its action fully.

10. It was found that 58 c. cm. of hydrogen, at 17°C . and 779 mm. pressure, were given off per hour when a certain current passed through a voltmeter; the density of hydrogen under standard conditions is 8.7 times its electro-chemical equivalent; find the strength of the current in amperes.

11. A copper ring is rotated in a uniform magnetic field round a diameter which is perpendicular to the lines of force of the field ; describe fully what happens during a complete rotation.

A radial saw-cut is next made through the ring; what difference will this make in the results of the rotation and in the effort required to produce rotation ?

12. Draw a careful diagram of the instruments, and the way in which they are arranged to form a sounder telegraphic system, provided with relays and local circuits at its two ends.

NATURAL PHILOSOPHY.—PART II.

ARTS, SCIENCE, AND ENGINEERING.

The Board of Examiners.

EIGHT questions only to be attempted.

1. Prove the principle of the conservation of angular momentum.

An iron fly-wheel consists of a disc of 20 cm. radius and 2 cm. thick surrounded by a ring of square section measuring $5\frac{1}{2}$ cm. in the edge; the density of iron is 7.6; find the angular momentum of the fly-wheel when it revolves 1,200 times per minute.

2. Give a full account of the corrections which must be applied to the readings of a mercurial barometer in order to deduce an accurate determination of the pressure of the atmosphere from its readings.

Find the percentage error involved in omitting the corrections for a reading made in latitude 45° at a temperature of 25° C., and an elevation of 2,000 metres above mean sea-level.

(Coeff. of expansion of mercury $\cdot 00018$, of brass $\cdot 00002$.)

3. Give a full account, experimental and theoretical, of the mode of determining the pressure coefficient of a gas.
4. Explain carefully the difference between saturated and superheated steam, and state what you know respecting the employment of each in heat engines.
How would you determine the specific gravity of superheated steam?
5. Describe, with full experimental and theoretical detail, a method of determining the Thermal Conductivity of a sample of boiler plate.
6. Give a full account of an accurate method of measuring absolute pitch, and deduce a formula expressing the result in terms of the quantities measured.
7. Obtain an expression for the longitudinal chromatic aberration of a thin lens in parallel light, and deduce the condition that two thin lenses in contact may form an achromatic doublet.
8. Describe, and give the theory of a method of determining the mean intensity of magnetization of a bar magnet 8 cm. long in terms of the horizontal intensity of the earth's field.

9. Give Ampère's definition of unit current. Write down the expression for the torque on a rectangle of wire in which a current C flows, and which is placed in a uniform magnetic field in such a way that two of its opposite sides are parallel to the lines of force of the field.

Hence establish the law for the force on an element of a wire carrying a current in a magnetic field.

10. Describe, with full detail, how to determine accurately the watts absorbed per candle-power by an incandescent direct-current lamp.
11. Describe fully the construction of a drum armature. Show how to wind one for a two-pole dynamo, if it has 20 commutator segments, 40 slots, and 4 conductors in each slot.

CHEMISTRY.—PART I.

The Board of Examiners.

1. How many volumes of air must be mixed with one volume of carbonic oxide to give the best explosive mixture? If the explosion be effected in a closed vessel, originally filled at one atmosphere pressure, what will be the final pressure after the original temperature has been restored?
2. What proofs have we that diamond and graphite are allotropic forms of the same element? If required to practically demonstrate the fact, how would you proceed?

3. An alkali is required for a chemical process, and it is found that the cost will be the same whether potash or soda be used. Taking soda as costing 1s. per lb., find the cost of potash.
4. "The classification of metallic elements that is commonly used in analytical work is often at variance with the classification based upon the Periodic Law." Explain this statement, and illustrate it by reference to magnesium, zinc, and cadmium.
5. Describe the chief tests by which nitrates are distinguished from other salts, and explain the reactions on which they depend.
6. Give a short account of a process for the manufacture of sodium carbonate, and explain the reactions that occur.
7. Explain the term hydrolysis. Describe and formulate a few instances of this kind of action.

CHEMISTRY.—PART II.

The Board of Examiners.

1. Describe the methods by which the atomic weight of a newly-discovered element might be determined.
2. Discuss the possible cases of equilibrium between the different varieties of sulphur (solid, liquid, and vapour).

3. Describe the changes that take place when a solution of copper sulphate is electrolysed between copper electrodes; and show how Hittorf was able, by the study of these changes, to measure the relative velocities of the copper and sulphate ions.
 4. Describe, and discuss the completeness of, the methods by which you would separate cobalt and nickel from each other and from other members of the iron, zinc group.
 5. Write a brief account of the main facts in the chemistry of the elements, magnesium, calcium, strontium and barium.
 6. Give a brief account of the element boron and its compounds containing oxygen, and compare the properties of the oxides of boron and aluminium.
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ORGANIC CHEMISTRY.

FIRST YEAR.

The Board of Examiners.

1. Explain fully what is meant by a homologous series of carbon compounds. Illustrate by reference to (a) the paraffins, (b) the alcohols, (c) the fatty acids.
2. By what practical method would you find out whether a given hydrocarbon is saturated or unsaturated? How would hydrocarbons of the following formulæ behave when tested in this way:—(a) C_4H_{10} , (b) C_4H_8 , (c) C_4H_6 ?

3. What is a primary monamine? Name and formulate one or two examples. Explain the action of nitrous acid on such substances.
4. Describe two methods for the preparation of ether. Show that the accepted constitutional formula of ether is in accord with these actions.
5. What is an ester? Name and formulate one or two examples of the class. How do esters react with alkalis? Why is this action often called saponification?
6. How do primary, secondary, and tertiary alcohols differ with respect to the action of oxidising agents? How does the theory of their constitution account for this difference of behaviour?
7. The names ethyl cyanide and propionitrile belong to the same substance, but indicate two different modes of preparation. Explain this fully, and illustrate by means of graphic formulæ.

NATURAL SCIENCE.

CHEMISTRY.

The Board of Examiners.

1. How may a Torricellian vacuum be produced? How may a partial vacuum be measured?
2. A closed glass vessel containing air is heated from 10° C. to 85° C. What is the percentage increase of pressure in the vessel?

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3. A mixture of equal volumes of hydrogen and oxygen is contained in a closed glass vessel at at 15°C . It is exploded electrically without opening the vessel, and the temperature is then restored to 15°C . What gas will remain in the vessel? And what percentage change will there be in the inside pressure?
4. State the law of multiple proportions, and give instances.
5. Explain how the atomic theory accounts for the fact of multiple proportions. Show that this explanation finds expression in the chemical formulæ, using the same instances as in your answer to Question 4:
6. Describe instances of each of the following kinds of chemical change, and write equations for them:—
(a) simple combination, (b) simple decomposition, (c) double decomposition, (d) substitution.

JURISPRUDENCE (INCLUDING ROMAN LAW).

The Board of Examiners.

Candidates should answer **SEVEN** questions only.

1. What are the essential features of the contracts *re*? How was the standard of diligence of the parties adjusted therein?

2. What are the general characteristics of *privata delicta* in Roman Law? Distinguish them especially from *obligationes ex contractu* and *publica judicia*.
3. Describe *mandatum*, and show its place in the classification of contracts. For what purposes was it used?
4. Distinguish between *adpromissio* and *expromissio*. How were they effected?
5. In what several senses is the term *status* used?
6. *A* is the returning officer for the borough of *X*——. *B*, whose name is on the electoral roll, tenders a vote, which *A* improperly refuses to receive. *B* brings an action against *A*, claiming damages, and the Court holds that he has a good cause of action. Describe the legal relations disclosed in terms of *duty*, *power*, and *right*.
7. Mention the principal classes of juristic persons known to English Law.
8. (a) *A* secretly and wrongfully takes goods of *X* out of the possession of *X*'s servant. Consider the case under English and Roman Law respectively, according as *A* takes the goods with the intention of destroying them to spite *X*, or of giving them to *Y*, or of keeping them for himself.
 (b) An English Statute avoids the alienation of property by a debtor with the view of preferring a creditor or class of creditors. *A*, a debtor, immediately before his bankruptcy,

conveys certain of his property to *X* and *Y* for the purpose of recouping an estate to which *A* is indebted by reason of his having misappropriated funds of the estate. It is shown that *A* was moved partly by compunction for the wrong he had done to the beneficiaries, partly by fear of a criminal prosecution. The trustee in bankruptcy of *A* claims the property. Consider the case.

9. What is the distinction between *Public Law* and *Private Law*? How far is it received in English Law?
10. What are the different tests which have been proposed for distinguishing *civil injuries* and *crimes*?

CONSTITUTIONAL HISTORY AND LAW (PART I.) AND PUBLIC INTERNATIONAL LAW

The Board of Examiners.

**Candidates should answer seven questions only, of which
three should be from B.**

A.

1. What do you understand by the Constitution of a State? What are the principal contents of written Constitutions, and how may they be accounted for.

2. Write a historical note on the Third Estate.
3. What are the constitutional functions of the House of Lords? What are its present claims as to its powers in respect of Bills passed by the House of Commons, and how are they limited?
4. Describe the principal alterations which have taken place since 1832 in the relation of the Ministry to the House of Commons and to the country.
5. (a) Write a note on each of the following:—The Ballot Act 1872, the Corrupt Practices Act 1883, the trial of election petitions, the Septennial Act, *or*
(b) Write a note on the Budget, the Appropriation Act, the office of Auditor-General.
6. What are the principal limitations on the “right of public meeting”? Consider the effect of a proclamation forbidding the holding of a public meeting.

B.

1. What criticisms have been made on the use of the term “International Law”? Do you consider that “International Morality” is an efficient substitute?
2. What do you consider to be the object of international arbitration? What subjects have been deemed most appropriate for this mode of settling disputes?

3. What rights of States over water are required by International Law, and how are they qualified in the interests of other States? How far have States rights over rivers been subjected to regulation by treaty?
 4. What is the present international position in regard to the use of privateers, and the levy *en masse*?
 5. How does the law of war distinguish between combatants and non-combatants?
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CONSTITUTIONAL HISTORY AND LAW.— PART II.

The Board of Examiners.

Candidates should answer SIX questions only.

1. Compare the relative advantages and disadvantages of the machinery of Equity and common law.
2. Distinguish between the *Record* and the *Reports*. What is the object of a report, and how does this determine (a) the class of case reported; (b) the contents of the report.
3. What is meant by an *ex post facto* law? Consider the use of the term in relation to (a) case law, (b) statute law.
4. In what several senses is the term common law used?

5. Describe the constitution and function of the following bodies:—The Court of Exchequer Chamber, the Judicial Committee of the Privy Council, the Court of Appeal.
 6. Write a note on the principal features in the development of Equity, either (a) to the Restoration, or (b) to the close of the Chancellorship of Lord Eldon.
 7. What was the criminal jurisdiction of the Admiralty, and what became of it?
 8. Compare the government of New South Wales prior to 1842 with the government of the American colonies before the Revolution of 1776.
 9. What do you understand by responsible government? Describe the process by which it was established in Victoria.
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CONSTITUTIONAL HISTORY AND LAW.—

PART III.

The Board of Examiners.

Candidates should answer **FOUR** questions only.

1. What are the principal differences in the position of the Provinces in the Canadian Constitution and the States in the Australian Constitution?

2. How do you account for the progressive development of the Constitution of the United States, in view of the doctrine that the Constitution must receive an unvarying interpretation in accordance with the intention of its framers ?
 3. In case of any forcible attack upon the inter-State railway trains, what steps could be taken by the Federal Government for the protection of commerce and the mails ? Do you consider that the Commonwealth Parliament may prohibit the carriage by the mails or as inter-State commerce of correspondence or articles which in its opinion are detrimental to public morals ?
 4. In what cases does the Constitution (a) expressly subject, (b) expressly exempt, the States from the legislative or judicial power of the Commonwealth ?
 5. What is the doctrine of the exemption of instrumentalities laid down by the High Court in *D'Emden v. Pedder* ? Mention some cases in which it has been applied.
 6. What is the doctrine in the United States as to the exclusiveness of the commerce power in Congress ? Are there any provisions of the Commonwealth Constitution bearing upon the question of the application of that doctrine to the commerce power of the Commonwealth Parliament ?
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ADMINISTRATIVE LAW.

The Board of Examiners.

Candidates should answer **FOUR** questions only.

1. Where proceedings are taken under the Fugitive Offenders Act 1881, is it any objection that (a) the matters in respect of which surrender was demanded would be no offence if committed in Victoria; (b) it is proposed to try the fugitive after surrender for some offence other than that in respect of which the surrender was granted; (c) the offence was committed out of the territory of that British Possession which demands his surrender?
2. What are the powers of the Crown at common law in regard to the admission and expulsion of aliens? What are the principal provisions of the Immigration Restriction Act 1901?
3. Discuss the legal status and liabilities of the Railway Commissioners of Victoria.
4. The Marine Board has the duty of licensing pilots for Port Phillip, and may by regulations approved by the Governor in Council, fix the rates to be charged for pilotage and generally provide for the management and control of pilots in all matters relative to the efficient discharge of their duties. The X Shipping Company is required to take the services of Y, a pilot licensed by the Board and entitled under their regulations determining the order of employment to be engaged on this occasion, and

- (a) by reason of the negligence of *Y*, the company's vessel collides with another;
- (b) by reason of the defective eyesight of *Y* the vessel is run ashore.

Is the Board liable in either case?

- 5. In what circumstance can a person have a remedy against the Government of Victoria (a) under the Crown Remedies and Liabilities Act 1890; (b) under the Judiciary Act 1903?
 - 6. What proceedings, civil or criminal, may be taken (and by whom) in the following cases, assuming that some private damage may be shown in each case:—A public body charged with the duty of making and maintaining roads has (a) neglected to make a road; (b) failed to repair the road after notice that it requires repair, (c) employed a contractor to repair the road, but he has done the work so ill as to leave a place apparently safe in such a state that *A*'s horse coming thereon stumbles and suffers damage.
-

PRIVATE INTERNATIONAL LAW.

The Board of Examiners.

Candidates should answer **FIVE** questions only.

1. An English company, carrying on business in Queensland, issued preference stock carrying interest at 6 per cent. The Legislature of Queensland passed an Act imposing an income tax on all dividends earned in the colony, and authorizing companies to deduct from the dividend of each stockholder his proportion of the tax. Of the stockholders affected, some were resident in England, and had acquired their stock from the company there; others were resident in Queensland, and had acquired their stock there. Advise the company as to their liability to the stockholders.

2. (a) *A*, a person domiciled in England, comes on a visit to Victoria, and there enters into contracts with *X*, to be performed in Victoria. *A* leaves Victoria, and subsequently *X* brings an action against him in the Supreme Court for breach of the contracts. *A* appears, under protest, for the purpose only of objecting to the jurisdiction. Is his objection good?

If judgment is given against *A*, could the judgment, in your opinion, be sued on in England?

Or,

- (b) What is meant by the expressions "proper court," and "court of competent jurisdiction" as applied to foreign judgments? Is the former relevant?

3. (a) A British vessel of war in the territorial waters of a foreign State, with the consent of the ruler of that State, seizes a British vessel and prevents her from landing her cargo there. The British owners of the ship and cargo bring an action for damages in England against the commander of the war vessel.

Or,

- (b) A, an alien resident abroad publishes a libel in a foreign country upon another alien. The parties come to England, and the person defamed brings an action for libel. Under what circumstances will it succeed?
4. Are there any limitations upon the right of a foreign creditor to prove his debt against the Victorian estate of an insolvent or a deceased person in cases where there is a concurrent administration proceeding in another country?
5. In what cases do Victorian courts recognise the jurisdiction of foreign courts (a) in the assignment of a debtor's property; (b) in a suit for nullity of marriage; (c) in a petition for divorce; (d) in an action *in rem* as to moveable property; (e) in the discharge of a debt? (NOTE—Candidates need not answer more than Three of these five cases.)
6. What tests have been applied to determine what is a penal law?
-

LAW OF CONTRACTS AND PERSONAL
PROPERTY.

Mr. Duffy.

Write a short paper on each of the following: —

- (1) The history of local legislation with respect to absolute bills of sale.
 - (2) Stoppage *in transitu*.
 - (3) The maxim *Jus accrescendi inter mercatores locum non habet*.
 - (4) The various forms of action available at Common Law for the enforcement of possessory rights to pure personalty.
 - (5) Bailment.
 - (6) Accord and satisfaction.
 - (7) The Book Debts Act 1896.
 - (8) Novation.
 - (9) Executed and executory consideration.
 - (10) Liquidated damages.
-

THE LAW OF PROCEDURE.

Mr. C. J. Z. Woinarski.

A.—CIVIL PROCEDURE.

1. (a) With what indorsements may a writ of summons be indorsed, and what is the effect of omitting any of the requisite indorsements?
 - (b) How is service of a writ of summons effected when the defendant is an infant?
 - (c) How is service of a writ of summons effected in an action to recover land in case of vacant possession?
 - (d) How and when may a defendant enter his appearance to a writ of summons?

2. What provision is made by the Rules of the Supreme Court—
 - (a) As to the persons who may be joined in one action as plaintiffs?
 - (b) As to the procedure by a defendant who claims to be entitled to relief over against a person not a party to the action?
 - (c) As to *cestuis que trustent* being joined with their trustees as parties to an action?
 - (d) As to the cases in which particulars must be stated in the pleading of a party?
 - (e) As to discontinuance of an action (1) by leave, (2) without leave?
 - (f) As to inspection of documents referred to in the pleading or affidavit of an opposite party?
 - (g) As to the consequences of failure to comply with an order for discovery?

3. How do you enforce a judgment—
- (a) For the recovery of any property other than land or money ?
 - (b) Requiring any person to do any act other than the payment of money ?
 - (c) For the delivery of the possession of land ?
4. Set forth the procedure to be followed in levying a distress for rent.
5. Write a note upon the writ of Prohibition, and set forth the procedure by which the same is obtained.

B.—CRIMINAL PROCEDURE.

1. Write a note upon the disqualification of a magistrate to adjudicate by reason of interest.
2. What are the provisions of the Justices Act 1890 as to—
- (a) The mode of service of a summons and information ?
 - (b) The proof of service of a summons and information ?
 - (c) Substituted service of a summons and information ?
3. (a) In what respects may time and place affect the jurisdiction of a Court of Petty Sessions to hear an information ?
- (b) At what stage of the hearing of an information should an objection be taken to the jurisdiction of the Court ?

- (c) What course may a Court of Petty Sessions take upon a variance appearing between the evidence given and the information?
4. Explain the terms—*Recording sentence of death, arraignment, presentment, Bill of indictment, challenge to the array, special verdict, penal servitude, contempt of court.*

C.—EVIDENCE.

1. (a) In what cases is a declaration by a deceased person as to the cause of his death admissible in a criminal trial?
 - (b) In what cases is evidence given at a previous trial admissible, and how is it proved?
 - (c) In what cases can a plaintiff give parol evidence of the contents of a written document which he does not produce?
 - (d) In what cases can evidence be given to contradict a witness who denies matters put to him in cross-examination?
2. State the exceptions to the rule that the testimony of one witness is sufficient to establish any fact.
State the law as to right, and as to the restrictions upon the right of a witness to refresh his memory.
3. (a) *A* is presented with uttering, on the 7th July, 1906, a counterfeit half-crown, knowing it to be counterfeit. The prosecution tenders evidence that on the 6th and on the 9th of July, 1906, respectively, *A* had bought a glass of ale and tendered a bad half-crown in payment. Is the evidence admissible or not, and why?

- (b) *A, B, and C* sue *D* as partners upon an alleged contract respecting the shipment of bark. *D* tenders evidence of an admission by *A* that the bark was his exclusive property, and not the property of the firm. Is the evidence admissible or not, and why?
- (c) *A* is presented for larceny of a sheep, with a second count for receiving. The prosecution tenders evidence that five stolen lambs, and one other stolen sheep were in *A's* possession at the same time, and were dealt with by him in the same manner as the sheep, the subject of the prosecution. Is the evidence admissible or not, and why?

THE LAW OF WRONGS, CIVIL AND CRIMINAL.

Mr. C. J. Z. Woinarski.

- (a) Why, in an action of malicious prosecution, is it necessary for the plaintiff to allege and prove the termination of the proceedings in his favour?

(b) Why is a master liable in law for the acts, neglects, and defaults of his servants in the course of the service?
2. What is the law as to *recaption of goods*? Consider the following case:—

A entrusted *B*, his servant, with jewellery for sale on commission. Disputes arose between *A* and *B*, and *A* determined *B's* service and

demanded back the jewellery in *B's* possession, which *B* refused to deliver up. *A* thereupon, in *B's* absence from his bedroom in an hotel in Melbourne, unlocked *B's* bedroom door and repossessed himself of the jewellery, and *B* now sues *A* for trespass.

3. Explain the extent of their civil liability, if any, to each of the following persons respectively, in the events named:—

- (a) To a partner for a violent assault committed by his co-partner upon a customer of the firm.
- (b) To a host whose guest is injured by the carelessness of the host in opening a bottle of soda water.
- (c) To a husband for an antenuptial tort committed by his wife.
- (d) To a parent whose child has wilfully broken the valuable plate-glass window of a shop-keeper.
- (e) To a baker whose servant is injured by the breaking down of a delivery cart he was driving and which was not roadworthy.

4. (a) *Brinsmead v. Harrison*, L.R. 6 C.P. 584, Extract from the judgment of *Blackburn, J.*

“The question raised upon this record is whether the claim of the plaintiff against two joint wrongdoers is put an end to by a judgment recovered in an action against one of them without showing that that judgment has been satisfied.”

How was this question disposed of in the judgment?

- (b) *Watkin v. Hall*, L.R. 3 Q.B. 396, Extract from the judgment of *Blackburn, J.*

“The only questions are, whether or not an action will lie for stating—upon an occasion which does not show the communication to be privileged—that there is a rumour upon the Stock Exchange that the plaintiff, who is a trader, was in insolvent circumstances, and had failed; the defendant stating, not that the plaintiff was insolvent, but that there was a rumour to that effect; and whether it would be a justification to show the rumour did exist, and that the defendant had only repeated it, and stated at the time openly that it was only a rumour.”

How were these questions disposed of in the judgment?

5. Tell the facts of any case which you would cite and use if you were explaining each of the following propositions:—
- (a) It is not a wrong to offer advantages to customers who will deal with oneself to the exclusion of a rival.
 - (b) Where damage is the gist of an action, the time for bringing the action runs only from the actual happening of the damage.
 - (c) Where negligence is negatived, an action does not lie for injury resulting by accident from another's lawful act.
6. Explain the necessary proofs in an action of *seduction*, and consider the following case:—
- A*, a widow, sues *B*, for seduction of her daughter, *C*. The seduction took place in

the lifetime of *A*'s husband, *C*'s father, and while *C* was living with her parents, who were persons of humble rank. After the father's death *C* continued to reside with *A*, rendering her the ordinary household services. Two months after her father's death *C* was delivered of a child, the result of the seduction.

7. *A* was tenant of a house let to him by *B*, and in respect of which a quarter's rent was in arrear and owing by *A*, in October, 1906. In November, 1906, a distress for this rent was put in by *B*, and the bailiff who was employed to levy the distress, entered the house by forcibly breaking the chain of the front door and seized furniture which belonged to *C*, a lodger. *C* made the necessary declaration for the protection of his goods, and the bailiff thereupon restored them to *C*. Has *A* any, and what, right of action against *B*? Give the reasons for your answer?
8. *A* was killed by the negligence of *B*, a fellow servant, in the employ of *C*. Can *A*'s widow, who was dependent on him, sue *C* under the Wrongs Act 1890? Give the reasons for your answer.
9. (a) Is it lawful in any, and what, circumstances to set a man-trap or spring-gun or other instrument calculated to destroy human life or to inflict bodily harm?
- (b) Is a person who steals a dog, or one who is in possession of a dog knowing it to be stolen, liable to any, and what, penalty or punishment?

- (c) To constitute murder, within what time from the cause of death must the death actually take place?
 - (d) Can a person commit forgery of a document, no part of which is actually written by him?
 - (e) Is it forgery for a person who is the sole payee of a bond to alter it by lessening its amount?
10. Define *arson* at common law. What buildings might be the subject of arson at common law? To what extent must there be actual burning to constitute arson at common law, and would any degree of negligence amount thereto? In what respects is the statutory law of arson wider than the common law doctrine?
11. Give examples of cases in which the carrying off of some one else's goods will be unpunishable on account of their being appropriated under a *bonâ fide* claim of right.
12. Give examples of cases of fatal negligence which will constitute manslaughter.

EQUITY

Mr. J. E. Mackey.

Not more than EIGHT questions are to be attempted.

1. (a) Is the maxim Equity follows the law true of executory trusts?
- (b) Why, in Equity, is delay a bar to relief?
- (c) Apply the maxim Equity is Equality to the case of a joint purchase.
- (d) What is the equitable doctrine of constructive conversion?

2. *A*, *B*, and *C* were executors of the will of *X*, who died in 1898, and duly proved the will in that year. In 1906, the estate had been fully administered, and the net residue duly tendered by *A* and *B* to *Z*, the residuary legatee, together with the executors' final account and a request for a deed of release to themselves. *Z* finds (a) that *B*, one of the executors, was, at the testator's death, legally indebted to the testator in the sum of £350, and that this sum has never been called in, or repaid to the estate. (b) that *A* and *B* had allowed at a sum of £200, and after inquiry into the matter, a claim by their co-executor *C*, against the estate of the testator for £285, and that they had paid the £200 to *C* in 1903.

Advise *Z*.

3. An executor is advised by counsel that a trust fund is divisible between *A* and *B* (who are of age), and *C* (an infant) in equal thirds. Acting on this advice, duly communicated to the beneficiaries, he paid two-thirds to *A* and *B* on their receipt, and invested the remaining third for the benefit of *C*. It afterwards appeared that *B* and *C* were entitled to the fund in moities.

Have *B* and *C*, or either, or which of them any and what remedy, and against whom, in respect of the money wrongly paid to *A*? Give the reason for your answer.

4. (a) Distinguish between the responsibilities of trustees and executors for the acts and defaults of each other.
- (b) Can an executor rid himself of his personal liability in respect of the rents to accrue due,

- and the covenants and agreements contained in a lease held by the testator?
5. (a) What is the effect of the Statutes of Limitations on a legacy?
- (b) Where an action is brought by a beneficiary to recover land held under an expressed trust against the trustee or any person claiming through him, at what time and as against what person for the purpose of the law relating to limitations of actions is the right of action deemed to have first accrued?
6. (a) *A* devises Blackacre to trustees for sale and for division of the proceeds amongst six persons, one of whom (*X*) dies in *A*'s life-time; the rest of his real property *A* devises to *B*, and he bequeathes his personal estate to *C*. On the sale of Blackacre, who is entitled to the one-sixth share of the proceeds which would have gone to *X* if he had lived?
- (b) *A*, by his will, devises an estate to *B*. After making the will *A* contracts in writing to sell the estate to *C*. Before conveyance *A* dies leaving *B* surviving. Eventually *C* being unable to complete his contract is released from it by *A*'s executors who sell the lands to *D*. Who is entitled to the purchase money?
7. *A* owns an allotment of land No. 1, and *B* is the owner of the adjoining allotment No. 2. *B* takes possession of allotment No. 1 believing it to be No. 2. Afterwards *B* sells allotment No. 1 describing it as allotment No. 2 to *C*, who enters into possession and builds upon it. After *C* has completed his buildings *A* commences proceedings in ejectment to recover the land. *A* was aware of the intended sale to *C*, and that the

allotment *C* intended to buy was his, and he was also aware that *C* was building upon the land believing it to be his own.

Has *C* any defence to *A*'s action ?

8. *A*, having sold his reversionary interest in real estate, and received the purchase money, afterwards issues a writ to set aside the sale on the ground of fraud, which he succeeds in proving. In what circumstances, and upon what terms, will Equity grant relief?
9. What are the rights of beneficiaries against a trustee who has traded with the trust moneys, but subsequently replaced them in proper investments?
10. Write a note upon the equitable doctrine of Election.

THE LAW OF PROPERTY IN LAND AND CONVEYANCING.

Mr Guest.

1. What is meant by the legal estate in land?
When is the legal estate said to be outstanding?
2. *A* demised land to *B* as tenant from year to year, reserving a rent payable half-yearly. *B* went into possession, and died during the second half-year of the tenancy intestate, and *C* was appointed administrator of his estate. No one has been in possession since *B*'s death, and a year has now passed since the creation of the tenancy. What are the rights (if any) of *A* and *C* respectively to the possession? Give reasons.

3. Why in a conveyance on sale of land is it usual for the grant to be made not only "to" but also "to the use of" the purchaser?
4. What restriction exists, apart from Statute, on trusts to accumulate income? What restriction has been imposed by any, and what, Statute?
5. In what respects, and by what means, has the Conveyancing Act 1904 made it possible to reduce the length of conveyance on sale of an estate in fee-simple by trustees for sale, where part of the land included in the same title is retained unsold?
6. Land was conveyed "to the use of *A* and *B* and their heirs." *A* died, having by his will devised all his real estate, "including his share in the land" so conveyed to him and *B* as aforesaid, "unto and to the use of *C*" absolutely, and he appointed *B* the executor of his will, and probate thereof was granted to *B*. After the expiration of a year from *A*'s death *C* called upon *B* to convey to him *C* one-half of the land referred to, but *B* refused. What rights (if any) has *C*? Give reasons.
7. What is an easement? State shortly the rules as to the creation of easements.
8. *A* took a lease of land from *B* for five years. *B* was in fact a mortgagee in possession when he granted the lease, but *A* knew nothing of this fact when he accepted the lease. After the expiration of one year the mortgage was redeemed, and the land reconveyed to the mortgagor, who forthwith brought an action against *A* to recover possession. Can he succeed? Give reasons.

9. State the effect of the provisions of the Insolvency Act with regard to fraudulent preference.
 10. *A*, who died in 1890, by his will devised certain freehold land to *B* and his heirs, and bequeathed certain leasehold land to *C* absolutely, and certain other freehold land of *A* was undisposed of. Probate of the will was subsequently granted to *D*. How was the title to each of the lands mentioned affected (if at all) by the grant of probate? Give reasons.
 11. *A* was registered proprietor of land under the Transfer of Land Act 1890. *B*, by means of a forged transfer, became registered as proprietor, and in consideration of natural love and affection he transferred the land to his daughter *C*, and the transfer was duly registered. The daughter had no notice of the forged transfer. What are the rights of *A* and *C* respectively to the land? Give reasons.
 12. What is the effect of a restraining on anticipation in the case of a married woman with respect to property settled on her for her separate use? Does it operate after she becomes a widow, or if she subsequently re-marries? Give reasons.
-

APPLIED MECHANICS.

FIRST PAPER.

Professor Kernot.

1. Write a short essay on laboratory and field extensometers.
2. A circular column is 12 feet high and 2 feet diameter, and is surmounted by a rectangular block 3 feet square and 4 feet high. The material weighs 100 lbs. per cubic foot. Calculate the velocity and pressure of wind needed to overturn it.

A punt is 40 feet long 30 feet wide and 5 feet deep, and weighs 20 tons. Compute the weight that must be put at one end in order to reduce the draft of water to zero at the other.
4. A beam 20 feet long is supported at the ends, and is loaded with 500 lbs. per foot in length, and also with 1,000 lbs. at 5 feet from one end. Draw to scale moment and shear diagrams.
5. What is a modulus of section? How would you find it for a beam of irregular form?

HYDRAULIC ENGINEERING.

FIRST PAPER.

The Board of Examiners.

1. Design runner, casing, suction-pipe, and discharge-pipe, for a centrifugal pump, capable of lifting 40 cubic feet of water per second to a height of 200 feet. Total length of pipes which have no serious bends = 4,000 feet. Give speed of runner and the brake horse-power required to drive it.

Note.—The calculations must be accompanied by an explanation of their scientific basis. The mere use of formulæ, without explanation of them, will not be accepted as an answer.

HYDRAULIC ENGINEERING.

SECOND PAPER.

The Board of Examiners.

On the accompanying topographic map is shown a mining town named Grass Valley. The positions of several mines, within a few miles of the town, are also shown.

N.N.W. from the town is shown a service reservoir, distinguished on the map by being surrounded by a circle drawn with blue pencil.

Assume the population within the dotted boundary line *ABCDEF* to be 8,000, and that the consumption within that area for domestic, mining, and manufacturing purposes will be at rate of 120 Imperial gallons per head.

The mines, lying outside the said boundary which can be supplied from the said reservoir, may each be assumed to require 17,000 gallons a day.

The buildings are mostly wooden, and ample provision for fire extinction is desired.

Determine the capacity of the service reservoir, and design a reticulation system for the district.

State clearly the hydraulic formulæ or tables which you employ for determining the sizes of the pipes, and the authorities for the formulæ or tables.

Give your reasons for choosing one system of reticulation in preference to others.

MECHANICAL ENGINEERING.—PART I.

SECOND PAPER.

Professor Kernot.

1. Sketch and describe all the usual fittings of an ordinary Cornish boiler. What points would you specially note if reporting on the safety of such a boiler?
 2. Write a short essay on boiler explosions, their causes, and how they should be guarded against.
 3. Describe some good form of variable expansion apparatus for steam-engines, giving full details and method of determining proportions of various parts.
 4. What is a compound engine, and what advantages has it over a simple engine. Under what circumstances would you recommend—a simple, a compound, or a triple expansion engine, either condensing or non-condensing?
 5. State all you know as to devices for regulating the speed of engines and other motors.
-

MECHANICAL ENGINEERING.—PART II.

FIRST PAPER.

Professor Kernot.

1. Supply outline side elevation to scale, and give all important dimensions for a locomotive of about 16,000 lbs. traction power, suitable for passenger traffic on an up-country line having curves of 20 chains radius and rather light rails.
 2. State the standard equation for the tractive power of a locomotive, and apply it to that in the previous question. Discuss also the proper relation of tractive power and adhesion weight.
 3. Write a short essay on rack locomotives for steep mountain railways.
 4. Show diagrammatically as many systems of combining high tractive power with great flexibility on curves as you can, and discuss their relative advantages.
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MECHANICAL ENGINEERING.—PART II.**SECOND PAPER.***Professor Kernot.*

1. Discuss the various methods of ignition in internal combustion engines.
2. Describe carefully, with sketches, the principal systems of refrigerating machinery in common use, and discuss their relative advantages and disadvantages.
3. What are the points to be attended to in compressing air for mining purposes, especially in a hot, dry, and dusty climate?
4. What system of pumping machinery would you recommend—
 - (a) For lifting 1,000,000 gallons of water in 24 hours 100 feet?
 - (b) For lifting an equal quantity of sewage 20 feet in the same time?
5. Sketch out a system of electric light and power supply for a population of 100,000, occupying an area 1 mile square on the banks of a salt water estuary, and also a suburban population of 50,000, occupying an area of 4 miles square surrounding the preceding.

CIVIL ENGINEERING.—PART I.

FIRST PAPER.

The Board of Examiners.

1. Design a trussed beam of 49 feet span, to carry a moving load of 15 tons. This load may be assumed to be applied at a point. Timber in beam to be ironbark, weighing about 70 lbs. per cubic foot. Tension rods to be of mild steel. Struts to be at designer's option. Struts to be two in number. No diagonal members.

Depth, from centre of beam to centre of of tension rods at mid span = 6 feet.

Note.—The scientific meaning of each step in the calculations must be explained. The mere use of formulæ, or the statement that certain assumptions are made, without explanation of the reasoning on which these formulæ or assumptions are based, will not be accepted as an answer.

CIVIL ENGINEERING.—PART I.

SECOND PAPER.

The Board of Examiners.

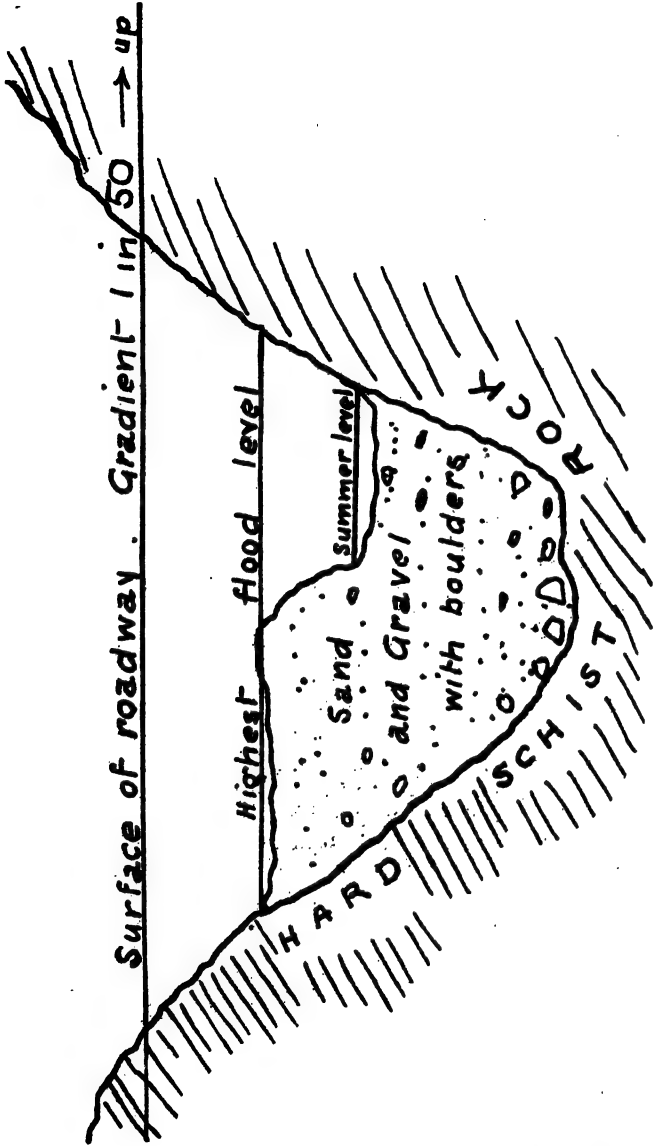
1. Design a bridge, of materials more permanent than wood, for the site sketched on opposite page. The bridge to carry ordinary road traffic, and to be safe when a steam-roller weighing 15 tons crosses it. Clear width to be 28 feet, including two footpaths, each 6 feet wide.

Floods bring quantities of timber down and occasionally change the position of the channel

Scale, 40 feet to 1 inch.

NOTE.—Candidates must be explicit as to the scientific principles involved in their designs. The mere use of formulæ, without explanation or mention of authority, will not be accepted as an answer.

Surface of roadway . Gradient - 1 in 50 → up



SURVEYING.—PART I.

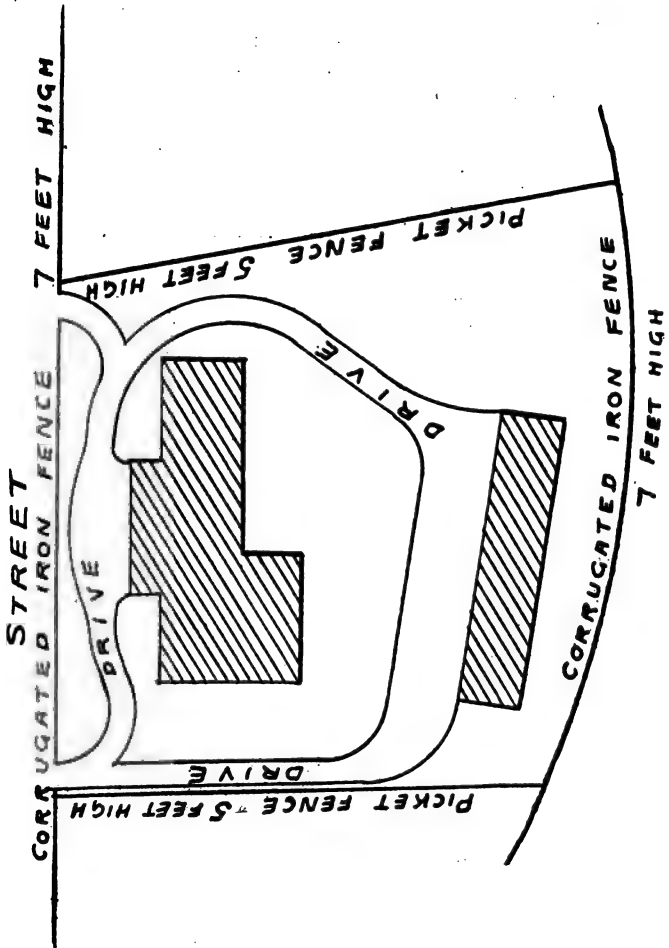
FIRST PAPER.

The Board of Examiners.

1. Show what lines you would measure when making a chain survey of the piece of land, with buildings on it, shown in sketch on opposite page, access to adjacent blocks being permitted.

Explain how you would plot the work afterwards.

At station A the reading of an aneroid barometer is 29·86. A barograph at the same station reads 29·79 at the same time. At station B the aneroid reading is 28·12, and it is found that the barograph, which was left at A, recorded 29·74 at the time when the reading at B was taken. The temperature recorded by a thermometer in the shade when the reading at A was taken was 49° F.; and at B, when the aneroid was held there, the temperature in the shade was 39° F. How high is B above A ?



3. A transit theodolite is employed to measure the horizontal angle between a church spire and a pole on the ground. When the instrument is directed to the point of the spire the telescope makes an angle of 40° with the horizontal; when directed to the pole the telescope is horizontal.

Explain the effect on the measurement caused by (1) an error in collimation, and (2) an error in the horizontal axis. Illustrate your answer by sketches.

How would you proceed in order to eliminate the effects of the errors mentioned ?

SURVEYING.—PART I

SECOND PAPER.

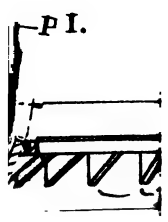
The Board of Examiners.

1. Eliminate the effects of local attraction from the portion of a magnetic traverse shown in sketch on pages 411 and 412. The azimuths written near the corners are those obtained by the compass at those corners.
2. Levels are given at height of formation in a railway cutting. The field-notes, entered in a level-book during the process of giving these levels, are reproduced below in incomplete form. Complete the notes. Check the figures. Explain the operation to which these notes refer.

Back Sights.	Inter-mediate Sights.	Fore Sights.	Rise.	Fall	Re-duced Levels.	Chainage.	Remarks.
0·27					400·26		Benchmark No. 16
1·04		17·43					Change
8·61		16·95					Change
					371·06	17 29	Formation level
					369·06	17 31	Formation level
					367·06	17 33	Formation level
17·11		0·87					Change
16·88		0·65					Change
		7·98					Benchmark No. 16

3. What is the weight of the portion of a cylinder for a bridge pier, shown in section plan on pages 411 and 412?
4. Being provided with a 2-ft. rule, a tape line, a pair of callipers, how would you make measurements of the casting mentioned in the question, supposing it to be lying on ground?

P I.



... may wear points peculiar to ...

CO

Y
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

METALLURGY.—PART I.

The Board of Examiners.

Candidates need not answer more than Six of the following questions including those marked 1, 2, 3, and 4, which are compulsory.

1. How would you estimate silica, barium, iron and manganese in a blast furnace slag?
2. Describe a volumetric method suitable for the estimation of zinc in mixed sulphide ores. How would the presence of salts of iron, copper and manganese affect the titration?
3. Give a brief description of the cyanide method for the estimation of copper volumetrically. Point out the principal sources of error and the best means of avoiding them. How would the presence of salts of zinc, iron, aluminium and lead affect the titration?
4. Why are arsenical and antimonial pyrites more difficult to assay for gold than pure iron pyrites? Outline two methods—one all dry and the other combined wet and dry—for the estimation of gold in antimonial pyrites.

How would you expect the recovery of gold to be affected by a preliminary roast, when treating such material?

5. When lead is estimated gravimetrically, in what form is it usually weighed?

Outline a good, general-purpose method for the estimation of lead volumetrically, and point out any weak points peculiar to such method.

CC

6. Write a short paper upon the separation and estimation of antimony and arsenic.
 7. How would you estimate tin, in a very low grade ore, without preliminary mechanical concentration?
 8. Under what conditions as regards grade and character of material, and for what reasons, would you use—
 - (a) an all-dry method for estimating gold;
 - (b) an all-dry method for estimating silver;
 - (c) a combined wet and dry method for estimating gold;
 - (d) a combined wet and dry method for estimating silver?
-

NATURAL SCIENCE.

PHYSICAL GEOGRAPHY.

The Board of Examiners.

1. Define the terms declination and dip respectively.
Indicate the nature of the different kinds of periodical variations which are known to occur in these elements of terrestrial magnetism.
 2. Describe the mallee country, referring especially to its position, origin, soil, and climate.
 3. Draw a sketch map of Victoria, and indicate on it the salient features in its physical geography.
 4. Explain the nature of an earthquake shock, the different causes to which it may be due, and the nature of the record of the shock given by a self-recording seismograph.
 5. Explain the nature of the Atlantic and Pacific types of coasts, and show how far each type is represented on the Australian coast line.
 6. Explain the relations which exist in different parts of a river's course between the slope of the thalweg, the shape of the valley in cross-section, and the capacity of the river for the work of transport, corrasion, and lateral erosion.
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PHYSIOLOGY.

FIRST YEAR.

MESSAGE CANDIDATES.

The Board of Examiners.

1. What means do we possess of regulating the temperature of the body? How is it that the temperature of the body is practically the same on a hot day as on a cold?
 2. Describe exactly the means we possess of increasing the capacity of the thorax. Mention, also, the differences that exist between inspired and expired air.
 3. What is meant by the term *Arterial blood pressure*? What advantages does such pressure confer on us? What means do we possess whereby we can modify arterial blood pressure?
 4. Describe a voluntary muscle, and tell what you know about its contraction.
 5. What is the composition, and what are the chief uses, of lymph? Trace its flow from, say, the tissues of the foot, until it reaches the blood stream.
-

PHYSIOLOGY.—PASS.

THIRD YEAR MEDICINE.

The Board of Examiners.

1. What do you mean by the term *astigmatism* as applied to the human eye? By what means can its objectionable results be obviated?
2. What means are at the disposal of the physiologist in investigating the paths of conduction in the spinal cord?
3. What substances other than dextrose can give reduction in urine? How can these bodies be chemically differentiated?
4. What are the essential differences between cow's milk and human milk? What changes are produced in cow's milk by boiling?
5. What is the effect on systemic arterial blood-pressure of—
 - (a) strong expiratory muscular action with closed glottis,
 - (b) asphyxia,
 - (c) section of cord in lumbar region?
6. Describe the changes that occur in a skeletal muscle on cessation of the circulation.

PHYSIOLOGY AND HISTOLOGY.—HONOURS.

THIRD YEAR MEDICINE.

The Board of Examiners.

1. By what methods can the fundus of the eye be examined? Explain the principles on which the apparatus employed is constructed, and give some account of the history of its discovery.
2. If a hitherto undescribed alkaloid were prepared from an Australian plant, what experiments would you suggest should be carried out in order to determine its physiological action?
3. A patient has been unable since birth to flex his right arm at the elbow by any effort of will. An exploratory operation revealed an apparently normal *musculo cutaneous* nerve, electrical stimulation of which produced vigorous flexion. What further investigations, exclusive of exploratory operation, would you make in the living patient, and what structures would you specially examine in case of death and necropsy in order to throw light on the causation of this paralysis?
4. "Experiments made on the horse conclusively prove that asparagin can act as a protein sparer." Comment on this statement of fact.
5. A number of men who have been engaged in fighting a bush fire complain of severe frontal headache. To what might this be due?

ANATOMY.

PASS AND FIRST HONOURS PAPER

Time : 9.30 a.m. to 12.30 p.m.

N.B.—The Second Honours Paper will be given this afternoon from 2.30 p.m. to 4.30 p.m. The oral list for all Candidates will be posted at the Registrar's Office.

*Examiners : The Professor of Anatomy and
Dr. G. C. Rennie.*

1. State how you would map out the right kidney from behind. Describe layer by layer the various structures which would be met with within the area you have described, in order to expose the posterior surface of the viscus.
2. Describe the arch of the aorta under the following heads :—
 - (a) Its relation to the surface of the body.
 - (c) Its relations to bones.
 - (b) Its relations to other structures.
3. If the external popliteal nerve were divided just above its bifurcation, state what structures would be paralysed, and discuss the position which would be assumed by the limb, giving the reasons for your opinion.
4. Discuss the general appearances of a transverse horizontal section made through Addison's transpyloric plane.

ANATOMY.

SECOND HONOURS PAPER.

Time : 2.30 to 4.30 p.m.

N.B.—No Candidate can enter for this Paper who has not previously answered the Pass Paper in Anatomy.

*Examiners : The Professor of Anatomy, and
Dr. G. C. Rennis.*

1. Describe the condition of the mid-gut and yolk sac in an embryo of four weeks. Name the portions of the adult alimentary canal developed from these embryonic structures, and describe how the changes are brought about. How do you account for the presence, in the adult, of a Meckel's diverticulum? State the commonest position, and the relative frequency, of such an abnormality.
 2. Describe the microscopic appearances of a transverse section through the medulla oblongata at the level of the decussation of the fillet.
 3. Discuss briefly the vertebral theory of the skull.
 4. Describe (a) the innervation of the tongue, (b) the cutaneous innervation of the upper limb, with an account of the spinal segments concerned.
-

MATERIA MEDICA AND PHARMACY.

The Board of Examiners.

1. Express in terms of the Metric system, and give the Latin equivalents of: ten minims, three fluid drachms, two pints, twenty grains, half-ounce.
2. Give the Latin synonyms, and the quantities of active ingredients in one fluid ounce of each of the following:—
Chlorodyne, Donovan's Solution, Easton's Syrup, Laudanum, Ipecacuanha Wine.
3. Write a prescription for a "Fly Blister," with appropriate directions. Use unabbreviated Latin throughout.
4. Name the official alkaloids of Opium, with their preparations and doses.
5. State accurately the sources and doses of:
Ext. Belladon. Alc., Infus. Digitalis, Tinct. Aconiti, Tinct. Cannab. Ind., Tinct. Strophanthi.
6. Give the natural orders, botanical names, parts used, and active principles of: Chamomile, Foxglove, Hemlock, Henbane, Indian Hemp.
7. Write all you know of Dilute Hydrocyanic Acid, and medicinal substances containing it.

8. Compare and contrast Calomel and Corrosive Sublimate. Give their sources and preparations, with doses.
 9. Name the official compounds of Calcium, and their preparations. Give the doses of such as are used in medicine.
 10. Write a short essay on the "Combination of Medicines."
-

THEORY AND PRACTICE OF MEDICINE.

The Board of Examiners.

1. Describe the diagnosis of chronic enlargement of the spleen, as contrasted with other conditions which may be confused with it.
2. Describe the diagnosis, and discuss the special risks, of aortic regurgitation, with the treatment when that is called for.
3. Give a description of a paroxysm of true bronchial asthma, with the treatment, both at and between attacks.
4. Discuss the symptoms and diagnosis of tubercular meningitis, in a child of seven years, and describe the naked-eye *post-mortem* appearances.
5. Give an account of the symptoms and diagnosis of gout, in its acute and sub-acute forms, and of the appropriate treatment, general and medicinal.

In any treatment proposed full prescriptions should be written.

FORENSIC MEDICINE.

The Board of Examiners.

1. How would you distinguish between injuries inflicted during life and after death?
 2. A man is found to have died from extravasation of blood on the brain. To what causes may it have been due, and how would you decide between natural causes and injury?
 3. Give the signs and symptoms of Pregnancy, and the appearances indicating recent delivery.
 4. What are the signs of maturity and of live birth in the dead body of a newly-born child?
 5. Describe the symptoms, treatment, and *post-mortem* appearances of poisoning by phosphorus, belladonna, and carbolic acid, respectively.
-

OBSTETRICS AND GYNÆCOLOGY.

The Board of Examiners.

1. Describe the formation of the decidua, and the mode of attachment of the ovum to the uterus.
 2. Give the mechanism of a breech presentation, and describe the management of its delivery.
 3. Describe the signs, symptoms, and management of an inevitable miscarriage.
 4. Give the causes, signs, and symptoms of acute salpingitis.
 5. (a) Describe the operation of curettage.
(b) Enumerate the conditions to which the operation is applicable, and mention the contra-indications.
-

GENERAL PATHOLOGY AND BACTERIOLOGY.

The Board of Examiners.

1. Describe minutely the repair of a simple fracture of a long bone, and state how such repair may be interfered with.
 2. Describe minutely the vascular and textural changes which occur in acute non-suppurative inflammation of a serous membrane, with ultimate formation of adhesions.
 3. Describe the causation, appearance, position, composition, and briefly the possible consequences of *ante-mortem* thrombi in the heart.
 4. State what you know concerning adenomata.
 5. Describe the usual macroscopic appearances in acute general tuberculosis, and the microscopic characters of the lesions in the lungs.
 6. Describe the appearance, staining reactions, and cultural characters of *three* of the chief pyogenic micro-organisms.
 7. Describe the products of bacterial growth in nutrient broth, taking as example *one* of the following:—Anthrax bacillus, diphtheria bacillus, or putrefactive organisms.
-

SPECIAL PATHOLOGY.

The Board of Examiners.

1. Describe, with examples, the causes of necrosis of bone.
 2. Describe the various forms of suppuration in the liver. Discuss their causation.
 3. Discuss the characters and causation of primary renal dropsy.
 4. Describe the macroscopic characters of carcinoma of the stomach in its several forms and positions.
 5. Describe the characters of the blood in spleno-medullary (myelogenous) leukæmia. Give one method of making and staining differentially a blood film from such a case, and state how the kinds of leucocytes may be distinguished with the method chosen.
 6. Describe the macroscopic and microscopic changes seen in grey hepatisation of the lungs, and state how you would proceed to diagnose pneumococcus from bacillus pestis in sputum.
-

SURGERY.

The Board of Examiners.

1. Describe in detail the treatment of strangulated femoral hernia.
 2. Describe the treatment of tubercular disease of the elbow-joint.
 3. Comment on the cases in which you would trephine after head injury.
 4. Comment on the differences between syphilis and cancer of the tongue.
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HARMONY.

FIRST YEAR DIPLOMA.

The Board of Examiners.

1. Work Question No. 5 in the November paper very carefully, using the following melody:—

2. Add three parts above the Figured Bass.

7 #6 6 6 #

(b) (c)

- 6 - 9 - 6 - #

(d) (e)

6 - 9 = 3 3 8 7 5

3. Explain why quavers at (a) and (c) are on one tail. What effect is shown in the value of the Soprano note? Name the chords at (b) and (d). Justify the doubled Major Third at (e)

4. Add three parts below the Chorale Melody—

- (a) in plain four-part harmony;
 (b) introducing suspensions and passing notes.

HARMONY.

FIRST YEAR MUS. BAC.—SECOND YEAR
DIPLOMA.*The Board of Examiners.*

1. Work Question 2 in the November paper very carefully, with the following as the melody :—



2. Add Soprano, Alto, and Tenor to the Figured Bass.

3. Write two Divisions on the Ground Bass—

The first in three-part harmony, the second in four parts, showing suspensions, passing notes, &c.

Exercise 3 consists of three staves of music in C major, 2/4 time. The first staff is the ground bass: C4 (quarter), D4 (quarter), E4 (quarter), F4 (quarter), G4 (quarter), F4 (quarter), E4 (quarter), D4 (quarter), C4 (quarter). The second staff shows a three-part harmonic division: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (quarter), F4-E4 (quarter), D4-C4 (quarter), B4-A4 (quarter), G4 (quarter). The third staff shows a four-part harmonic division: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (quarter), F4-E4 (quarter), D4-C4 (quarter), B4-A4 (quarter), G4 (quarter).

4. Accompany the melody by three vocal parts.

Adagio.

Exercise 4 consists of four staves of music in G major, 2/4 time. The first staff is the melody: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (quarter), F4 (quarter), E4 (quarter), D4 (quarter), C4 (quarter). The second staff is the first vocal part: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (quarter), F4 (quarter), E4 (quarter), D4 (quarter), C4 (quarter). The third staff is the second vocal part: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (quarter), F4 (quarter), E4 (quarter), D4 (quarter), C4 (quarter). The fourth staff is the third vocal part: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (quarter), F4 (quarter), E4 (quarter), D4 (quarter), C4 (quarter).

HARMONY.

THIRD YEAR DIPLOMA.

The Board of Examiners

1. Set one of the following passages:—

(a) For voice, with accompaniment—

What says thy song thou joyous thrush
 Up in the walnut tree?
 I love my love because I know
 My love loves me.

(b) For four voices, unaccompanied—

A voice so thrilling ne'er was heard
 In spring time from the cuckoo bird,
 Breaking the silence of the seas
 Among the farthest Hebrides.

Or,

Write an original passage of about sixteen bars beginning in E Flat, and modulating to the following keys in order:—C Minor, B Flat Major, F Minor, B Major. Introduce a Minor Thirteenth, and an Inversion of the Dominant Eleventh; also a Neapolitan Cadence, and Tonic Pedal Point.

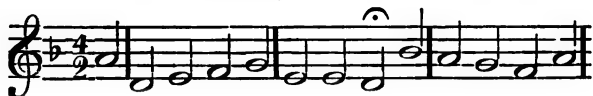
2. Harmonise the Chorale melody—

(a) In plain four-part harmony.

(b) With continuous crotchet movement.

(c) With melody in the Tenor.

(d) Introducing suspensions, passing notes, and varied harmony.



3. Write an accompaniment to the melody for piano-forte or strings. The suggestion given for accompaniment need not be followed.

Moderato.



Suggested accompaniment figure (first bar).

TERMINOLOGY.

FIRST YEAR.

The Board of Examiners.

1. Explain the terms—Chorale, Ground Bass, Madrigal, Tritone, Opera di Camera, Glee, Recitative, Figured Bass.
2. Shew the derivation or original use of—Oratorio, Solfa, Minim, Violin, Discant, Baritone, Opera.
3. Write the passage A with Tenor Clef.
4. Write the passage B with Alto Clef.
5. Write the passage C with Treble and with Bass Clef.
6. Write the passage D as it would appear in—(a) its Tonic Minor; (b) its Relative Minor.

Shew the proper signature in each case.

FINAL HONOUR EXAMINATIONS,
MARCH, 1907.

FINAL HONOUR EXAMINATION IN ARTS
AND SCIENCE.

SCHOOL OF CLASSICAL PHILOLOGY.

GREEK TRANSLATION.

The Board of Examiners.

Translate, with brief notes in the margin—

- (a) ὦ γέρον, οὐχ ἕκασ οὗτος ἀνὴρ, τάχα δ' εἴσεται αὐτός,
ὃς λαὸν ἠγείρα· μάλιστα δέ μ' ἄλγος ἰκάνει.
οὔτε τιν' ἀγγελίην στρατοῦ ἔκλυον ἐρχομένοιοι,
ἦν χ' ὑμῖν σάφα εἶπω, ὅτε πρότερός γε πυθοίμην,
οὔτε τι δήμιον ἄλλο πεφάυσκομαι οὐδ' ἀγορεύω,
ἀλλ' ἐμὸν αὐτοῦ χρεῖτος, ὃ μοι κακὸν ἔμπεσεν οἴκῳ,
δοιά· τὸ μὲν πατέρ' ἐσθλὸν ἀπώλεσα, ὅς ποτ' ἐν
ὑμῖν
τοῖσδεσιν βασιλευε, πατήρ δ' ὡς ἠπιος ἦεν·
νῦν δ' αὖ καὶ πολὺ μείζον, ὃ δὴ τάχα οἶκον ἅπαντα
πάγχυ διαρραΐσει, βίον δ' ἀπὸ πάμπαν ὀλέσσει.
μητέρι μοι μνηστῆρες ἐπέχραον οὐκ ἔθελούση,

τῶν ἀνδρῶν φίλοι υἱες οἱ ἐνθάδε γ' εἰσὶν ἄριστοι,
οἳ πατρὸς μὲν ἐς οἶκον ἀπερρίγασιν νέεσθαι
Ἰκαρίου, ὡς κ' αὐτὸς ἐεδνώσαιο θυγάτρα,
δοίη δ' ᾗ κ' ἐθέλοι καὶ οἱ κεχαρισμένος ἔλθοι.
οἱ δ' εἰς ἡμέτερον πωλεύμενοι ἤματα πάντα,
βοῦς ἱερεύοντες καὶ οἷς καὶ πίονας αἶγας,
εἰλαπινάζουσιν πίνουσί τε αἶθοπα οἶνον
μαψιδίως· τὰ δὲ πολλὰ κατάνεται. οὐ γὰρ ἔπ' ἀνὴρ
οἶος Ὀδυσσεὺς ἔσκεν, ἀρῆν ἀπὸ οἴκου ἀμῦναι.
ἡμεῖς δ' οὐ νύ τι τοῖοι ἀμνόμεν' ἤ καὶ ἔπειτα
λευγαλέοι τ' ἐσόμεσθα καὶ οὐ δεδαηκότες ἀλκήν.

—(HOMER.)

- (b) τοῦτ' ἔστι τουτὶ τὸ κακὸν αὐθ' οὐγὼ λέγον.
τὸ γὰρ παράδειγμα τῶν μανιῶν ἀκούετε·
ἃ δ' εἶπε πρῶτον ἠνίκ' ἤρχεθ' ἢ χολὴ
πέυσεσθ'. ἔφασκε γὰρ πρὸς αὐτὸν ἐνθαδί·
πῶς ἂν ποτ' ἀφικοίμην ἂν εὐθὺ τοῦ Διός;
ἔπειτα λεπτὰ κλιμάκια ποιούμενος,
πρὸς ταῦτ' ἀνερριχᾷτ' ἂν εἰς τὸν οὐρανόν,
ἕως ξυνετρίβῃ τῆς κεφαλῆς καταρρυεῖς.
ἐχθὲς δὲ μετὰ ταῦτ' ἐκφθαρεῖς οὐκ οἶδ' ὅποι
εἰσήγαγ' Αἰτναῖον μέγιστον κάρθαρον,
κἄπειτα τοῦτον ἱπποκομεῖν μ' ἠνάγκασεν,
καὐτὸς καταψῶν αὐτὸν ὥσπερ πωλίον,
ᾧ Πηγάσειον, φησί, γενναῖον πτερόν,
ὅπως πετήσει μ' εὐθὺ τοῦ Διὸς λαβών.
ἀλλ' ὅ τι ποιῆι τηδὶ διακύψας ὄψομαι.
οἴμοι τάλας· ἴτε δεῦρο δεῦρ', ᾧ γείτονες·
ὁ δεσπότης γάρ μου μετέωρος αἶρεται
ἱππηδὸν εἰς τὸν αἴρ' ἐπὶ τοῦ κάρθάρου.

—(ARISTOPHANES.)

- (c) Μουσάων δὲ μάλιστα τίειν ἱερούς ὑποφήτας,
ὄφρα καὶ εἰν Ἀίδαο κεκρυνμένος ἐσθλὸς ἀκούσης,
μηδ' ἀκλεῆς μύρηαι ἐπὶ ψυχροῦ Ἀχέροντος,

ὥσεί τις μακέλα τετυλωμένος ἔνδοθι χεῖρας
 ἀχὴν ἐκ πατέρων πενίην ἀκτήμονα κλαίων.
 πολλοὶ ἐν Ἀντιόχοιο δόμοις καὶ ἄνακτος Ἀλεῦα
 ἄρμαλιὴν ἔμμηνον ἐμετρήσαντο πενέσται·
 πολλοὶ δὲ Σκοπάδῃσιν ἐλαυνόμενοι ποτὶ σακοῦς
 μόσχοι σὺν κεραῆσιν ἐμυκήσαντο βόεσσι,
 μυρία δ' ἄμ πεδίον Κρανώνιον ἐνδιάσασκον
 ποιμένες ἔκκριτα μῆλα φιλοξείνοισι Κρεώνδαις·
 ἀλλ' οὐ σφιν τῶν ἡδός, ἐπεὶ γλυκὺν ἐξεκένωσαν
 θυμὸν ἐς εὐρείαν σχεδίαν στυγνοῖο γέροντος,
 ἄμναστοι δὲ τὰ πολλὰ καὶ ὄλβια τῆνα λιπόντες
 δειλοῖς ἐν νεκύεσσι μακροῦς αἰῶνας ἔκειντο,
 εἰ μὴ δεινὸς ἀοιδὸς ὁ Κήσιος αἰόλα φωνέων
 βάρβιτον ἐς πολύχορδον ἐν ἀνδράσιθῆκ' ὀνομαστούς.

—(THEOCRITUS.)

- (d) αὐτόθεν δὴ διανοήθητε ἢ ὑπακούειν πρὶν τι βλαβῆ-
 ναι, ἢ εἰ πολεμήσομεν, ὡς ἔμοιγε ἄμεινον δοκεῖ
 εἶναι, καὶ ἐπὶ μεγάλῃ καὶ ἐπὶ βραχείᾳ ὁμοίως
 προφάσει μὴ εἰζόντες μηδὲ ζῆν φόβῳ ἔζοντες ἃ
 κεκτήμεθα. τὴν γὰρ αὐτὴν δύναται δούλωσιν ἢ τε
 μεγίστη καὶ ἐλαχίστη δικαίωσις ἀπὸ τῶν ὁμοίων πρὸ
 δίκης τοῖς πέλας ἐπιτασσομένη. τὰ δὲ τοῦ πολέμου
 καὶ τῶν ἐκατέροις ὑπαρχόντων ὡς οὐκ ἀσθενέστερα
 ἔξομεν γνῶτε καθ' ἕκαστον ἀκούοντες. αὐτουργοί τε
 γὰρ εἰσι Πελοποννήσιοι καὶ οὔτε ἰδίᾳ οὔτε ἐν κοινῷ
 χρήματά ἐστιν αὐτοῖς, ἔπειτα χρονίων πολέμων καὶ
 διαποντίων ἄπειροι διὰ τὸ βραχέως αὐτοὶ ἐπ' ἀλλή-
 λους ὑπὸ πενίας ἐπιφέρειν. καὶ οἱ τοιοῦτοι οὔτε
 ναῦς πληροῦντες οὔτε πεζᾶς στρατιᾶς πολλάκις
 ἐκπέμπειν δύνανται, ἀπὸ τῶν ἰδίων τε ἅμα ἀπόντες
 καὶ ἀπὸ τῶν αὐτῶν δαπανῶντες καὶ προσέτι καὶ
 θαλάσσης εἰργόμενοι· αἱ δὲ περιουσίαι τοὺς πολέμους
 μάλλον ἢ αἱ βίαιοι ἐσφοραὶ ἀνέχουσι. σώμασί τε
 ἐτοιμότεροι οἱ αὐτουργοὶ τῶν ἀνθρώπων ἢ χρήμασι
 πολεμεῖν, τὸ μὲν πιστὸν ἔχοντες ἐκ τῶν κινδύνων

κᾶν περιγενέσθαι, τὸ δὲ οὐ βέβαιον μὴ οὐ προανα-
 λώσειν, ἄλλως τε κᾶν παρὰ δόξαν, ὅπερ εἰκός, ὁ
 πόλεμος αὐτοῖς μηκύνηται. μάχη μὲν γὰρ μιᾷ πρὸς
 ἅπαντας Ἕλληνας δυνατοὶ Πελοποννήσιοι καὶ οἱ
 ξύμμαχοι ἀντισχεῖν, παλεμεῖν δὲ μὴ πρὸς ὁμοίαν
 ἀντιπαρασκευὴν ἀδύνατοι, ὅταν μήτε βουλευτηρίῳ
 ἐνὶ χρόμειναι παραχρησάμετι ὀξείως ἐπιτελώσι, πάντες
 τε ἰσόψηφοι ὄντες καὶ οὐχ ὁμόφυλοι τὰ ἐφ' ἑαυτὸν
 ἕκαστος σπεύδη.—(THUCYDIDES.)

- (e) εἰ μὲν νυν Πέρξης τε ἀπέπεμψε ταῦτα λέγοντα
 κήρυκα ἐς Ἄργος καὶ Ἀργείων ἄγγελοι ἀναβάντες
 ἐς Ζοῦσα ἐπειρώτεον Ἄρτοξέρξεα περὶ φιλίης, οὐκ
 ἔχω ἀτρεκέως εἰπεῖν, οὐδέ τινα γνώμην περὶ αὐτῶν
 ἀποφαίνομαι ἄλλην γε ἢ τὴν περ αὐτοὶ Ἀργεῖοι
 λέγουσι. ἐπίσταμαι δὲ τοσοῦτο, ὅτι εἰ πάντες
 ἄνθρωποι τὰ οἰκήτῃα κακὰ ἐς μέσον συκνεύκαιεν
 ἀλλάξασθαι βουλόμενοι τοῖσι πλησίοισι, ἐγκύψαντες
 ἂν ἐς τὰ τῶν πέλας κακὰ ἀσπασίως ἕκαστοι αὐτῶν
 ἀποφεροῖατο ὀπίσω τὰ ἔσηνεύκοντο. οὕτω δὴ οὐκ
 Ἀργεῖοισι αἰσχιστα πεκοίηται. ἐγὼ δὲ ὀφείλω
 λέγειν τὰ λεγόμενα, κείθεσθαί γε μὴν οὐ παντάπασι
 ὀφείλω, καὶ μοι τοῦτο τὸ ἔπος ἐχέτω ἐς πάντα λόγον·
 ἐπεὶ καὶ ταῦτα λέγεται, ὡς ἄρα Ἀργεῖοι ἦσαν οἱ
 ἐπικαλεσάμενοι τὸν Πέρσην ἐπὶ τὴν Ἑλλάδα, ἐπειδὴ
 σφι πρὸς τοὺς Λακεδαιμονίους κακῶς ἢ αἰχμὴ ἐστήκεε,
 πᾶν δὴ βουλόμενοι σφίσι εἶναι πρὸ τῆς παρεούσης
 λύτης.—(HERODOTUS.)

- (f) ὁ δὲ ἀλαζῶν τοιοῦτός τις οἷος ἐν τῷ δείγματι
 ἐατηκῶς διηγεῖσθαι ξένοις ὡς πολλὰ χρήματα αὐτῷ
 ἐστὶν ἐν τῇ θαλάττῃ· καὶ περὶ τῆς ἐργασίας τῆς
 θαλασσοπορευτικῆς διεξιέναι ἡλικίᾳ, καὶ αὐτὸς ὅσα εἰληφε
 καὶ ἀπολώλεκε· καὶ ἅμα ταῦτα πλεθρίζων πέμπειν
 τὸ παιδάριον ἐπὶ τὴν τράπεζαν, δραχμῆς αὐτῷ
 κειμένης. καὶ συνοδοιπόρου δὲ ἀπολαύσας ἐν τῇ ὁδῷ
 δεινὸς λέγειν ὡς μετ' Ἀλεξάνδρου ἐστρατεύσατο, καὶ

ὡς αὐτῷ εἶχε, καὶ ὅσα λιθοκόλλητα ποτήρια ἐκόμισε· καὶ περὶ τῶν τεχνιτῶν τῶν ἐν τῇ Ἀσίᾳ ὅτι βελτίους εἰσὶ τῶν ἐν τῇ Εὐρώπῃ ἀμφισβητῆσαι· καὶ ταῦτα δὴ φῆσαι οὐδαμοῦ ἐκ τῆς πόλεως ἀποδεδημηκῶς· καὶ γράμματα δὲ εἰπεῖν ὡς πάρεστι παρ' Ἀντιπάτρον τριττὰ δὲ λέγοντα παραγίνεσθαι αὐτὸν εἰς Μακεδονίαν, καὶ διδομένης αὐτῷ ἐξαγωγῆς ξύλων ἀτελοῦς ὅτι ἀπείρηται, ὅπως μὴδ' ὑφ' ἐνὸς συκοφαντηθῆ περαιτέρω φίλος ὢν πλεῖν ἢ προσήκει Μακεδόσι. καὶ ἐν τῇ σιτοδείᾳ δὲ ὡς πλείω ἢ πέντε τάλαιτα αὐτῷ γένοιτο τὰ ἀναλώματα διδόντι τοῖς ἀπόροις τῶν πολιτῶν· ἀνανεύειν γὰρ οὐ δύνασθαι.

—(THEOPHRASTUS.)

LATIN TRANSLATION.

The Board of Examiners.

Translate, with brief notes in the margin—

- (a) quae nisi respuis ex animo longeque remittis
dis indigna putare alienaque pacis eorum,
delibata deum per te tibi numina sancta
saepe oberunt ; non quo violari summa deum
vis

possit, ut ex ira poenas petere inbibat acris,
sed quia tute tibi placida cum pace quietos
constitues magnos irarum volvere fluctus,
nec delubra deum placido cum pectore adibis,
nec de corpore quae sancto simulacra ferantur
in mentes hominum divinae nuntia formae,
suscipere haec animi tranquilla pace valebis.

—(LUCRETIUS.)

- (b) non rastros patietur humus, non uinea falcem;
robustus quoque iam tauris iuga soluet arator;

nec uarios discet mentiri lana colores,
 ipse sed in pratis aries iam suaue rubenti
 murice, iam croceo mutabit uellera luto;
 sponte sua sandyx pascentis uestiet agnos.
 "talìa saecla" suis dixerunt "currìte" fuis
 concordés stabili fatorum numine Parcae.
 adgredere o magnos (aderit iam tempus)
 honores,
 cara deum suboles, magnum Iouis incrementum!
 aspice conuexo nutantem pondere mundum,
 terrasque tractusque maris caelumque pro-
 fundum,
 aspice, uenturo laetentur ut omnia saeclo!
 o mihi tam longae maneat pars ultima uitae,
 spiritus et quantum sat erit tua dicere facta:
 non me carminibus uincet nec Thracius
 Orpheus,
 nec Linus, huic mater quamuis atque huic
 pater adsit,
 Orphei Calliopea, Lino formosus Apollo.

—(VERGIL.)

- (c) Sili, Castalidum decus sororum,
 qui periuria barbari furoris
 ingenti premis ore perfidosque
 astus Hannibalis leuesque Poenos
 magnis cedere cogis Africanis:
 paulum seposita seueritate,
 dum blanda uagus alea December
 incertis sonat hinc et hinc fritillis
 et ludit tropa nequiore talo,
 nostris otia comoda Camenis,
 nec torua lege fronte, sed remissa
 lasciuis madidos iocis libellos.
 sic forsàn tener ausus est Catullus
 magno mittere passerem Maroni.

—(MARTIAL.)

- (d) postero die sub ortum solis instruxere ab alto naues uelut ad iustum proelium nauale et tamquam exituris contra Romanis. cum diu stetissent, postquam nihil moueri ab hostibus uiderunt tum demum onerarias adgrediuntur. res erat minime certamini nauali similis, proxime speciem muros oppugnantium nauium. altitudine aliquantum onerariae superabant; ex rostratis Poeni uana pleraque, utpote supino iactu, tela in locum superiorem mittebant; grauior ac pondere ipso librator superne ex onerariis ictus erat; speculatoriae naues ac leuia nauigia, quae sub constrictis pontium per interualla excurrebant, primo ipsae tanto impetu et magnitudine rostratarum obruebantur, deinde et propugnatoribus quoque incommodae erant, quod permixtae cum hostium nauibus inhibere saepe tela cogebant metu, ne ambiguo ictu suis inciderent. postremo asses ferreo unco praefixi—harpagones uocat miles—ex Punicis nauibus in Romanas coepti. quos cum neque ipsos neque catenas, quibus suspensi iniciebantur, incidere possent, ut quaeque retro inhibita rostrata onerariam haerentem unco traheret, scindi uideres uincula, quibus alia aliis innexa erat, seriem aliam simul plurium nauium trahi. sex ferme onerariae puppibus abstractae Carthaginem sunt: maior quam pro re laetitia sed eo grauior, quod inter adsidas clades ac lacrimas unum quantumcumque ex insperato gaudium adfulserat, cum eo ut appareret haud procul exitio fuisse Romanam classem, ni cessatum a praefectis suarum nauium foret et Scipio in tempore subuenisset.—(LIVY.)
- (e) cogitanti autem haec fere succurrebant: primum ex eo, quod superioribus litteris

scripseras, ex familiari te illius audisse prolatum iri aliquid quod nemo improbaret, maius aliquid timueram : hoc mihi eius modi non uidebatur. deinde, ut me egomet consoler, omnis expectatio largitionis agrariae in agrum Campanum uidetur esse deriuata : qui ager, ut dena iugera sint, non amplius hominum quinque milia potest sustinere, reliqua omnis multitudo ab illis abalienetur necesse est. praeterea, si ulla res est quae bonorum animos, quos iam uideo esse commotos, uehementius possit incendere, haec certe est et eo magis, quod portoriis Italiae sublatis, agro Campano diuiso, quod uectigal superest domesticum praeter uicensimam ? quae mihi uidetur una contiuncula clamore pedisequorum nostrorum esse peritura. Gnaeus quidem noster iam plane quid cogitet nescio.

*φυσᾶ γὰρ οὐ μικροῖσιν ἀλλασκοῖς ἔτι,
ἀλλ' ἀγρῆαις φύσαισι, φορβείας ἄτερ·*

qui quidem etiam istuc adduci potuerit. nam adhuc haec *ἔσοφίζετο*, se leges Caesaris probare: actiones ipsum praestare debere: agrariam legem sibi placuisse : potuerit intercedi necne, nihil ad se pertinere : de rege Alexandrino placuisse sibi aliquando confici : Bibulus de caelo tum seruasset necne, sibi quaerendum non fuisse : de publicanis, uoluisse se illi ordini commodare : quid futurum fuerit, si Bibulus tum in forum descendisset, se diuinare non potuisse.

—(CICERO.)

- (f) laetum ea uictoria Vespasianum, cunctis super uota fluentibus, Cremonensis proelii nuntius in Aegypto adsequitur. eo properantius Alexandriam pergit, ut fracto Vitellii exercitu urbem

quoque externae opis indigam fame urgueret. namque et Africam, eodem latere sitam, terra marique inuadere parabat, clausis annonae subsidiis inopiam ac discordiam hosti facturus. dum hac totius orbis nutatione fortuna imperii transit, Primus Antonius nequaquam pari innocentia post Cremonam agebat, satis factum bello ratus et cetera ex facili, seu felicitas in tali ingenio auaritiam superbiam ceteraque occulta mala patefecit. ut captam Italiam persultare, ut suas legiones colere: omnibus dictis factisque uiam sibi ad potentiam struere. utque licentia militem inbueret, interfectorum centurionum ordines legionibus offerebat. eo suffragio turbidissimus quisque delecti; nec miles in arbitrio ducum, sed duces militari uiolentia trahebantur. quae seditiosa et corrumpendae disciplinae mox in praedam uertebat, nihil aduentantem Mucianum ueritus, quod exitiosius erat quam Vespasianum spreuisse.—(TACITUS.)

GREEK COMPOSITION.

The Board of Examiners.

1. Translate into Greek Iambics—

L. O speak no more, my lord! This breaks my heart.

Lie on this bed and rest yourself a while.

E. These looks of thine can harbour nought but death:

I see my tragedy written in thy brows.
 Yet stay: awhile forbear thy bloody hand,
 And let me see the stroke before it comes.
 That even then, when I shall lose my life,
 My mind may be more steadfast on my God.

L. What means your highness to mistrust me thus?

E. What mean'st thou to dissemble with me thus?

L. These hands were never stained with innocent
 blood ;

Nor shall they now be tainted with a king's.

E. Forgive my thought for having such a thought.

2. Translate into Greek Prose—

There cannot be anything so disingenuous, so misbecoming a gentleman or any one who pretends to be a rational creature, as not to yield to plain reason and the conviction of clear arguments. Is there anything more inconsistent with civil conversation and the end of all debate, than not to take an answer, though ever so full and satisfactory, but still to go on with the dispute, as long as equivocal sounds can furnish a term to wrangle with on the one side, or a distinction on the other, whether pertinent or impertinent matters not? For this in short is the way and perfection of logical disputes, that the opponent never take an answer, nor the respondent ever yield to an argument. This neither of them must do, unless he will pass for a poor baffled wretch, and lie under the disgrace of not being able to maintain whatever he has once affirmed, which is the great aim and glory in disputing. Truth is to be found and supported by a mature and due consideration of things themselves, and not by artificial terms and ways of arguing: these lead men not so

much into the discovery of truth, as into a captious and fallacious use of doubtful words, which is the most useless and offensive way of talking and such as least suits a gentleman or a lover of truth of anything in the world.

LATIN COMPOSITION.

The Board of Examiners.

1. Translate into Latin Elegiacs—

Slow sinks, more lovely ere his race be run,
Along Morea's hills the setting sun ;
Not, as in Northern climes, obscurely bright,
But one unclouded blaze of living light !
O'er the hushed deep the yellow beam he
throws,
Gilds the green wave, that trembles as it glows.
On old Aegina's rock, and Idra's isle,
The god of gladness sheds his parting smile ;
O'er his own regions lingering, loves to shine,
Though there his altars are no more divine.
Descending fast the mountain shadows kiss
Thy glorious gulf, unconquer'd Salamis !

2. Translate into Latin Prose—

Full of these ideas, all the electors turned their eyes towards Frederic, Duke of Saxony, a prince of such eminent virtue and abilities as to be distinguished by the name of the *sage*, and with one voice they offered him the Imperial crown. He was not dazzled with that object which monarchs so far superior to him in power

DD

courted with such eagerness; and, after deliberating upon the matter a short time, he rejected it with a magnanimity and disinterestedness no less singular than admirable. "Nothing," he observed, "could be more impolitic than an obstinate adherence to a maxim which, though sound and just in many cases, was not applicable to all. In times of tranquillity," he said, "we wish for an emperor who has not power to invade our liberties; times of danger demand one who is able to secure our safety. The Turks, led by a gallant and victorious monarch, are now assembling. They are ready to pour in upon Germany with a violence unknown in former ages. New conjunctures call for new expedients. The Imperial sceptre must be committed to some hand more powerful than mine or that of any other German prince. We possess neither dominions nor revenues nor authority which enable us to encounter such a formidable enemy. Recourse must be had, in this exigency, to one of the rival monarchs."

COMPARATIVE PHILOLOGY.

Professor Tucker.

1. State Grassmann's Law, with instances and exceptions.
2. Give, with examples, the history of the following I.-E. sounds as they appear in Greek and Latin:—*oi, eu, bh*, sonant *l*, post-consonantal *y*, velar *g*.

3. What chief effects were produced in Latin by the old method of accentuation?
- 4 Explain and illustrate "Sentence-Phonetics."
5. (a) Illustrate fully the phenomena of Ablaut in roots or suffixes containing *e*.
(b) Relate the following words to their cognates in other Ablaut steps—*modestus*, *πέπασθε* and *πέποσθε* (= *πεπόνθατε*), *δέδοικα*, *solium*, *πάλαι*, *perculsus*, *εἰκώς* (with *ἰοικώς*), *ποιμήσι*, *ὑπερφίαλος*.
6. Comment on the vowels italicised in—*neglego*, *Poenus*, *nuncupo*, *mina*, *fabula*, *vester*, *anatem*.
7. Examine completely the following words in respect both of phonology and morphology—

λείπεις, *ἔξουσι* (Dor. *ἐξοῦσι*), *seruntur* (with *ῖενται*), *cocus* (with *πέσσω*), *sacerdos*, *interior*, *τεθνεώς* (with *τεθνηκώς*), *σβέννυμι* (with *segnis*), *tergo* (with *τέτριμμαι*), *πανούργος*, *σαντοῦ*, *χθονός*, *θεόσδοτος*, *πίομαι*, *ἔκηα* (with *ἔκεα* and *ἔκανσα*), *mihī*, *ἑκατόν*, *Samnium* (with *Sabellus*), *πεῖσμα* (with *offendix*), *κοεῖν* (*cavere*), *εὔω* (with *uro*), *δέλφαξ* (with *calx*), *πῆχυς* (*el-bow*), *φαῦλος* (with *φλαῦρος*), *mulceo* (*μαλακός*), *βασιλέως*, *ἐλάτη* (with *linter*), *κατά* (with *contra*), *incolarum*.

8. Take the following verbs, break them up into their component parts, state the function of each such part, and do the same with each of the "principal parts" of each verb:—*τίκτω*, *δάκνω*, *ἔχω*, *ὑπισχνέομαι*, *pello*, *fero*, *facio*, *πυθάνομαι*, *πάσχω*, *tendo*, *τείνω*.

9. Describe the I.-E. method of forming subjunctive and optative moods. Shew how far Greek and Latin have retained or departed from the original method.
Illustrate by *es — *ei — *bher —.
10. Discuss briefly the case-forms—οἴκαδε, χωρέων, δεσποτία, *deabus*, *honoribus*, ἡμᾶς, ἡοῦς, *foras*, πολίτου, ἐραχμηῆσι, πόδεσσι, *moris*.
11. Examine the forms—
γεγονυῖα, *magister*, εἰκοστός, *boum*, φιλαίτερος, *ferimini*.
12. Write compact notes on—
(a) The augment.
(b) The Latin passive.
(c) The ways of forming infinitives.

GREEK AND ROMAN LITERARY CRITICISM.

Board of Examiners.

1. Give a clear account of the term μίμησις as applied to the fine arts. How is music a μίμησις? What is meant by πᾶξις as subject of μίμησις?
2. (a) "The distinction between poets and prose-writers is a vulgar error."—(SHELLEY.)
"Three works which are as near to poetry as possible without absolutely being so—*Pilgrim's Progress*, *Robinson Crusoe*, and the *Tales of Boccaccio*."—(HAZLITT.)

Discuss these observations with the aid of any remarks made by Aristotle in the *Poetics*.

(b) "The distinction between philosophers and poets has been anticipated."—(SHELLEY.) But what, in Aristotle's view, is there in common to poetry and philosophy?

3. (a) "All art is dedicated to joy. . . . The right art is that which creates the highest enjoyment."—(SCHILLER.) Compare this with Aristotle's conception of the function of art. (b) Explain the special *ἡδονή* derived from tragedy. (c) By what devices of plot or choice of "hero" is such *ἡδονή* secured in the largest measure? (d) Who is the best judge of the soundness of art, and in what respects is *ἡ τῶν θεάτρων ἀσθένεια* at Athens revealed to us?

4. Pope says of Aristotle—

"He steer'd securely, and discover'd far,
Led by the light of the Mæonian star."

Explain and discuss the latter line in connection with the statement that Aristotle as a critic believes in the "survival of the fittest."

5. Explain and discuss the statement that the function of the poet is to represent *οἷα ἂν γένοιτο* rather than *τὰ γεγόμενα*.

6. "What distinguishes the artist from the mere amateur, says Goethe, is Architectonicé in the highest sense; that power of execution which creates, forms, and constitutes; not the profoundness of single thoughts, not the richness of imagery."—(M. ARNOLD.)

How far does this agree with doctrines of Aristotle? By what terms would Longinus express "the profoundness of single thoughts"?

7. Addison writes—"Aristotle has observed that the idiomatic style may be avoided and the sublime formed, by the following methods. . ."
What are these methods? What must we understand "idiomatic" and "sublime" to mean? Explain ὑψος as used by Longinus.
8. The nature of poetry is such that "ad eloquendi quaedam deverticula confugiat, nec mutare quaedam modo verba, sed extendere, corripere, convertere, dividere cogatur."—(QUINTILIAN.)
Compare this with Aristotle's remarks upon ἐπεκτάσεις and the like, and discuss the point.
9. Distinguish between the error in art and the error κατὰ συμβεβηκός.
10. (a) Compare the definition of good poetic style in the *Poetics* with that of good style in the *Rhetoric*.
(b) Why should there be ρυθμός but not μέτρον in prose?
11. Explain σχήματα, τὸ ψυχρόν, τὸ οἰδοῦν, μεγαλοφροσύνη, ἀπλοῦς μῦθος, ἀπλῆ σύστασις.
12. ἐν τῇ Ὀδυσσεΐα παρεικάσαι τις ἂν καταδυομένῳ τὸν Ὀμηρον ἠλίψ, οὗ δίχα τῆς σφοδρότητος παραμένει τὸ μέγεθος. What are the grounds of this judgment?
13. ἐξ ἀνάγκης γένοιτ' ἂν ὑψους αἴτιον τὸ τῶν ἐμφερομένων ἐκλέγειν ἀεὶ τὰ καιριώτατα. . .

Complete this passage, with the illustrations.

14. (i) Give the substance of Quintilian's criticisms of Greek and Roman historians.
- (ii) Aeschylus, sublimis et gravis et grandiloquus saepe ad vitium, sed rudis in plerisque et incompositus.

Compare this with an observation of Longinus.

15. Pope speaks of "lays

That, shunning faults, one quiet tenour keep;
We cannot blame indeed—but we may sleep."

What has Longinus to say in similar vein?

16. Comment on the following excerpts from Horace—

- (a) difficile est proprie communia dicere.
(b) Archilochum proprio rabies armavit iambo.
(c) nec gemino bellum Troianum orditur ab ovo.
(d) si vis me flere, dolendum est
primum ipsi tibi.

GREEK AND LATIN LITERATURE.

The Board of Examiners.

1. Define and characterize the "Classical Period" in Greek and Latin literature respectively. Trace the nature and causes of the decline in each case.
2. (a) Describe concisely the contributions to Greek literature which came from Bœotia, Sicily, and Alexandria respectively. Add the dates.
- (b) Which of the Roman writers were provincials? Give some account of each.

3. Through what characteristics of subject-matter and treatment is Attic Comedy divided into periods? Name the principal writers of each.
4. What ground is there for supposing the existence of Epic poems previous to the composition of the *Iliad*?
5. Give an account of (a) the rise and progress of Greek oratory, (b) Greek and Latin books on rhetoric.
6. Write a concise history of Roman tragedy, examining its relations with the Greek.
7. Give (with dates) a brief summary of the lives and works of Alcæus, Simonides, Anacreon, Xenophon, Plutarch, Ennius, Varro, Pliny the Younger, Martial.
8. Write an Essay on each of the following subjects:—
 - (a) Bucolic poetry.
 - (b) Tacitus as stylist and historian.
 - (c) The possibility of translating Pindar or Vergil.

GENERAL PAPER.

The Board of Examiners.

1. Place on an outline map the chief Greek settlements in Southern Italy and Sicily. Describe briefly (with dates) how Rome came into political contact with them successively.

2. Give some account of the Athenian and Roman coinage, stating the modern values. Give the Greek and Latin for "£250 at 6 per cent. per annum," "I will pay the principal on the 17th of March."
3. Explain clearly—*Equites Romani, princeps senatus, senatores pedarii, legatio libera*, δίκη ἀποστασίου, δίκη ἐξούλης, μετοίκιον, προβολή, μέταυλος θύρα, ἀνάκρισις, ταξίαρχος, φύλαρχος, γερονσία, ναύαρχος, ὀστρακισμός, *vexillarii, divinatio, nundinae, morbus comitialis, obnuntiatio*.
4. State the origin and application of the proverbs—*ποῦ στῶ*;—*ipse dixit*—*ad Kalendas Graecas*—*γινῶθι σεαυτόν*—*οὐδὲν πρὸς Διόνυσον*—*ab ovis Minervam*.
5. Explain by a diagram the topography of—
 Otho per Tiberianam domum in Velabrum,
 inde ad miliarium aureum sub aedem Saturni
 pergit—
 and the allusions in—
 Exsilium et carcer Minturnarumque paludes
 Et mendicatus victa Carthagine panis.
6. Describe (with diagram) the Acropolis in B.C. 400.
7. State in a few sentences—
 - (a) the parts played in history by Brasidas, Pelopidas, Theramenes, Maecenas, Vitellius, Jugurtha, Pythagoras, Pheidias;
 - (b) events connected with Pydna, Aegates Insulae, Aquae Sextiae, Arbela, Lade.

8. Give the classical Attic for *προσῆρχοντο, ἀνατίθεται, ἐκβάλλεται, ἔχω τὴν ἀρχὴν ἐπιτετραμμένην, καλέσεις, γαμηθήσομαι, προσηγορεύθην, ἑωνησάμην, μαθέωσαν.*
9. Write terse notes on the grammar of—
*cur non exsilium itis ?
 facinora neque te decora nec tuis virtutibus.
 ne hostes quidem sepultura invident.
 quod non opus est, asse carum est.
 mediis consiliis standum videbatur.
 ab Narnia Tiberi devectus est vitandae sus-
 picionis.
 me omnium iam laborum levas.*
- πόλεις χαλεπαὶ λαβεῖν μὴ οὐ χρόνῳ.
 νέφος δ' οὐ φαίνεται πάσης γαίης οὐδ' ὀρέων.
 εἰσῆλθον τὴν δίκην ταύτην.
 εἰ δὲ σὺ μὲν μὲν ἀκουσον, ἐγὼ δὲ κέ τοι καταλέξω.
 ἐπικείμεναι κᾶρα κυνᾶς.
 ἔστ' οὖν ὅπως Ἀλκηστis εἰς γῆρας μόλοι ;
 μάρναντο δέμας πυρὸς αἰθομένοιο.
 ἔσσεται ἡμαρ ὅτ' ἂν ποτ' ὀλώλῃ Ἴλιος ἰρή.*
10. What were the differences between the two chief varieties of Greek alphabet? What changes occurred in the Latin alphabet after it was first borrowed?
11. State and illustrate the various meanings and usages of *quin* with various moods. Translate "There is no doubt that, if he had arrived earlier, the town would have been taken."
12. Emend the hexameter—
δώσω δ' ἑπτὰ γυναικας ἀμύμονας ἔργα ἰδυίας.

13. Translate into an English couplet—

Incipe : dimidium facti est coepisse. Supersit
dimidium. Rursus incipe et efficies.

SCHOOL OF HISTORY, INCLUDING CONSTI-
TUTIONAL AND LEGAL HISTORY, AND
POLITICAL ECONOMY.

ANCIENT HISTORY.

FIRST PAPER.

Professor Elkington.

Write a short Essay on each of the following sub-
jects :—

- (1) The evolution of History from Mythology.
- (2) The Homeridæ.
- (3) The Amphictyony.
- (4) Music as a subject of education at Athens.
- (5) The Sophists, from the standpoint of Socrates,
as teachers of virtue.
- (6) The characteristics common to the Tyrannis in
Greece.
- (7) The constitutional and judicial reforms intro-
duced by Pericles.

ANCIENT HISTORY.

SECOND PAPER.

Professor Elkington.

1. Discuss the chief causes of the gradual diminution of the power of the Consulate.
2. Describe the main racial divisions of the Italian peninsula in the fourth century B.C., and consider how the diversity of race affected the progress of Roman conquest.
3. Trace the effects upon Rome, economically and politically, of the second Punic war (*a*) in Italy, (*b*) abroad.
4. Trace briefly the course of the last Mithradatic war, and explain the nature of the settlement of the East by Pompeius.
5. Why did the Republican government break down at Rome ?
6. On what grounds did Cæsar refuse to give up his province and his army in B.C. 50-49 ?
7. What motives induced the Romans to undertake the conquest of Britain ?
8. Trace the derivation of the principal Imperial powers as exercised by Augustus from forms of authority which existed under the Republic.

9. What changes in the direction of autocracy occurred under Tiberius?
 10. Describe the principal changes in the government of the Roman Empire which were introduced by Diocletian and Constantine.
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HISTORY OF THE BRITISH EMPIRE.

FIRST PAPER.

Professor Elkington.

1. Indicate the chief points of resemblance and of difference between the Feudal relation and the Tribal relation.
2. Indicate the chief causes of the downfall of the Manorial system.
3. Discuss the attitude of the Baronage towards the Crown up to the accession of Edward the Third.
4. Discuss briefly the domestic and the foreign policy of Henry the Seventh.
5. Discuss Wolsey's place in the history of England.
6. Trace the causes which led to the opposition to Charles the First.
7. What circumstances brought about the fall of Clarendon?
8. Trace the effect (a) of Irish, (b) of Scottish, affairs in bringing about the Revolution.

HISTORY OF THE BRITISH EMPIRE.

SECOND PAPER.

Professor Elkington.

1. Write a note upon "The English Village Community."
2. "Party is essential to representative institutions."
—*May, C. H., vol. II., p. 94.* Discuss this proposition.
3. "Such then was the effect of the New World on the Old."—*Seeley, Expansion, p. 92.* Explain.
4. Discuss the Act of Settlement as introducing safeguards to the Constitution.
5. Write a note upon the more important constitutional questions which arose during the reign of Anne.
6. Explain the circumstances in which the second Rockingham Administration was formed, and trace thence the course of public affairs to the formation of the Coalition Ministry.
7. Show that the Reform Act of 1832 (*a*) has not produced the principal results expected of it, (*b*) has produced results that were not anticipated.
8. Give some account of the Alabama arbitration.
9. Whom do you consider the greatest of our Indian proconsuls, and for what reasons?

HISTORY.

Professor Elkington.

Write a short Essay on each of the following subjects:—

- (1) The Coronation of Charles the Great.
- (2) The Partition Treaty of Verdun.
- (3) The Constitution of the Holy Roman Empire.
- (4) The changes in Europe, political and social, during the eleventh century, which affected the crusading movement.
- (5) The history of the Spanish peninsula during the fifteenth century.
- (6) The growth of the Swiss Confederacy.

POLITICAL ECONOMY.

FIRST PAPER.

Professor Elkington.

To be answered also by Candidates for the Wyselaskie Scholarship in Political Economy.

1. What do you understand by Character? By National Character? Mention some of the leading circumstances that influence Character.
2. Show the importance of Psychology as a preparation for the study of theoretical politics.

3. "The consilience of Induction and Deduction is the very highest art that the human intellect can command, not merely for proving difficult propositions, but for getting hold of propositions to be proved." Illustrate from your reading.
 4. In certain respects societies resemble individual organisms, in certain other respects they differ from them. Explain as fully as you can.
 5. ". . . there arise impediments in the way of Sociology greater than those in the way of any other science."—*Spencer Study, &c., p. 72.* Comment on this citation.
 6. "The progress in the discovery of laws, itself conforms to law." Elucidate.
 7. Bagehot sets down as a postulate of English political economy, the transferability of capital from employment to employment. What do you understand by "capital" and by "employment" in this connection?
 8. "Labour, therefore, is the real measure of the exchangeable value of all things."—*Wealth of Nations, Book I., ch. 5.* Comment upon this dictum.
 9. Explain and illustrate the meaning of "relative indebtedness" in the theory of Foreign Exchanges.
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POLITICAL ECONOMY.

SECOND PAPER.

Professor Elkington.

**To be answered also by Candidates for the Wyselaskie
Scholarship in Political Economy.**

Write a short Essay on each of the following
subjects :—

- (1) Evolution and Dissolution.
- (2) Political Integration.
- (3) The interdependence of economic phenomena.
- (4) The influence of Machinery.
- (5) The Earnings of Labour.
- (6) The tendency of Profits to a minimum.

POLITICAL ECONOMY.

(FOR THE DEGREE OF M.A.)

Professor Elkington.

**To be answered also by Candidates for the Wyselaskie
Scholarship in Political Economy.**

1. Write a note on the limits of State-Duties.
2. Discuss briefly Cliffe Leslie's essay on "The
Political Economy of Adam Smith."

3. (a) "No industry can live anywhere which is not able to face the most unrestricted competition."—GIFFEN, *Economic Inquiries, II.*, p. 188.
- (b) "The dream of the Socialist, that there is a common fund produced of which certain workmen do not get their fair share, is thus a pure illusion."—*Ib.*

Give the substance of Giffen's arguments.

4. How does Giffen demonstrate that there has been a great increase of well-being throughout all classes of society within the last fifty years?
5. Write a note on the utility of common statistics.
6. Write a note on "the mobility of labour."
7. Write a brief note on each of the following subjects:—
- (a) English corn-law legislation in the nineteenth century.
- (b) The Bank Charter Act 1844.
- (c) The Statute of Apprentices.
8. How does Walker answer the question, "May any advantage be acquired by the wages class through strikes or trade-unions"?
-

SCHOOL OF LOGIC AND PHILOSOPHY.

I.—FORMAL LOGIC.

Professor Laurie.

1. Mention different ways in which the logical laws have been stated, and different theories which have been held as to their origin.
2. Consider the truth, or otherwise, of the statement made by Kant that, since Aristotle, Formal Logic has not had to retrace a single step, nor has it been able to make one step in advance.
3. How far, if at all, may the doctrine of Opposition be applied to Hypothetical propositions? And what immediate inferences may be drawn from such propositions?
4. What is meant by the Inversion of Categorical propositions? On what processes does it depend, and on what conditions may it be regarded as valid?
5. What is the problem of Reduction? Distinguish, in your answer, between Direct and Indirect Reduction. To what extent is it possible to reduce categorical syllogisms to moods other than the first?
6. What fallacy or fallacies are involved in the attempt to argue from one of the premisses and the conclusion of a categorical syllogism to the truth of the other premiss?

7. Examine the following arguments :—

(a) “ You are not to inquire how your trade may be increased, nor how you are to become a great and powerful people, but how your liberties can be secured. For liberty ought to be the direct end of your government.”

(b) If the moral aim be blessedness, it must be a state of consciousness, or an aggregate of such states, either painful, indifferent, or pleasurable. From this it follows that the moral aim is pleasure, for a state of blessedness cannot be either painful or indifferent.

8. What is the result of Elimination? Can you point out any cases in which this process may be of value? Explain the relation of the expressions $f(1)$ and $f(0)$ to each other.

9. Of the artists who offered works for a certain exhibition, it was found that the candidates whose works were wholly rejected consisted exactly of juniors who had sent in oil paintings and seniors who had sent in water colours. Describe the junior candidates as fully as these data will permit.

II.—INDUCTIVE LOGIC.

Professor Laurie.

1. Discuss Mill's answer to the question, what a Proposition really is.

2. Mention any meanings which have been attached to Real Definition. How is it that many logicians regard Definition as nominal only, while, at the same time, they admit that questions of Definition lead to an examination of things ?
3. What account would you give of the objects which form the subject-matter of Geometry ? This may be discussed in connexion with the question whether axioms of Geometry may be explained and defended as generalizations from observation.
4. What do you take to be the ground of Induction generally ? Is it possible to vindicate this ground as itself an Induction ?
5. May every proof of a special law of causation be resolved into an application of the Method of Difference, or are other criteria necessary ? Give your reasons.
6. How is it that stress has been commonly laid on plurality of causes, rather than on plurality of effects ? Refer, in your answer, to Venn's treatment of this question.
7. Is the principle of the composition of causes liable to any exception ? Consider Mill's teaching on this subject.
8. Mention different purposes for which Hypotheses may be used. Should the claim to frame Hypotheses be restricted in any way ; and, if so, how ?

III.—PSYCHOLOGY.

Professor Laurie.

1. To what extent, if at all, is it true that Psychology forms the basis of Ethics ?
2. Give an account of different varieties of motor sensations. Is it possible to resolve Space, or our knowledge of it, into these or any other sensations ?
3. May all the facts of imagination, reproductive and productive, be explained by a law or laws of association ?
4. May the concept be resolved into a particular image or presentation, together with the use of a general name ?
5. What account would you give, psychologically, of the development of the idea of Self ?
6. What is the value of the doctrine of "local signs" in connexion with Perception ?
7. How does Lotze meet the supposition that mental life is nothing but a product of the bodily organization ?
8. On what grounds does Lotze defend the interaction of mind and body ? Compare his theory with any doctrine of psycho-physical parallelism known to you.

IV.—METAPHYSICS.

Professor Laurie.

1. What are the special problems of Kant's Transcendental Analytic as compared with his Transcendental Aesthetic ?
2. Show the importance, for the philosophy of Kant, of his schematism of the Categories. Add any comments.
3. How does Kant seek to get rid of the difficulties contained in his first and second Antinomies ? Examine his position here.
4. What does Kant hold to be the proper attitude of reason in its purely speculative use towards a moral theology, as distinguished from a speculative theology ?
5. Show that the inquiry into the nature of knowledge is necessarily bound up with the inquiry into the nature of existence.
6. On what grounds has it been maintained that the world must be conceived from a teleological and not merely from a mechanical point of view ?
7. Does the unity of the world imply intelligence ? Is any light thrown on this subject by the development of human knowledge ?
8. Give an account of the Idealistic view of the world which Watson, in his chapter on the Philosophy of Mind, opposes to the philosophy of Herbert Spencer.

V.—MORAL PHILOSOPHY.

Professor Laurie.

1. At what point or points does Aristotle, in his Ethics, break off from the Platonic doctrine of the nature of the good ?
2. Explain Aristotle's division of the intellectual virtues.
3. Distinguish between psychological and ethical hedonism, and discuss their relations.
4. How does Spencer attempt to establish a reconciliation in moral philosophy between empiricism and intuitionism ? Add any comments.
5. Does Spencer's theory of the genesis of the moral consciousness justify the extension of ethics to the lower animals ?
6. How would you meet the statement that the ethical end of self-realization, adopted by Green and others, errs in attaching undue importance to the satisfaction of the individual ?
7. May the good will be regarded as a sufficient test of conduct ? Is it possible to reconcile an affirmative answer with the acknowledged facts that men, acting conscientiously, are sometimes led in opposite directions ?
8. Explain Green's statement that Reason is the source of the idea of a Common Good. How does he seek to show that social interest must be accepted as a primary fact ?

VI.—HISTORY OF PHILOSOPHY.

Professor Laurie.

1. What importance do you attach to the Method prescribed by Descartes in the search for truth?
2. In what sense, and on what grounds, does Spinoza affirm freedom of the Infinite Substance, while denying free will to man?
3. Write a short essay on Leibniz's theory of Pre-established Harmony.
4. On what grounds does Locke conclude that there are material things distinct from the percipient mind? Examine his arguments on this subject.
5. State, with any comments, the distinction drawn by Berkeley between visible and tangible extension.
6. What, according to Locke, is the origin of our belief in personal identity? And how did Hume seek to explain this belief?
7. It has been said that "the thorough subordination of reason to feeling and instinct is the determining factor in Hume's philosophy." Consider this statement.
8. Show that the speculative philosophy of Kant has been the source of much of our later Agnosticism.

SCHOOL OF MODERN LANGUAGES.

—
ENGLISH.

FIRST PAPER.

The Board of Examiners.

1. "The Norman Conquest inaugurated a distinctly new epoch in the literary history of England." Comment on this statement.
 2. Write a note on the sources of Chaucer's "Knightes Tale" and of his "Nonne Prestes Tale."
 3. Give a short account of "Gorboduc" and of "Ralph Roister Doister."
 4. Compare the Chronicle-play with the Historical Drama proper. To which class does *K. Henry IV.* belong?
 5. Discuss the resemblances between the three plays generally considered as Shakespeare's latest.
 6. Discuss the question of Hamlet's age.
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ENGLISH.

SECOND PAPER.

The Board of Examiners.

1. What are the chief merits and defects of Milton's prose style?
2. Write a short account of Earle's *Microcosmography*.
3. Compare Dryden and Pope as satirists.
4. What do you gather from the *Essay of Dramatic Poesy* as to Dryden's own views on—
 - (a) the relative value of ancient and modern drama?
 - (b) the relative value of English and French drama?
 - (c) the value of rhyme in dramatic works?
5. Show how the work of Thomson, Gray, Collins, and Percy can be considered as heralding a romantic movement in English poetry.
6. What were the real defects of the so-called "metaphysical" poetry of the Seventeenth Century? Illustrate as fully as possible.

ENGLISH.

THIRD PAPER.

The Board of Examiners.

1. Describe, briefly and precisely, Burke's attitude toward the French Revolution.
2. Write a short account of Lamb's prose style.
3. Discuss Macaulay's estimate of Addison.
4. Compare Wordsworth and Shelley—
 - (a) in their attitude towards Nature ;
 - (b) in their attitude towards political reform.
5. Summarize Harrison's argument in the matter of Eighteenth Century literature.
6. Discuss Hutton's views on Browning—
 - (a) as lyric poet ;
 - (b) as dramatist.

ENGLISH.

FOURTH PAPER.

The Board of Examiners.

Write an Essay on *one* of the following subjects :—

- (a) The Poetry of Chaucer.
- (b) The debt of English literature to other modern literatures.

FRENCH.

FIRST PAPER.

The Board of Examiners.

COMPOSITION (ESSAY).

Ecrivez en français *deux* compositions choisies l'une parmi les sujets (a), l'autre parmi les sujets (b), indiqués ci dessous :

A.

- (1) Les charmes de la lecture.
- (2) L'instruction doit elle être obligatoire ?
- (3) De l'influence du journalisme moderne sur la littérature et principalement le roman.
- (4) L'Angleterre est le pays le plus libre du monde, sans en excepter aucune République.—
MONTESQUIEU.

B.

- (1) Des écrivains qui ont exercé le plus d'influence sur le développement de la langue au XVI^e Siècle.
- (2) De l'influence de Louis XIV. sur la littérature de son siècle.
- (3) De l'influence exercée par certains écrivains anglais sur les romanciers français du XVIII^e Siècle et du XIX^e.
- (4) De l'influence des salons littéraires et des femmes écrivains sur la littérature française des XVII^e et XVIII^e siècles.

FRENCH.

SECOND PAPER.

The Board of Examiners.

I.

VERSION.

Traduisez en français élégant :

- (a) Trade in those days, both foreign and domestic, was subject to many discouragements. One of the most formidable of these consisted in the prevalence of piracy. The Governments of the period were all more or less irregular and insecure, especially in their influence on the more remote provinces nominally subject to their authority. But if licence seemed to increase with distance on the land, much more was it thus with distance on the open sea. Trading vessels were always armed vessels—were as far as possible vessels of war; and the strong too often seized upon the weak, even in the time of peace, appropriating the ship and the cargo, and despatching the crew. Depredations of this nature provoked reprisals, and large fleets sometimes took the quarrels thus originated into their own hands, without consulting their respective Governments. Almost every state had at times its complaint to make of wrong of this shape, and often only to be reminded of similar outrages as perpetrated by its own subjects.
- (b) At last came the days of his death agony, during which the strong frame of the man was struggling with dissolution. He insisted on

remaining by the fireside, in front of the door of his private room. His daughter would spread out the gold coins on a table for him, and he would remain whole hours with his eyes fixed on them like a child that, on beginning to see, stupidly contemplates the same object; and, like a child, he would give a painful smile.

“It does me good,” he would say sometimes, with an expression of joy on his face.

(c) Write to me as soon as you receive this letter, for I have not had news of you for some time. Until now I have been moving about so much that I could not give you any fixed address. At present, without being more settled in my movements, I depend more on myself, and I am better able to know what I shall be doing, the ordinary risks of life excepted. Address your letters to Mr. S. Bâle, *to be called for*; for they will reach me wherever I am, and in all probability I shall be in Switzerland. I am going there to escape the heat. I shall spend all the warm season in these mountains. I shall go down in October. The weather will then be pleasant with you, and I shall pay you a visit every winter. This had been my former plan, my finest castle in the air, and the dearest of my dreams; and nothing now prevents me from realizing it.

(d) All the world's a stage,
 And all the men and women merely players;
 They have their exits and their entrances;
 And one man in his time plays many parts,
 His acts being seven ages. At first, the infant,
 Mewling* and puking† in the nurse's arms;

* vagir.

† baver.

And then, the whining schoolboy, with his
 satchel
 And shining morning face, creeping like snail
 Unwillingly to school. And then, the lover,
 Sighing like furnace, with a woeful ballad
 Made to his mistress' eyebrow. Then a soldier,
 Full of strange oaths, and bearded like the
 pard,
 Jealous in honour, sudden and quick in
 quarrel,
 Seeking the bubble reputation
 Even in the cannon's mouth.
 Last scene of all
 That ends this strange eventful history,
 Is second childishness, and mere oblivion ;
 Sans teeth, sans eyes, sans taste, sans every-
 thing.

II.

GRAMMAIRE COMPARÉE.

1. Le français ressemble à l'anglais en ce que les seuls cas en usage se trouvent parmi les pronoms. Pourquoi donc est-il désirable de retenir les expressions de nominatif, de génitif, d'accusatif et de datif surtout en ce qui concerne la construction de certains verbes ? Les exemples suivants à traduire en français idiomatique pourront servir à expliquer les réponses :

She has walked six miles.

He values it at ten shillings.

They stood sword in hand.

He lives in Redan St.

She smiled a bitter smile.

2. Traduisez soigneusement les exemples suivants d'expressions elliptiques (1) et explétives, (2) et expliquez les différences de construction des deux langues dans ces phrases :

(1) *When do you think they will come ?
More dangerous than is supposed.
I like novels, however uninteresting.
Has she seen the house ? Yes.
Are any left ? No.*

(2) *To say that is to talk like a fool.
I am the State.*

3. Donnez les idiomes français correspondant aux exemples suivants.

*What does it matter ?
I knew her to be dying.
Cost what it may.
I heard people shouting in the streets.
Happy is the man who*

4. Donnez les comparaisons et métaphores anglaise correspondant aux expressions suivantes :

*Il fait noir comme dans un four.
Trempe comme une soupe.
Fort comme un turc.
Maigre comme un clou.
Triste comme un bonnet de nuit.
Serré comme des harengs.*

FRENCH.

THIRD PAPER.

The Board of Examiners.

I.

TRADUCTION (*at sight*).

Traduisez élégamment :

1. La Fontaine et Molière sont inséparables, ils se tiennent pour ainsi dire la main devant la postérité qui les admire et qui les aime. Elle leur sait gré à tous deux de n'avoir pas haï les hommes dont ils ont peint les travers et les faiblesses avec tant de fidélité et par des moyens analogues, car la Fable, dans les mains de La Fontaine, est devenue :

Une ample comédie à cent actes divers.

Ces deux poètes philosophes, si français et si humains, si modernes et si antiques, pour tout dire, si vrais et si durables, sont bien de leur pays et de leur temps, mais ils conviennent à tous les lieux et à tous les âges. Leurs faiblesses, et ils en ont, ne sont que des traits de vérité plus frappants et des arguments de sincérité. Ce qui prouve victorieusement la parenté et la puissance de leur génie, c'est le don qu'ils possèdent au même degré de transformer ce qu'ils touchent, et de s'assimiler ce qu'ils empruntent. Molière disait : "Je prends mon bien où je le trouve," et La Fontaine, dans le même sens :

Mon imitation n'est point un esclavage,
et tous deux avaient raison.

2. Les plantes semblent avoir été, semées avec profusion sur la terre, comme les étoiles dans le ciel, pour inviter l'homme, par l'attrait du plaisir et de la curiosité, à l'étude de la nature; mais les astres sont placés loin de nous; il faut des connaissances préliminaires, des instruments, des machines, de bien longues échelles pour les atteindre et les rapprocher à notre portée. Les plantes y sont naturellement; elles naissent sous nos pieds et dans nos mains, pour ainsi dire; et, si la petitesse de leurs parties essentielles les dérobe quelquefois à la simple vue, les instruments qui les y rendent sont d'un beaucoup plus facile usage que ceux de l'astronomie. La botanique est l'étude d'un oisif et paresseux solitaire, une pointe et une loupe sont tout l'appareil dont il a besoin pour les observer.
3. C'est dans la jeunesse qu'il faut apprendre à lire les anciens. Alors la page de l'esprit est toute blanche, et la mémoire boit avidement tout ce qu'on y verse. Plus tard, la place est occupée; les affaires, les soucis, les soins de chaque jour la remplissent, et il n'y a plus guère moyen qu'avec un trop grand effort de repousser la vie présente qui nous envahit de tous côtés et qui nous déborde, pour aller se reporter en idée à trois mille ans en arrière. Et encore, pour y revenir, quand on sait les chemins, quelle préparation est nécessaire! que de conditions pour arriver à goûter de nouveau ce qu'on a senti une fois! Après quelques années d'interruption, essayez un peu, et vous verrez la difficulté. Il est besoin auparavant de se recueillir, de s'isoler de la vie qui fait bruit et de lui fermer la porte, de faire comme on faisait autrefois quand on

voulait s'approcher des mystères, de prendre toute une semaine de retraite, de demi-ombre et de silence, de mettre son esprit au régime des ablutions et de le sevrer de la nourriture moderne—Soyez sobre, soyez à jeun; n'allez pas, à vos jours de communion avec l'antiquité, lire tous les journaux du matin.

4. Un village!—Voilà le vingtième peut-être.
 C'est le même toujours: on le fait reparaître!
 Chacun d'eux est si bien semblable à son voisin,
 Qu'on les fixerait tous en trois traits de fusain.
 Un fouillis de maisons, de granges, de clôtures;
 Le fin clocher qui pointe au dessus des toitures;
 La ferme centenaire avec son mur détruit.
 Et le long d'une haie, un chemin creux qui fuit.
 Mais le calme est si grand, mais la paix si
 profonde,
 On croit si bien qu'ici cessent les bruits du monde,
 Et que nul des soucis, nulle des passions
 Qui sont le lourd impôt de nos ambitions,
 Ne doit ici troubler, dans son divin mystère,
 L'entretien familier, de l'homme et de la terre,
 Que, malgré le mécompte et le réveil certain,
 Je n'ai jamais pu voir un village lointain,
 Près des forêts, au flanc d'un mont, au bord d'un
 fleuve,
 Sans rêver d'y renaître avec une âme neuve,
 Sans dire: "Le pays qu'il me faut, l'horizon
 Qui me plaît, les voilà!—J'y voudrais ma maison.
5. Sous le ciel morne rampe une plaine âpre, chauve,
 Et vierge du fécond déchirement des socs,
 Où rien ne croît, hormis aux fissures des rocs
 Quelques brins mal venus de bruyère ou de mauve.

Aux moindres bruits, un vol de corneilles se sauve.
La pierre ruinée, éparse en sombres blocs,
Témoigne qu' autrefois d'épouvantables chocs
Ont consacré l'horreur de cette lande fauve.

Qu'un jour un laboureur habile aux durs travaux
Vienna, attelle ses bœufs trapus, ses forts chevaux,
Et marche jusqu'au soir dans la glèbe qu'il fouille.

Il heurte à chaque pas des restes de héros,
Javelots, boucliers, casques rongés de rouille,
Epouvanté de voir la grandeur de leurs os.

6. *Traduisez :*

Je monte au cinquième étage par l'ascenseur.
Les ouvriers sont en grève.
Je prendrai votre parti, car, à mon avis, vous avez
raison.
Le fils du général a épousé un bon parti.
Ce pauvre homme a du guignon depuis quelque
temps; il est encore sur le pavé.
Il a la cinquantaine.
Mettez-vous en mesure de remplir vos engage-
ments.
Je me mets en quatre.
Vous me mettez dans de beaux draps.
Vous y mettez du temps.

II.

HISTOIRE DE LA LANGUE.

Répondez en anglais aux questions suivantes :

- (a) A quels faits de l'Histoire faut-il attribuer la
disparition du dialecte de la Langue d'OC.
et pourquoi en a-t-on maintenant si peu de
traces ?

(b) Expliquez la phrase suivante :

“ En même temps que la forme des mots se modifiait, la syntaxe elle-même s'altérait au cours des temps.”

(c) La langue française a-t-elle conservé des traces du genre neutre ?

(d) De quel genre doivent être les substantifs dérivés du latin ? Donnez la règle et les exceptions.

(e) Donnez et expliquez au moyen de l'étymologie le genre des mots suivants :

Sacrifices, hospitalité, pommes, avoine, beurre, printemps, études, différences, ciel, fleur, feuille.

FRENCH.

FOURTH PAPER.

The Board of Examiners.

PRESCRIBED AUTHORS.

Traduisez les extraits suivants et commentez dans la marge tous les mots et passages soulignés, en ayant soin d'indiquer à la fin de chaque passage l'ouvrage, l'auteur et les personnages en question:—

(a) Il réfléchit une minute, la vit toute seule, dans la maison vide :

Où est-il ce petit ?

Au Bas-Meudon, chez un marinier qui l'a recueilli pour quelques jours Après, c'est l'hospice, l'assistance.

Eh ! bien, va le chercher puisque tu y tiens . . . Elle lui sauta au cou, et d'une joie d'enfant, tout le soir, fit de la musique, chanta, heureuse, exubérante, transfigurée. Le lendemain, en wagon, Jean parla de leur décision au gros Hettéma qui paraissait instruit de l'affaire, mais désireux de ne pas s'en mêler.

(b) Tout à coup vers dix heures il se fit un grand mouvement dans la foule. La porte du jardin tourna sur ses gonds violemment.

“C'est lui! . . . C'est lui!” criait-on.

C'était lui

Quant il parut sur le seuil, deux cris de stupeur partirent de la foule:

C'est un Teur! . . .

Il a des lunettes!

.

Son Sahara avait des légumes. . . . Tout près de lui, sur la jolie côte verte de Mustapha supérieur, des villas algériennes, toutes blanches, luisaient dans la rosée du jour levant: on se serait cru aux environs de Marseille, au milieu des *bastides* et des *bastidons*.

(c) Accueilli dans une ville, emprisonné dans l'autre, et partout supérieur aux événements; loué par ceux-ci, blâmé par ceux-là; aidant au bon temps, supportant le mauvais, me moquant des sots, bravant les méchants, riant de ma misère et faisant, la barbe à tout le monde; vous

C'est la jalousie . . .

—Hein!

—d'anteur qui vous dévore!

Et ceci, n'est il pas du dernier tendre encore?

“*Croyez que devers vous mon cœur ne fait
qu'un cri,*

Et que si les baisers s'envoiaient par écrit,

Madame, vous liriez ma lettre avec les lèvres!”

—Ha! Ha! ces lignes-là sont . . . Hé! hé!
mais bien-mièvres!

—Et ceci. . .

—Vous savez donc ses lettres par cœur?

—Toutes!

Il n'y a pas à dire: c'est flatteur!

—C'est un maître!

—Oh! . . un maître!

Un maître soit! . . . un maître.

Expliquez et commentez les phrases suivantes:—

- (a) Corneille est haut et sain ; il a épuré le théâtre et présenté au public des personnages fiers, généreux, héroïques ; il n'a jamais immolé le devoir à la passion.
- (b) Molière n'a pas écrit pour un certain monde, mais pour tout le monde.
- (c) Voltaire, qui commence à faire parler de lui en 1714 et meurt dans une apothéose en 1778, a rempli presque tout le XVIII^e Siècle. Il est impossible de prendre en bloc un tel homme.
- (d) Mme. de Staël appartient au XVIII^e Siècle ; elle est le XVIII^e tout entier. Mais elle est aussi cosmopolite ; elle n'a pas du tout une nature artiste et son œuvre a très peu de valeur esthétique.

- (e) La faculté la plus forte de G. Sand c'est l'imagination. C'est elle qui, dans le roman, exprime surtout le romantisme lyrique, considéré comme l'expansion d'une sentimentalité effrénée et de tous ces états extrêmes dont Chateaubriand et Byron donnèrent les modèles.

GERMAN.

FIRST PAPER.

The Board of Examiners.

COMPOSITION—UNSEEN TRANSLATION.

1. Translate into German—

- (a) Two thousand summers have imparted to the monuments of Grecian literature, as to her marbles, only a maturer golden and autumnal tint, for they have carried their own serene and celestial atmosphere into all lands, to protect them against the corrosion of time. Books are the treasured wealth of the world and the fit inheritance of generations and nations. Books, the oldest and the best, stand naturally and rightfully on the shelves of every cottage. They have no cause of their own to plead, but while they enlighten and sustain the reader his common sense will not refuse them. Their authors are a natural and irresistible aristocracy in every society, and, more than kings or emperors, exert an influence on mankind. When the illiterate and perhaps scornful trader has earned by enterprise and industry his coveted leisure and independence, and is admitted to the circles of wealth and fashion, he turns inevitably at last to those

still higher, but yet inaccessible, circles of intellect and genius, and is sensible only of the imperfection of his culture and the vanity of all his riches, and further proves his good sense by the pains which he takes to secure for his children that intellectual culture whose want he so keenly feels; and thus it is that he becomes the founder of a family.

- (b) "Which is the most reasonable and does his duty best—he who stands aloof from the struggle of life, calmly contemplating it, or he who descends to the ground, and takes his part in the contest? The earth, where our feet are, is the work of the same power as the immeasurable blue yonder, in which the future lies into which we would peer. Who ordered toil as the condition of life, ordered weariness, ordered sickness, ordered poverty, failure, success—to this man a foremost place, to the other a nameless struggle with the crowd—to that a shameful fall, or a paralyzed limb, or sudden accident—to each some work upon the ground he stands on, until he is laid beneath it?" While they were talking the dawn came shining through the windows of the room, and Pen threw them open to receive the fresh morning air. "Look, George," said he; "look and see the sun rise. He sees the labourer on his way a-field; the work-girl plying her poor needle; the lawyer at his desk, perhaps; the beauty smiling asleep on her pillow of down, or the jaded reveller reeling to bed; or the fevered patient tossing on it; or the doctor watching by it; or the child just born into the world—born to take his part in the suffering and struggling, the tears and laughter, the crime, remorse, love, folly, sorrow, rest."

2. Translate into English—

- (a) Mein Vater war Landgeistlicher in einem Dorfe des Herzogtums. Er hatte genügende Mittel um mir, als dem einzigen Sohne neben mehreren Töchtern, jede Art von Erziehung geben zu können. Er bestimmte mich zum Gelehrtenstande, ich sollte in seine Fusstapfen treten, und nichts konnte ihn von diesem Gedanken abbringen, so zeitig sich auch meine Neigung verriet, in der wohl etwas Anererbtes lag, denn ein frühe verschollener Vatersbruder war Maler gewesen, doch fand man das Beispiel abschreckend, da eben dieser Oheim ein trauriges Ende in fernem Auslande gehabt haben sollte. So wurde ich in eine vielbesuchte städtische Pension verbracht. Hier bis in das fünfzehnte Jahr dem gewöhnlichen Lehrgang in den alten Sprachen mit wenig Lust und Eifer folgend, und mehr und mehr von dem dumpfen Gefühl eines verfehlten Berufes gedrückt, schloss ich mich scheu und ungesellig in eine Phantasiewelt ein, die sich schon in den Tagen der Kindheit unter den Eindrücken einer merkwürdigen Gebirgsgegend und eines märchenreichen Dorfes zu bilden angefangen hatte. Der plötzliche Tod meines Vaters konnte vorerst in meiner Bestimmung nichts ändern. Entscheidend war dagegen ein Ferienbesuch bei einem Paten, der als Förster einer adligen Herrschaft nur einige Stunden von meiner früheren Heimat entfernt, auf einem stillen Dorfe sass. Der Grundherr, Baron Neuburg, ein Mann von vielseitiger Bildung, in früheren Jahren Militär, von Sitten schlicht und anspruchslos, stand mit dem Försterhause in freundlichem Verkehr. Er war mir immer geneigt gewesen, mein Zustand

ging ihm nahe, und seiner Vermittlung gelang es zuletzt, mir die ersehnte Laufbahn zu eröffnen.

- (b) Ich will nicht untersuchen, woher unsrer jetzigen Jugend die Einbildung gekommen ist, dass sie dasjenige als etwas Angeborenes bereits mit sich bringe, was man bisher nur auf dem Wege vieljähriger Studien und Erfahrungen erlangen konnte, aber soviel glaube ich sagen zu können, dass die in Deutschland jetzt so häufig vorkommenden Ausserungen eines alle Stufen allmählicher Entwicklung keck überschreitenden Sinnes zu künftigen Meisterwerken wenige Hoffnung machen. Das Unglück ist, im Staat, dass niemand leben und geniessen, sondern jeder regieren, und in der Kunst, dass niemand sich des Hervorgebrachten freuen, sondern jeder seinerseits wieder produzieren will. Es ist ferner kein Ernst da, der ins Ganze geht, kein Sinn, dem Ganzen etwas zuliebe zu tun, sondern man trachtet nur, wie man sein eigenes Selbst bemerklich mache und es vor der Welt zu möglichster Evidenz bringe. Dieses falsche Bestreben zeigt sich überall, und man tut es den neuesten Virtuosen nach, die nicht sowohl solche Stücke zu ihrem Vortrage wählen, woran die Zuhörer reinen musikalischen Genuss haben, als vielmehr solche, worin der Spielende seine erlangte Fertigkeit könne bewundern lassen. Überall ist es das Individuum, das sich herrlich zeigen will, und nirgends trifft man auf ein redliches Streben, das dem Ganzen und der Sache zuliebe sein eigenes Selbst zurücksetzte.

- (c) O glücklich, wer noch hoffen kann,
Aus diesem Meer des Irrtums aufzutauchen !

Was man nicht weiss, das eben brauchte man,
 Und was man weiss, kann man nicht brauchen.
 Doch lass uns dieser Stunde schönes Gut
 Durch solchen Trübsinn nicht verkümmern !
 Betrachte, wie in Abendsonne-Glut
 Die grünumgebnen Hütten schimmern.
 Sie rückt und weicht, der Tag ist überlebt,
 Dort eilt sie hin und fördert neues Leben.
 O dass kein Flügel mich vom Boden hebt,
 Ihr nach und immer nach zu streben !
 Ich säh' im ewigen Abendstrahl
 Die stille Welt zu meinen Füßen,
 Entzündet alle Höh'n, beruhigt jedes Tal,
 Den Silberbach in goldne Ströme fliessen.
 Ach ! zu des Geistes Flügeln wird so leicht
 Kein körperlicher Flügel sich gesellen.
 Doch ist es jedem eingeboren,
 Dass sein Gefühl hinauf und vorwärts dringt,
 Wenn über uns, im blauen Raum verloren,
 Ihr schmetternd Lied die Lerche singt,
 Wenn über schroffen Fichtenhöhen
 Der Adler ausgebreitet schwebt,
 Und über Flächen, über Seen
 Der Kranich nach der Heimat strebt.

 GERMAN.

SECOND PAPER.

The Board of Examiners.

PRESCRIBED AUTHORS.

I.

1. Translate into English, locate, and annotate :—

- (a) “ Soll doch nicht als ein Pilz der Mensch dem Boden entwachsen,

Und verfaulen geschwind an dem Platze,
der ihn erzeugt hat,
Keine Spur nachlassend von seiner lebendigen
Wirkung !
Sieht man am Hause doch gleich so deutlich,
wess Sinnes der Herr sei,
Wie man, das Städtchen betretend, die
Obrigkeiten beurteilt.
Denn wo nicht immer von oben die Ordnung
und Reinlichkeit wirkt,
Da gewöhnet sich leicht der Bürger zu
schmutzigem Saumsal,
Wie der Bettler sich auch an lumpige
Kleider gewöhnet."

(b) "Wahrlich, unsere Zeit vergleicht sich den
seltensten Zeiten,
Die die Geschichte bemerkt, die heilige wie
die gemeine.
Denn wer gestern und heute in diesen Tagen
gelebt hat,
Hat schon Jahre gelebt ; so drängen sich
alle Geschichten.
Denk' ich ein wenig zurück, so scheint mir
ein graues Alter
Auf dem Haupte zu liegen, und doch ist die
Kraft noch lebendig."

(c) "Wie der wandernde Mann, der vor dem
Sinken der Sonne
Sie noch einmal ins Auge, die schnellver-
schwindende, fasste,
Dann im dunklen Gebüsch und an der Seite
des Felsens
Schweben siehet ihr Bild ; wohin er die
Blicke nur wendet,

Eilet es vor und glänzt und schwankt in
herrlichen Farben :
So bewegte vor Hermann die liebliche
Bildung des Mädchens
Sanft sich vorbei und schien dem Pfad in's
Getreide zu folgen.

2. Write a short comment on (a) the metre, and
(b) the language of "Hermann und Dorothea."

II.

1. Translate into English, and comment upon the following passages :—
- (a) Der Zweck der Idylle ist überall nur der, den Menschen im Stand der Unschuld, d.h. in einem Zustand der Harmonie und des Friedens mit sich selbst und von aussen darzustellen. Aber ein solcher Zustand findet nicht bloss vor dem Anfange der Kultur statt, sondern er ist es auch, den die Kultur, wenn sie überall nur eine bestimmte Tendenz haben soll, als ihr letztes Ziel beabsichtigt. Die Idee dieses Zustandes allein, und der Glaube an die mögliche Realität derselben, kann den Menschen mit allen Übeln versöhnen, denen er auf dem Wege der Kultur unterworfen ist, und wäre sie bloss Chimäre, so würden die Klagen derer, welche die grössere Sozietät und die Anbauung des Verstandes bloss als ein Übel verschreien und jenen verlassenen Stand der Natur für den wahren Zweck des Menschen ausgeben, vollkommen gegründet sein. Dem Menschen, der in der Kultur begriffen ist, liegt also unendlich viel daran, von der Ausführbarkeit jener Idee in der Sinnenwelt, von der möglichen Realität jenes Zustandes eine sinnliche Bekräftigung zu erhalten, und

da die wirkliche Erfahrung, weit entfernt, diesen Glauben zu nähren, ihn vielmehr beständig widerlegt, so kommt auch hier, wie in so vielen andern Fällen, das Dichtungsvermögen der Vernunft zuhülfe, um jene Idee zur Anschauung zu bringen und in einem einzelnen Falle zu verwirklichen.

(b) Naiv muss jedes wahre Genie sein, oder es ist keines. Seine Naivheit allein macht es zum Genie, und was es im Intellektuellen und Ästhetischen ist, kann es im Moralischen nicht verleugnen. Unbekannt mit den Regeln, den Krücken der Schwachheit und den Zuchtmeistern der Verkehrtheit, bloss von der Natur oder dem Instinkt, seinem schützenden Engel, geleitet, geht es ruhig und sicher durch alle Schlingen des falschen Geschmacks, in welchen, wenn es nicht so klug ist, sie schon von weitem zu vermeiden, das Nichtgenie unausbleiblich verstrickt wird. Nur dem Genie ist es gegeben, ausserhalb des Bekannten noch immer zu Hause zu sein und die Natur zu erweitern, ohne über sie hinauszugehen.

2. Geben Sie, auf Deutsch oder auf Englisch, kurz den Gedankengang von Schillers Abhandlung "Ueber naive und sentimentalische Dichtung," an, und zeigen Sie dabei besonders, wie die Ausdrücke "naiv" und "sentimentalisch" von ihm gebraucht werden und ferner, worin die Bedeutung dieses Werkes liegt.

III.

Translate, locate, and comment upon the following passage :—

Im Kriege selber ist das letzte nicht der Krieg.

Die grossen schnellen Taten der Gewalt,
 Des Augenblicks erstaunenswerte Wunder,
 Die sind es nicht, die das Beglückende,
 Das ruhig, mächtig Dauernde erzeugen.
 In Hast und Eile bauet des Soldat
 Von Leinwand seine leichte Stadt; da wird
 Ein augenblicklich Brausen und Bewegen,
 Der Markt belebt sich, Strassen, Flüsse sind
 Bedeckt mit Fracht, es rührt sich das
 Gewerbe.
 Doch eines Morgens plötzlich siehet man
 Die Zelte fallen, weiter rückt die Horde,
 Und ausgestorben, wie ein Kirchhof, bleibt
 Der Acker, das zerstampfte Saatfeld liegen,
 Und um des Jahres Ernte ist's getan.

IV.

Schreiben Sie eine kurze deutsche Inhaltsangabe von Grillparzers "Sappho," worin besonders der tragische Konflikt des Trauerspiels klar dargelegt ist.

GERMAN.

THIRD PAPER.

The Board of Examiners.

HISTORY OF LITERATURE; ESSAY.

1. (a) Geben Sie an, was Sie von der "politischen Dichtung" Deutschlands im 19ten Jahrhundert wissen, und welche Bedeutung diese für die Einigung die Gründung des neuen Reiches gehabt hat.

- (b) Was versteht man unter der "Zeit der Aufklärung" in 18ten Jahrhundert, und wer ist der Hauptvertreter derselben in Deutschland? Wie verhält sich diese Bewegung zum "Sturm und Drang"?
- (c) Zeigen Sie die Bedeutung der "Entdeckung" des deutschen Volksliedes für die neuere Lyrik. Wem verdanken wir sie, und welche Dichter haben den Ton des echten Volksliedes am besten zu treffen verstanden? Können Sie einige solcher neueren Lieder nennen?
- (d) Wie erklären Sie sich die Schwäche des deutschen Romans, verglichen mit dem englischen? Zitieren Sie Werke, die Sie gelesen haben, zur Erläuterung Ihres Urteils.
- (e) Was wissen Sie über die Ursprungszeit, die Verfasser und die Gattung der folgenden Werke: (a) das Hildebrandslied; (b) Parzival; (c) "Simplicissimus"; (d) "Die Abderiten"; (e) "Die Braut von Messina"; (f) "Des Knaben Wunderhorn"; (g) "Peter Schlemihl"; (h) "Die Weber"?

2. Schreiben Sie einen deutschen Aufsatz über eines der folgenden Themen:

"Dem Mimen flieht die Nachwelt keine Kränze."

"Welche Lebensführung und Lebensansicht empfiehlt Goethe im 'Tasso'?"

"Ein edler Mensch zieht edle Menschen an Und weiss sie festzuhalten."

SCHOOL OF NATURAL PHILOSOPHY.

GENERAL PHYSICS AND HEAT.

The Board of Examiners.

SIX questions only to be attempted.

1. Investigate the nature and magnitude of the correction which must be applied to a gravity determination in consequence of the finite curvature of the knife edges of the pendulums used.

By what device can the effect of this curvature be eliminated ?

2. Give the theory of the laboratory experiment for determining the coefficient of restitution of ivory.
3. If the mass per cm^2 ($= \sigma$) at any point distant r from the centre of a circular plate of gravitating matter of radius a is given by

$$\sigma = \frac{3 M}{2 \pi a^2} \sqrt{1 - \frac{r^2}{a^2}},$$

prove that the potential V at any point in the axis of the plate distant z from its centre is given by

$$V_z = \frac{3 \lambda M}{2 a^3} \left\{ az - (a^2 + z^2) \tan^{-1} \frac{a}{z} \right\}.$$

Hence show that at any point whose polar coordinates with respect to the centre and axis are ρ , θ ,

$$V_{\rho\theta} = -3\lambda M \left\{ \frac{1}{1.3\rho} - \frac{1}{3.5} \frac{a^2}{\rho^3} P^2 + \frac{1}{5.7} \frac{a^4}{\rho^5} P_4 - \&c. \right\}$$

when $\rho > a$.

4. Give an account of Laplace's theory of capillarity.

Point out the relation between the "intrinsic pressure" of that theory and (a) osmotic pressure, (b) the pressure within the mass of an imperfect gas.

5. Obtain an expression for the rise of temperature produced by a small isentropic compression, and describe the experiments by which Joule verified it.

6. Prove that the mechanical equivalent of the difference between the two principal specific heats of any substance is numerically equal to the product of the temperature, specific volume, isothermal bulk modulus and the square of the expansibility.

7. Deduce from the laws of thermodynamics an expression for the relation between the e.m.f. of a cell and the external pressure.

Give a summary of the results of Gilbault's experiments on this subject.

LIGHT AND SOUND.

*The Board of Examiners.***SIX questions only to be attempted.**

1. If u be the distance, measured from the first surface of a thick lens to an object point on its axis, and v the distance from the second surface to the image point, show that

$$\frac{1}{v - \beta} - \frac{1}{u - \alpha} = \frac{1}{F}$$

where α , β , and F are constants for the lens.

2. Describe fully how to produce, and how to test for, circularly polarized light.

A parallel beam consists partly of ordinary light and partly of circularly polarized light. How would you obtain the relative intensities of the two portions?

3. Describe the construction, give the complete theory, and explain the mode of working of the echelon diffraction grating.

Give an account of any one investigation in which this instrument has been used.

4. Give a full account of the evidence, mathematical and experimental, which warrants the identification of the light vector in any medium with the dielectric polarization current in that medium.

5. Give an account of Drude's presentation of the electromagnetic theory of ordinary dispersion. Show that it leads to Ketteler's dispersion formula.

Show how to deduce from this theory the true relation between the refractive index and specific inductive capacity of a transparent substance.

6. Describe the construction and mode of employment of the Vibration Microscope, and explain fully the manner of deducing the form of vibration of a vibrating body from its indications.
7. Give an account of Helmholtz's Theory of Combination Tones. Show how to calculate the frequencies of the various orders of these tones.

ELECTRICITY AND MAGNETISM.

The Board of Examiners.

SIX questions only to be attempted.

1. Obtain from elementary principles the three usual expressions for the energy of a system of charged conductors.

Prove the relations—

$$p_{mn} = p_{nm},$$

$$p_{nn} < p_{mm} \text{ or } p_{nn},$$

where the p 's are coefficients of potential.

Show also from your equations that, if a given charge be distributed over a number of conductors in such a way that the energy of the system when in electrical equilibrium is a minimum, the conductors are all at the same potential.

2. Investigate the effect on a uniform electric field of introducing into it a sphere of dielectric of different specific inductive capacity.
3. Prove that the potential at any point in the field of a uniform magnetic shell is equal to $\phi \Omega$ where ϕ = strength of shell and Ω = solid angle subtended by shell at point.

If the shell be a plane circle of radius y , and if a short magnet of moment M and length 2λ be placed so that its centre lies in the axis and at a distance x from the centre of the shell, prove that the mutual energy of the magnet and the shell is equal to

$$\frac{2\pi \phi M}{r} \sin^2 \alpha \left\{ A_1^1 P_1 + \frac{1}{3} A_3^1 P_3 \frac{\lambda^2}{r^2} + \frac{1}{5} A_5^1 P_5 \frac{\lambda^4}{r^4} + \&c. \right\}$$

$\cos \alpha$ being the argument of the A Legendre functions where $\tan \alpha = y/x$ and $r^2 = x^2 + y^2$, and $\cos \theta$ that of the P functions where θ is the angle between the axis of the magnet and that of the shell.

[For any Legendre functions Q , argument μ ,

$$Q_{i-1} - \mu Q_i = \frac{1 - \mu^2}{i} Q_i']$$

4. Investigate the theory of a moving-coil ballistic galvanometer with a rectangular coil suspended so as to move in the gap between a cylindrical iron core and cylindrical pole pieces symmetrically arranged so as to give a radial magnetic field which is uniform round the gap.

Show that with such a ballistic galvanometer the time during which the transient current passes need not be very small compared with the time of oscillation of the suspended coil.

5. Describe, with full theoretical and practical detail, Lorenz's method for the determination of the ohm.
6. Show that—

$$H = 4\pi V_v P,$$

$$R = -V_u B,$$

are legitimate generalizations of the two experimental laws usually expressed by

$$\text{M.M.F. } (= \int H ds) = 4\pi C,$$

$$\text{e.m.f. } (= \int R ds) = -\frac{dN}{dt},$$

where P is the Faraday lines per cm^2 and v their velocity, B the magnetic lines per cm^2 and u their velocity, while H and R are the magnetic and electric intensities respectively.

7. Two points are joined in parallel arc by two conductors whose resistances and self-inductances are R_1, R_2 , and L_1, L_2 respectively, the conductors being so placed that their coefficient of mutual inductance is M ; find for alternating currents of given period the resistance and inductance of the single conductor equivalent to the two.

SPECIAL COURSE.

The Board of Examiners.

- 1 Write Essays on any two of the following subjects:—
- (a) The measurement of solar and stellar temperatures.
 - (b) The heat received daily and yearly at each point on the earth's surface from the sun.
 - (c) Repulsion resulting from radiation.
 - (d) The solar constant.
 - (e) The influence of radio-active research on the problem of the secular cooling of the heavenly bodies.

SCHOOL OF GEOLOGY, PALÆONTOLOGY,
AND MINERALOGY.

GEOLOGY.

FIRST PAPER.

The Board of Examiners.

1. Give a condensed account of the principal views as to the composition and condition of the interior of the earth, and indicate the nature of the evidence, if any, in favour of each of the views.
2. An alternating series of hard and soft stratified rocks is gradually uplifted to a dome-shaped projection, rising to a considerable altitude above

sea-level. Discuss the nature of the river systems which will arise during the development of the drainage system through youth to maturity.

3. Give an account of the symmetry and chief forms present in the Sphenoidal type of the Tetragonal system. Point out its relations to the normal type and name a mineral crystallizing in the Sphenoidal type.
 4. Give the chemical composition, crystalline form, and mode of occurrence of the following minerals :—
Monazite, Tantalite, Iodyrite, Vivianite, Tridymite, Cossyrite.
 5. Sections from a biaxial mineral are cut at right angles to an optic axis, to the acute bisectrix and to the obtuse bisectrix, respectively. Explain what is seen in each case when the sections are viewed in convergent polarized light, and explain how the optical sign of the mineral may be determined.
 6. Point out the scope, and explain the limitations of the law of decreasing basicity as affecting the order of consolidation of minerals from molten magmas.
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GEOLOGY.

SECOND PAPER.

The Board of Examiners.

1. Discuss the nature and origin of the following :—
Propylite, Saussurite, Essexite, Limburgite
Fluxion Gneiss, Hornblende Schist.
2. Describe the characters by which you would recognise the following minerals under the microscope :—
Anorthoclase, Oligoclase, Nepheline, Zoisite, Ilmenite.
3. State the horizon and diagnostic characters of the principal Ordovician graptolites, and discuss any anomalies which may occur in the Victorian as compared with the extra-Victorian succession.
4. What do you know of the systematic position and stratigraphical range of the following :—
Archæocyathus, Rhinopterocaris, Glossopteris, Laurus Werribeensis, Dinesus Ida, Lepidodendron Australe.
5. At what geological horizons have glacial deposit, been recognised? Mention the principal Australian localities for each glaciation, correlate them with similar occurrences outside Australia, and briefly refer to the probable mode or modes of origin of the deposits.
6. Give an account of the physiography, geological structure, and petrology of the Ballarat district.

SCHOOL OF CHEMISTRY.

CHEMISTRY.

FIRST PAPER.

The Board of Examiners.

Write Essays on some (or all) of the following subjects :—

- (1) The atomic weights of hydrogen and oxygen, and the choice of a standard atomic weight.
- (2) The chemical study of sulphur in comparison with elements placed near it in the natural classification.
- (3) Radio-active elements.
- (4) Polyiodides, inorganic and organic.
- (5) The more important features of the chemistry of gold.
- (6) Processes for the manufacture of white lead.

CHEMISTRY.

SECOND PAPER.

The Board of Examiners.

Write Essays on some (or all) of the following subjects :—

- (1) Amido-acids and their electrolytic characters.
- (2) The synthesis of ketones.
- (3) The constitution and synthesis of fructose.
- (4) Diazonium compounds.
- (5) The triphenylmethane group of dyes.
- (6) The constitution of camphor.

CHEMISTRY.

THIRD PAPER.

The Board of Examiners.

Write Essays on some (or all) of the following subjects:—

- (1) The solubilities of “insoluble” salts; their measurement, and their alteration in the case of a mixture of two such salts with a common ion.
 - (2) The theory of such abnormal solubilities as that of sodium sulphate.
 - (3) The influence of the solvent in electrolysis.
 - (4) The theory of “side reactions” and of “consecutive reactions.”
 - (5) The thermochemistry of neutralization (acids and bases).
 - (6) The progressive change of physical properties in a homologous series of carbon compounds.
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FINAL HONOUR EXAMINATION IN LAWS.

PUBLIC INTERNATIONAL LAW.

The Board of Examiners.

Candidates should answer **FIVE** questions only.

1. Write a note on the equality of States in modern International Law.
2. Consider the developments in Africa and the Far East during the last 25 years in their bearing upon International Law.
3. Trace the history and discuss the present position of the rules "Free Ships, Free Goods;" "Enemy Ships, Enemy Goods."
4. What is the right of search, and by whom and in what circumstances is it exercisable? Is it ever applicable in time of peace?
5. Write a note on the problem of reconciling the duties of a neutral in time of war with the right of neutral subjects to engage freely in commercial intercourse.
6. Write a note on the influence exerted by Russia or the United States in the development of International Law.
7. Write a note on the present position in time of war of submarine mines, cables, newspaper correspondents, mail steamers.

PRIVATE INTERNATIONAL LAW.

The Board of Examiners.

Candidates should answer **FOUR** questions only.

1. *A* is made bankrupt in England. By the Insolvency Act of Victoria, a settlement made by a person within five years preceding the sequestration of his estate becomes void as against the assignee, unless the settlor was at the time of settlement able to pay his debts without recourse to the property comprised in the settlement. In the English Bankruptcy Act 1883, there is a similar clause, but the term fixed is ten years. *A* had made a settlement of property in Victoria five years before his insolvency, and another seven years before, and in neither case can it be shown that he was able to pay his debts without the aid of the property in question. The English trustee in bankruptcy requires advice as to the courses open to him.
2. *A*, a person domiciled in England, dies intestate. His whole property consists of land in Victoria, valued at £2,000. The Victorian Intestates Estates Act 1896 charges the beneficial estates of deceased persons with £1,000 in favour of the widow; an English Act of 1890 confers a similar right to £500. To what would you consider the widow of this deceased entitled? Do you consider that the result would be affected if the Victorian land were sold, and the assets distributed in an administration suit in England?
3. Discuss the relevancy of the intention of the parties in determining the governing law of a contract.

4. (a) In an action for breach of a Victorian contract to load a cargo of wheat in a foreign port, defendant pleads that at the time when the contract should have been performed military operations were in progress in the foreign country, and the Government therein forbade the export of all corn, and made it a penal offence to carry any corn out of the country. The plaintiff demurs.

(b) A contract is made in Peru between the Government of that country and *D*, for the loan of a large sum of money, and *D* lends the money accordingly. A revolution takes place in Peru, and a provisional Government is formed which is ultimately recognized by all the Powers as the Government of Peru. This Government assigns to *D* a large quantity of guano as security for a portion of the debt, and *D*, by its authority, sells the guano, and applies the proceeds towards the liquidation of the debt. A second revolution restores the original Government (which is in due course recognized), which repudiates all the acts of the revolutionary Government, among them the transactions with *D*, and sues *D*, in England, for the recovery of the money received by him from the sale of the guano. *D* resists the claim, and counter-claims for the balance of his debt.

Consider the cases.

5. *H* and *W* are domiciled in Victoria. *H* presents a petition for divorce in Victoria on the ground of *W*'s adultery with *X*, whom he joins as co-respondent, and from whom he claims damages. The adultery was committed in a foreign country,

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and it is proved that, according to the law of that country, no divorce *a vinculo* can be had, and also, that, while the co-respondent is liable to proceedings of a punitive character, no civil action exists whereby a claim for damages can be sustained.

Consider the relevancy of these matters in the Victorian divorce proceedings.

6. What is the doctrine of *Renvoi*. What cases have arisen in England concerning it?

Or,

7. Is there any, and what, sense in which it is correct to speak of (a) an Imperial Bankruptcy Law, (b) the national law of a British subject?

CONSTITUTIONAL HISTORY AND LAW.—

PART I.

The Board of Examiners.

Candidates should answer **FIVE** questions only.

1. "In England we have substituted for the notion of citizenship or membership of the State, the feudal notion of the relation between lord and man." Explain and illustrate this statement.
2. Consider briefly the relation of the Crown and the State to the land in the English system.
3. Write a note comparing *prerogative* and *privilege* with special reference to their control by courts of law.

4. Write a note on the statement that "The king reigns but does not govern."
 5. What do you mean by the ideas of peerage and nobility? Do you consider that there is any, and what, truth in the view that nobility of blood is unknown in the law of England?
 6. Write a note on barony by tenure or the history of life peerages.
 7. Write a note on the following :—
 - (a) *Judicium parium; legem terrae; breve quod vocatur Praecipis; commune consilium regni,*
or
 - (b) Recent reviews of the constitutional import of Magna Carta.
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THE LAW OF WRONGS AND THE LAW
OF PROCEDURE.

FIRST PAPER.

Mr. C. J. Z. Woinarski.

1. Consider the history and limits of English classifications of wrongs.
2. Consider the statement that "the liability of the Commonwealth for the acts of its servants depends altogether upon the relation of the Commonwealth to its servants in regard to the particular matter in question."

3. Consider the principles of law applicable in an action against a trades union and its officers for procuring the dismissal from his employment of a non-unionist.
4. In the judgment in *Merivale v. Carson* (20 Q.B.D. 281)—Lord Esher, M.R., said: "It is said that if in some other case the alleged libel would not be beyond the limits of fair criticism, and it could be shown that the defendant was not really criticising the work, but was writing with an indirect and dishonest intention to injure the plaintiff, still the motive would not make the criticism a libel." What was Lord Esher's opinion upon the point, and upon what reasoning was it based? How is the point now actually decided?
5. In the exercise of a quasi-judicial discretion, what conditions must be satisfied, by the persons or bodies who act, to exclude intervention by a Court of Justice even in regard to a decision which the Court may think wrong? If such conditions be not satisfied, what are the terms of the order the Court will make?
6. Consider *A*'s right of action in each of the following cases:—
 - (a) *B*, who had been shooting rabbits, left a gun loaded and at full cock standing inside a fence on his land, beside a gap, from which a private path led over his land from a public road to his house. *B*'s son, aged 15 years, coming from the road through the gap on his way home found the gun, and with it went back to the public road, and not knowing that the gun was loaded he pointed it in play at *A*, who was on the road, and the gun went off and destroyed *A*'s eyesight.

- (b) Accompanied by *B* his wife, *C* his son (a schoolboy), and *D* his private secretary, *A* was a passenger upon a tram in Melbourne, and owing to the combined negligence of the tram conductor and of *X*, a motorist, *B*, *C*, and *D* were killed in a collision which thereby occurred.
- (c) *B*, in the year 1886, worked coal under his land adjoining the garden of *A*. In the year 1896 *B* sold his land and coal mine to *C*. In the year 1906 *A*'s land subsided owing to the workings in the year 1886, and *A*'s house fell in consequence thereof.
- (d) *C*, the bailiff of *B*, in order to effect a distress for rent in arrear by *A*, went through a house adjoining *A*'s house and into the yard at the back thereof, and thence climbed over the wall into the yard of *A*'s house and entered *A*'s house by an open window and distrained for the rent.
- (e) *B* was the owner of a ferry boat, and on *B*'s wharf a notice was displayed, which stated that "a fare of one penny must be paid on entering or leaving this wharf, whether the passenger has travelled by the ferry or not." *A* paid a penny, and went on to the wharf to use the ferry, but having missed the boat sought to leave the wharf without further payment. The turnstile-keeper, who stated that the notice referred to contained his instructions, forcibly prevented *A* from leaving the wharf until *A* effected his escape.
- (f) A municipality made a drain across a highway within its district, and covered the drain with a bridge of wood. Thereafter the municipality

did nothing to repair the bridge, which, in the course of nature, became so weak that *A*'s horse when being driven by *A* along the road, broke through the bridge and was killed.

- (g) *A*, an outgoing tenant, left a picture hanging on a wall, and *B*, the new tenant, refuses to allow *A* to come and take the picture away.
7. In *Rex v. McGrowth* (1746), the prisoner pleaded that he had joined the rebels under compulsion. What direction did the Chief Justice, in summing up, give to the jury?
8. (a) In what circumstances can a person be guilty of homicide by non-feasance?
- (b) Is the mere fact that a prisoner is shewn to have sworn to two contradictory statements, sufficient evidence to justify his conviction for perjury?
9. *A* was presented for attempting to discharge a loaded revolver at *B*, with intent to do him grievous bodily harm. The Crown proved that during an interview between *A* and *B*, *A* drew a loaded revolver from his coat pocket; that *B* immediately seized *A* and prevented him from raising his arm; that a struggle ensued, in the course of which *A* nearly succeeded in getting his arm free, but after a few minutes *B* wrested the revolver from him, and *A* was taken into custody. During the struggle, *A* several times said to *B*, "You've got to die." *A* was convicted. Can the conviction be sustained? Give the reason for your answer.

10. *A* was presented for stealing three lambs, the property of some person or persons unknown, and, in a second count, with receiving them, knowing them to have been stolen. The Crown proved that seven young lambs were found on *A*'s premises, that *A* had been asked to account for their possession, and truthfully accounted for four of them, but gave an untrue account of the possession of the remaining three lambs. Lambs, similar to the three lambs in *A*'s possession, had been missed from a neighbouring sheep-run, but the three lambs could not be identified as those from the sheep-run, and except *A*'s own statement of possession, there was no evidence as to the ownership of these lambs, or as to their having been stolen. The jury convicted *A* of receiving. Can the conviction be sustained? Give the reasons for your answer.
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THE LAW OF WRONGS AND THE LAW OF
PROCEDURE.

SECOND PAPER.

Mr. C. J. Z. Woinarski.

A.—CIVIL PROCEDURE.

1. (a) When may a claim for interest be included in a special indorsement of a writ of summons?
- (b) A writ is indorsed as follows:—"The plaintiff's claim is for the price of goods sold and delivered to the defendant at his request" (then followed particulars of the goods supplied and their price, which amounted in all to £50), "and the

plaintiff also claims interest on £50 from the date of the writ until payment or judgment. Place of trial, Melbourne. (Signed) *A.B.* And the sum of £6 6s. (or such sum as may be allowed on taxation) for costs. If the amount claimed be paid to the plaintiff or his solicitor within four days from the service hereof further proceedings will be stayed." Is this a proper special indorsement? If the plaintiff applies for leave to sign judgment under Order XIV., R. 1, what are the different orders that may be made by the Judge?

- (c) A writ is issued to recover payment of a promissory note under the Instruments Act 1890, and the defendant applies under that Act for leave to appear to the writ and to defend the action, which is granted by the Judge, unconditionally. The plaintiff now applies to a Judge for leave to sign judgment under Order XIV., R. 1. What order should be made by the Judge?
- (d) A writ under the Instruments Act 1890 was served on the defendant, who was temporarily present in the State of Victoria, but who permanently resides in New Zealand, and is domiciled there. Is the service effectual?
2. What are the provisions of the Rules of the Supreme Court in regard to an account directed to be taken as to—
- (a) the mode in which the account is to be made out;
- (b) the books of account being taken as *prima facie* evidence;
- (c) the mode of vouching the accounts;
- (d) surcharge;
- (e) the making of just allowances?

3. Write a note upon (a) the joinder of plaintiffs and of defendants in actions of tort; (b) the grounds upon which the production of documents in a party's possession may be lawfully refused for the inspection of the opposite party.
4. (a) Will the Supreme Court of Victoria grant leave to appeal direct from the decision of a single Judge of the Supreme Court to the Privy Council?
- (b) State the appellate jurisdiction of the High Court with respect to judgments of the Supreme Court of a State.
- (c) Upon what ground did the High Court in the case of *Parkin v. James*, 2 C.L.R. 315, entertain an appeal from an order made by a Judge of the Supreme Court of Victoria in Chambers? How, if at all, has the doctrine of *Parkin v. James* been modified in respect to a judgment of the Supreme Court of a State founded upon the verdict of a jury?
- (d) In what criminal cases will special leave to appeal be granted by the High Court?

B.—CRIMINAL PROCEDURE.

1. What are the provisions of the Justices Act 1890 as to the cases in which and the procedure by which the depositions of persons dangerously ill may be taken? When may such depositions be read in evidence, either for or against an accused person? What is the effect upon the admissibility in evidence of a deposition from which certain statements made by the witness during examination have been omitted?

2. *A* was charged on presentment with feloniously breaking and entering the dwelling-house of one *X*, and therein feloniously stealing two gold rings and one gold necklet, together of the value of £4, of the goods and chattels of the said *X*. At the trial it was proved that the dwelling-house belonged to *X*, but that the rings and necklet were the separate property of the wife of *X*, who was living with her husband in the house when the crime was committed. *A* was convicted. Can the conviction be upheld?
3. Give in outline the stages in a criminal trial from *arraignment* to *verdict*, and write brief notes upon *motion in arrest of judgment*, *writ of error*, *venire de novo*, *treason-felony*, *indictment*, *contempt of court*.

C.—EVIDENCE.

1. What are the leading points wherein a difference is made in civil and criminal evidence?
2. (a) Distinguish between logical and legal relevancy.
 (b) To what extent is evidence of the *character* of (a) a party, (b) a witness, (c) an accused person, admissible?
 (c) What is the law as regards evidence of professional communications?
3. It is necessary in an action to prove the following documents and facts:—
 (a) A conveyance executed in 1870, the witnesses to which are alive, but live at a great distance from the place of trial.

- (b) A conveyance executed in 1890, which is witnessed by a person of whom nothing is known, and of whom no trace can be found.
- (c) The contents of the will of *X*, which was proved in 1904, and the fact that *A* and *B* are the executors appointed by the will of *X*.

How should each of these documents and facts be proved ?

EQUITY.

Mr. J. E. Mackey.

1. Show that a Court of Equity has been disposed to treat charitable trusts with favour.
2. (a) Explain the statement that "the doctrine of election depends on compensation."
(b) In what circumstances may an improper appointment under a power raise a case for election ?
(c) *A*, and *B* his wife, are registered joint owners of certain shares in a brewery. By his will *A* bequeathes these shares to *B* for life, and at her death to his brother, and by the same will *A* gives certain leasehold property of his own to his wife. There is evidence that *A* looked on the brewery shares as his own absolute property, and that they were treated as such by the company. In the circumstances, what are the rights of the widow ?

3. *A* and *B* are trustees of a settlement by which a dairy farm in Gippsland is held by them to the use of *C* for life, and after the death of *C* to the use of the children (now infants) of *C*, and *C*, who is without means, is in possession of the farm. The rents and profits of the farm are insufficient to enable *C* to effect necessary repairs to the farm buildings and fencing, or to pay the municipal rates, which are in arrear, or to clear a great deal of fallen timber on the farm. The trustees have no funds of the trust in hand for repairs or improvements, and the trust deed is silent as to their power to make repairs and improvements. What, in the circumstances, is the duty of the trustees?
4. *A*, as solicitor for *B*, a merchant, obtained probate of the will of *X*, under the provisions of which *B* became entitled to a third share in the residuary estate of *X*. *B* required an immediate advance on his share, and *A* was asked by *B* to make the advance required out of moneys of his own. *A* suggested that he should purchase out and out *B*'s share, and to this *B* consented. A deed of purchase was executed by *A* and *B*, under which *A* bought at a fair price the share of the residue to which *B* was entitled. As a matter of fact, *B* had no separate independent advice at the time, but *A* had suggested to *B* the desirability of obtaining it, but *B*, on account of the expense, and on account of the fairness of the transaction, declined to be independently advised. *B* subsequently repudiated the deed of purchase. Is he entitled to do so?
5. What is a precatory trust?

A clause in a will which is relied upon as creating a precatory trust is definite, both as to

the subject-matter and as to the object of the alleged precatory trust. Will such definiteness impose a precatory trust upon the property specified in the clause?

When is parol evidence admitted to support or to rebut a resulting trust? Give examples.

6. Property of *A*, a married woman, was settled in the year 1905 upon *A* for life, with a restraint upon anticipation, and with the general power in *A* to appoint the *corpus*, and after *A*'s death, and in default of appointment, to *A*'s children equally. In 1905 *A* obtained a decree absolute dissolving her marriage. In 1906 *A* became insolvent, and *B* was appointed her trustee in insolvency. What rights, if any, has *B* in respect of the above property?
7. What are *B*'s rights of specific performance in each of the following cases:—
- (a) Lands were limited to such use as *A* and his wife shall appoint, and in default of appointment to the wife of *A* for her life, with remainder to *A* in fee simple. *A* contracts to sell the lands to *B* by a contract reciting these limitations, but providing for a conveyance by all proper parties, and *B* pays the purchase money to the trustees. The wife of *A* subsequently refuses to concur.
- (b) *A* writes to *B* offering to sell a block of land for £1,800, which offer *B* accepts. In making his offer, *A* had based it upon an addition by the valuers of the values of several allotments in the block, the correct total addition being £2,800. On discovering his error, *A* repudiates the contract.

8. Upon what principles, and in what circumstances, will a Court of Equity give relief from unconscionable bargains?
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LAW OF PROPERTY IN LAND AND CONVEYANCING.

Mr. Guest.

1. What is the effect of a devise of land to *B* for 30 years if he so long live, and subject thereto, to the first son of *A*, who shall attain 21 years of age, and his heirs? *A* was a bachelor at the death of the testator. Give reasons.
2. Criticise Mr. Williams' classification of corporeal and incorporeal hereditaments.
3. If the trustees for the time being of a settlement are given a power to sell the trust property, and there is nothing in the settlement which expressly restricts the exercise of the power to any specified period, how, if at all, does the rule against perpetuities apply? Give reasons.
4. In a lease for seven years the lessee covenanted to cut ferns, &c., once at least every three months. During the fifth year, the lessee omitted to do so. The lessor wrote to the lessee, and complained of the breach of covenant, and added—"I desire also to call your attention to the provision in your lease in the following

words :—‘ If the tenant shall commit a breach of any of the covenants on his part herein contained, the lease shall thereupon become absolutely void and of no effect.’ If your default continues until the next rent day, I shall seriously consider the advisability of resuming possession.” The default continued until the next rent day, when the tenant paid rent up to date and quitted possession. Two years of the original term of seven years were then unexpired. What (if any) are the rights and remedies of the lessor? Give reasons.

5. What is the present state of the law with regard to relief against forfeiture for non-payment of rent?
6. What is meant by the rule that in order that the benefit of a covenant may run with the land the assignee must be in of the same estate as the assignor? Illustrate by an example?
7. Why is it practically important that the vendor of leasehold, who is himself an assign of the lease, should see that the assignment to the purchaser is legally effectual? Give reasons.
8. The purchaser of leasehold under an open contract requisitioned for *first* proof that the lease was duly granted, and *secondly* proof that all the covenants and provisions in the lease had been duly performed and observed. How should the vendor’s solicitor answer?
9. State concisely the law with regard to the dedication of highways to the public.

10. In 1878 land was demised to the plaintiffs for 30 years from 1st September, 1876, and the lease contained a proviso that at any time during the term the lessor, his heirs, or assigns would, on receiving notice from the plaintiffs of their desire to purchase the land, convey it to them for £1,500. The lessor died in 1902. In 1903 the plaintiffs served on his executor and the devisees of the land under the will of the lessor notice of their desire to purchase, and tendered the £1,500. The executor and the devisees refused to accept the money and convey the land, and the plaintiffs brought an action against them for specific performance. What defence (if any) have the defendants to the action? Give reasons.
11. If land is sold, and the vendor produces a certificate of title to the land in his own name, free from encumbrances, is it necessary or advisable for the purchaser or his solicitor to inspect any and which of the documents of title to the land prior in date to the certificate produced? Give reasons.
12. State why, in your opinion, no covenants for title are expressed or implied in the form of transfer prescribed by the Transfer of Land Act? Can you suggest any covenant for title which might be added with advantage in the case of a sale of land in fee-simple? Give reasons.
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THE LAW OF CONTRACTS AND PERSONAL
PROPERTY.

The Board of Examiners.

1. What distinction does Sir William Anson make between a pollicitation and a promise ?
2. What is the difference between "accord and satisfaction" and "accord executory" ?
3. What rights and remedies has the seller of goods when the buyer refuses to pay the stipulated price ?
4. What is necessary to constitute a gift of a chattel personal at Common Law ?
5. What is meant by the terms "Contract of Sale," "Sale," and "Agreement to Sell," in the Sale of Goods Act 1896 ?
6. Explain the equitable doctrine of part performance.
7. Explain the doctrine of "holding out" in the Law of Partnership.
8. What are the rights of partners as to the application of partnership property on the dissolution of a partnership ?
9. Explain the nature of a negotiable instrument.
10. Explain the nature of a bailment.

11. State the method of registering an assignment of book debts under the provisions of Act No. 1424.
12. What is the meaning of the expression "Bill of Sale" when used in Part VI. of the Instruments Act 1890?

ADMINISTRATIVE LAW.

The Board of Examiners.

Candidates should answer **THREE** questions only.

1. What are the principal conclusions drawn by French law from the distinction between *autorité* and *gestion*? What principles are applied to the determination of pecuniary claims against the State for *acte de gestion*?
2. In what sense is it true to say that an officer is not liable *qua* officer for wrongs done by him? Are legal proceedings ever taken against an officer in the name of his office?
3. In what ways is the protection of public officers or bodies provided for in the English system?
4. What are the principal considerations relevant in determining whether a corporate body represents the Crown and shares its immunities?
5. Write a note on *salus populi suprema lex*.
6. Write a note on the legal position of the Postmaster-General.

FINAL HONOUR EXAMINATION IN
MEDICINE.

THEORY AND PRACTICE OF MEDICINE.

The Board of Examiners.

1. Describe the modes of production of pneumothorax, its symptoms and diagnosis, and the conditions which make active treatment necessary.
 2. What are the forms of cirrhosis of the liver? Describe its causes, and mark it off from hepatic and other conditions which may be confused with it.
 3. Give a description of the symptoms and signs of an ordinary case of locomotor ataxy, and enumerate and distinguish from it any other nervous diseased states most liable to be confused with it.
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CLINICAL MEDICINE.

The Board of Examiners.

CASE FOR COMMENTARY.

Miss M. R., aged 43, admitted to hospital on 1st February, with the following history:—For about six years she had had ulcers on the legs, and for several years she had suffered from indigestion, marked specially by some pain about half-an-hour after food.

But, up till about a year before, she had not suffered from other signs, as severe pain, diarrhoea, or jaundice.

When first seen as an out-patient, a fortnight before, she complained of severe pain across the lower part of the chest, chiefly in the epigastrium and right hypochondrium. There had been vomiting for about ten days, with slight jaundice. There was tenderness on pressure over the liver. About a year ago she had a similar attack, lasting two months.

On examination, she was pale, and distinctly emaciated, the tongue was furred, and there was slight jaundice; the temperature was 99° , the pulse 96, the respirations 24; heart and lungs normal. The liver was enlarged, dulness extending up to the fifth rib in the nipple line, and down to an inch above the umbilicus. There was tenderness over the whole liver area, but chiefly in the epigastrium. The abdomen elsewhere was lax, and free from tenderness. There had been some pain radiating to the right shoulder. The veins on the right side seemed to be rather fuller than on the left.

For a few days she improved, temperature came down to normal in the morning, and never over 100° , no vomiting, tongue cleaner, and tenderness on pressure almost gone.

On 8th February she was much worse, vomiting returned; tenderness was marked, and the temperature went up to 103° . So things continued, temperature sometimes going up to 104° , and even to 105° on the 15th, when she had a severe rigor, great pain, and tenderness over the liver and in the right shoulder, and up the right side.

On the 17th the dullness on the right side was up to the third rib in the nipple line, breath sounds were weak below that level, and a soft pleural friction was heard. The right chest looked rather full, and the

veins were more distended. A blood count showed 15,000 leucocytes.

Comment on the case, especially as to cause, exact seat, and progress of symptoms, and discuss prognosis and treatment.

OBSTETRICS.

The Board of Examiners.

CASE FOR COMMENTARY.

A woman aged 36 years, *à primipara*, is taken in labour, with strong regular pains. The presentation is a vertex in the right occipito posterior position. At the end of sixteen hours the membranes rupture, and a considerable quantity of liquor Amnii escapes. On vaginal examination the head is felt to be high up, and not to have engaged in the brim. The pains increase in severity, and cause the patient great distress. After a severe pain the patient complains of feeling faint, and it is noticed that there is considerable hæmorrhage from the vagina. On abdominal examination the uterus is found to be firmly contracted, but smaller in size than before; vaginally the presenting part is not felt. The labour pains now ceased, and anæmia of the patient became more pronounced. The pulse rate increased to 120, and the temperature sank to 97°. Give your diagnosis of this case, and comment as to—

- (a) Its possible causes.
- (b) The signs of impending danger.
- (c) The measures which should have been taken to prevent the condition.

OBSTETRICS.

The Board of Examiners.

1. Discuss Shoulder Presentations with regard to—
 - (a) Causation.
 - (b) Diagnosis.
 - (c) Terminations.
 - (d) Management.
 2. Give the signs, symptoms, and treatment of Puerperal Eclampsia.
 3. Discuss the causes of *post-partem* Hæmorrhage, and give the treatment.
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FORENSIC MEDICINE.

The Board of Examiners.

1. How would you conduct a physical and chemical examination of an alleged blood stain? Give the most recent views as to the possibility of differentiating human from other mammalian blood.
2. Describe various injuries that may be suicidal or homicidal, and state how you might be enabled to form a correct opinion as to their causation.
3. A man is admitted to a hospital in an unconscious state; discuss the various causes for such a condition.

4. Consider the following questions in their medico-legal relations :—
- (a) The viability of the foetus at an early period.
 - (b) The duration of utero-gestation.
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GENERAL AND SPECIAL PATHOLOGY,
INCLUDING BACTERIOLOGY.

The Board of Examiners.

1. Describe the differential diagnosis, macroscopic and microscopic, of gumma from glioma in the substance of the brain.
2. Discuss the relation of œdema to starvation of tissue.
3. Describe, without formulæ, the methods of determining bacteriologically the presence of sewage contamination in water, with special reference to recent methods and their value.
4. Describe minutely the microscopic changes in the aortic valves in chronic endocarditis with progressive thickening and recent vegetations.
5. Describe the forms of bronchiectasis and discuss their causation.
6. State what you know concerning the Spirochæta (*Spirochæta*) Pallida in man, giving methods for its demonstration, and describing its differential diagnosis from other organisms resembling it.

GYNÆCOLOGY.

The Board of Examiners.

CASE FOR COMMENTARY.

Mrs. W., aged 33, the mother of three children, the last being born twelve months ago, is admitted to hospital with the following history:—

A week prior to admission she complained of a profuse vaginal discharge of a yellowish colour, with considerable scalding on passing urine. The menstrual function has been always normal. On admission, in addition to the foregoing symptoms, she has severe pain in the hypogastrium, with some rigidity of the abdominal wall, and tenderness on pressure. The temperature is 102, with a morning remission to 100·3, and the pulse is about 110. Vaginal examination shows the vagina to be hot and the roof tender; the uterus is fixed, but no defined swelling is found in either fornix. Discuss this case in regard to—

- (a) The pathological conditions.
- (b) Differential diagnosis.
- (c) Treatment.

GYNÆCOLOGY.

The Board of Examiners.

1. Discuss the pathology of Tubal Gestation up to the end of the third month.
2. Give the ætiology and mechanism of Prolapse of the Uterus, and describe the treatment.
3. Discuss the ætiology of Amenorrhœa.

SURGERY.

The Board of Examiners.

CASE FOR COMMENTARY.

A girl, aet. 13½, was admitted to hospital on 8th May, 1905, on account of fever of a week's duration and acute pain in the internal and upper part of the thigh. She was a hard worker, and always healthy before this illness, which began suddenly on 29th April, with severe pains in the upper and internal parts of the thigh. Rest and fomentations eased the pain somewhat, but the fever gradually increased, and movements became so painful that she could not walk. On admission she was pale and wasted, with a temperature of 102° F. The right leg was slightly adducted and rotated inwards. At the upper and internal part of the thigh there was a considerable swelling, which extended to the labium majus and Mons Veneris and obliterated the genito-crural fold. The skin here was red, hot, and œdematous. There was tenderness along the rami of the pubes and ischium, and this was greatest in the position of the band of cartilage which separates the pubes from the ischium in the growing bone. No fluctuation could be made out. Rectal examination showed that the internal surface of the rami was very tender on the affected side. Passive movements of the thigh were very painful. It was found that some days before

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this illness the patient had had a pain with tenderness over the external malleolus.

Comment on the diagnosis of this case, and give your treatment in detail with prognosis.

SURGERY.—HONOURS.

The Board of Examiners.

1. Describe the surgical treatment of trigeminal neuralgia.
 2. Discuss the mode of causation, treatment, and results of wound of the thoracic duct.
 3. Describe the treatment of general septic peritonitis.
 4. Discuss the differential diagnosis of testicular swellings.
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FINAL HONOUR EXAMINATION IN
ENGINEERING.

HYDRAULIC ENGINEERING.—PART A.

FIRST PAPER.

The Board of Examiners.

1. A water-main, in which a pressure head of 60 feet is maintained, is tapped for the withdrawal of water to supply a jet-pump. The arrangement of pipes is as follows, viz. :—

A 2-inch diameter wrought-iron pipe is laid horizontally for a distance of 30 feet from the main; it then passes vertically downwards into an excavation. At a depth of 25 feet below the said horizontal portion the pipe is bent again to a horizontal position, and continues horizontal for a distance of 12 feet from the vertical portion. Here the jet-pump is introduced, which consists of a chamber containing a smooth, well-shaped nozzle, whose tip is $\frac{1}{2}$ -inch diameter. This nozzle is placed horizontally, exactly on line with the pipe. The bottom of the chamber has a 2-inch diameter suction pipe leading vertically downwards to a well, the water-surface in which remains at a depth of 3 feet below the centre of the jet-pump. The suction pipe is 4 feet long. Opposite the nozzle-tip, the chamber contracts to

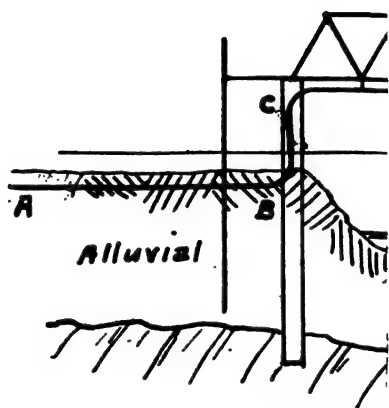
a diameter of $\frac{3}{4}$ inch. This throat is very smooth, and has easy approach curves. Beyond it, the pipe, still smooth, enlarges uniformly until, at a distance of 9 feet from the throat, the diameter is $2\frac{1}{4}$ inches. The pipe then turns vertically upwards, the height of this portion being 30 feet, the diameter continuing to be $2\frac{1}{4}$ inches; thence it proceeds horizontally for 6 feet, where it discharges into an open drain. All the bends are of large radius, so that the head lost in them is not appreciable. (For sketch see next page.)

Explain what occurs when water is allowed to flow through this system of pipes from the main. Enumerate the sources of loss of energy. Suggest alterations which would increase the efficiency. Assuming that one-third of the kinetic energy of the jet is lost in the jet-pump in fluid friction, owing to abrupt changes of velocity, this loss being in addition to the frictional losses in pipes and passages, estimate the amount of water which will be drawn from the main, and the amount lifted from the well.

2. Design a steel riveted pipe, 36" diam. to convey water across the river shown in cross-section. The pipe may be exposed to the pressure arising from a static head of 250 feet. Show all supports, joints, and connections to the bridge and ground; avoid, as far as possible, placing obstructions in the waterway.

The pipe is to follow the line *ABCDEF*.

The cross girders of the bridge are adapted to the proposed load; they are rolled joists, 14" x 7", placed one at each panel point.



HYDRAULIC ENGINEERING.—PART A.

SECOND PAPER.

The Board of Examiners.

Indicate how you would proceed to ascertain whether or not a given masonry dam, of trapezoidal cross-section, would be called upon to endure horizontal tension.

A tank on the roof of a building has a depth of 4 feet of water maintained in it. An ordinary wrought-iron pipe, which is 3 inches in diameter, except near the top, where it is widened, leads vertically downwards from the bottom of the tank. It is desired that, in case of emergency, this 3-inch pipe shall discharge full-bore at its lower end, which is 60 feet below water-level in the tank; that is, there is to be no resistance but friction offered to the flow. The valves, when open, cause no obstruction.

What are the necessary conditions that the desired maximum discharge shall take place?

Design the upper portion of the pipe accordingly.

How much will the discharge be?

In what way, if at all, might the flow be impeded if a partial vacuum were allowed to be formed in any portion of the pipe?

HYDRAULIC ENGINEERING PART

(ALSO FOR J. B. S. (1911))

The Book

1. Describe the various methods of irrigation.
2. Design house-connections for an ordinary 10-roomed house.
3. On the accompanying plan of a site for a service reservoir, design a system of reticulation for the area marked "Europe" with a population of 500 acres. The area is to be divided into districts with its water supply to be distributed.

Including the demand for water per head per day.

FINAL HONOUR EXAMINATION, MARCH, 1907. 54

THERMO-DYNAMICS AND ELECTRO-MAGNETISM.

GROUP C.

The Board of Examiners.

Explain why the results of Fairbairn and Tate's investigation of the density of saturated steam are no longer utilized. Give the calculation of the value of this quantity in terms of others which can be measured more accurately. Find the difference of the specific volume of ice and water at 0°C . as $\cdot 0916\text{ c. cm.}$, the latent heat of fusion as $79\cdot 9\text{ cal.}$, and the vapour pressure as $\cdot 460\text{ cm}$ of mercury, calculate the coefficient of ice at that temperature.

Derive the isothermal bulk modulus of a gas as a function of pressure. State the general relation between the bulk modulus and the pressure, which the above is a special case of.

Derive the equation of state of a gas, assuming the ratio of the specific heats to be constant, and show that the method of determining the ratio of the specific heats from the method of Rüchardt is not applicable to the method of Rüchardt.

Derive the equation of state of a gas, assuming the ratio of the specific heats to be constant, and show that the method of determining the ratio of the specific heats from the method of Rüchardt is not applicable to the method of Rüchardt.

HYDRAULIC ENGINEERING.—PART B.

(ALSO FOR DEGREE OF M.C.E.)

The Board of Examiners.

1. Describe the various methods of preparing land for irrigation.
2. Design house-connections for the sewerage of an ordinary 10-roomed two-storied dwelling.
3. On the accompanying topographic map choose a site for a service reservoir, and outline a scheme of reticulation for the water-supply of the town marked "Eureka," which is expected to have a population of 40 persons per acre over an area of 500 acres. Provide liberally for fire extinction. The service reservoir cannot be placed with its water-level above the 6,580-ft. contour.

Including water required by mines, the average demand may be reckoned at rate of 20 cub. ft. per head per day.

THERMO-DYNAMICS AND ELECTRO-
MAGNETISM.

GROUP C.

The Board of Examiners.

1. Explain why the results of Fairbairn and Tate's investigation of the density of saturated steam are no longer utilized. Give the calculation of the value of this quantity in terms of others which can be measured more accurately.

Assuming the difference of the specific volumes of ice and water at 0° C. as $\cdot 0916$ c. cm., the latest heat of fusion as $79\cdot 9$ cal., and the vapour pressure as $\cdot 460$ cm of mercury, calculate the pressure coefficient of ice at that temperature.

2. Prove that for a perfect gas the isothermal bulk modulus is equal to the pressure.

State and prove the general relation between these two quantities of which the above is a special case.

3. Describe and give the theory of Clement and Desormes' method of determining the ratio of the principal specific heats of air.

State the principal objections to the method, and show how Röntgen overcame them.

4. The working substance in a gas-engine is of such a character that the initial adiabatic compression takes place at nearly constant temperature, the

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remainder of the cycle resembling that of the Otto engine. Assuming that, in a perfect engine of this type, the lower adiabatic really coincides with an isothermal, find the maximum efficiency of the arrangement.

5. Obtain an expression for the capacity per unit length of a long cylindrical condenser.
 6. Describe, with full theoretical and practical detail, one good method of measuring the inductance of a coil.
 7. Describe a method of determining the efficiency of a continuous current dynamo which will allow the separation of the various losses, and explain fully how these losses are obtained in the course of the method.
 8. Give the theory of the single-phase alternate current synchronous motor.
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CIVIL ENGINEERING.

FIRST PAPER.

The Board of Examiners.

1. Discuss the subject of street improvement in populous cities, with special reference to prevention of dust and mud.
 2. Write a short essay on electric tramways, and contrast the advantages and disadvantages of overhead as against conduit constructions. Illustrate with neat sketches.
 3. Give a short description, illustrated by sketches, of the road bed and permanent way that you would adopt for a railway in tropical country, with low rainfall, and infested with insects destructive of timber. Traffic, moderate; gauge, 4 feet 8½ inches. Consider the alternative cases of gravel ballast being available, and ballast not available.
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CIVIL ENGINEERING.

SECOND PAPER.

The Board of Examiners.

1. Draw a cross-section, dimensioned, of a passenger station for three double lines of way, as at Richmond, the railway being on a 20-chain curve. Through trains may pass at 20 miles per hour.
 2. Design, in outline, a permanent road bridge over a river; total water way, 50 feet wide; road level, 20 feet above river bed; banks, 5 feet above river bed. A horizontal stratum of rock is met with 2 feet below river bed. Bridge to carry traffic equal to a 15-ton road roller. Flood level is 10 feet above bed. Banks are liable to scour. Design either in stone, concrete, reinforced concrete, or steel, or any combination of same.
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MECHANICAL ENGINEERING.

FIRST PAPER.

Professor Kernot.

1. Discuss modern methods of machining details of various pieces of mechanism, with a view of increasing speed of production and accuracy of dimensions.
 2. Describe and criticise the recent proposal to obtain water-power from the Yarra at Dight's Falls, and distribute it electrically through Melbourne. Should it be carried out, what works and machinery would you recommend? Give a diagram of your scheme.
 3. Describe recent advances in steam production, giving special attention to devices for economizing fuel and minimizing smoke.
 4. Give all the information you can as to a modern high-speed engine of about 400 brake horsepower.
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MECHANICAL ENGINEERING.

SECOND PAPER.

Professor Kernot.

1. Give full and critical descriptions of recent developments in steam locomotive practice on the 5ft. 3in. gauge in Victoria.
 2. Give outline sketch, with dimensions and other particulars, of a tank locomotive suitable for a 2ft. 6in. gauge, with numerous curves of 2 chains radius and long continuous grades of 1 in 30.
 3. Write an essay on Suction and Producer Gas Plants for Power Purposes. How do they compare in economy with steam power?
 4. Give all the information you can as to a passenger electric tramway system, such as those at Brighton and Essendon.
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APPLIED MECHANICS.

FIRST PAPER.

Professor Kernot.

1. Define Modulus of Shear Elasticity, and explain how it affects the deflection of beams of various sections.

2. What is Anticlastic Curvature ?
How do you compute its amount ?

3. A beam is 20 feet long, and is supported at one end, the centre, and a point 3 feet from the other end.

Starting from the supported end it is loaded with 1 ton per foot for 16 feet, from which point the load diminishes uniformly to zero at the end.

Plot to a suitable scale the moment and shear diagrams.

4. A mild steel rolled girder is 10 inches deep, 5 inches wide, and $\frac{1}{2}$ -inch thick throughout. Determine its modulus of section and its central breaking load on a span of 20 feet.

5. Determine the probable deflection of the above beam under half its breaking load.

APPLIED MECHANICS.—SECOND PAPER.



1. The above diagram represents one girder of an existing bridge, the load being carried at the panel points of the lower member.

The top and bottom of the girder consist each of two $3'' \times 3'' \times \frac{3}{8}''$ angle irons fortified at the central portions by two $8'' \times \frac{1}{2}''$ plates. The diagonals shown in full lines are $3'' \times 3'' \times \frac{3}{8}''$ angle irons, those shown by single lines, $3'' \times \frac{3}{8}''$ bar. (a) Calculate the load it will carry equally distributed along the bottom members in the arrangement of riveted joints for the diagonals. (c) Suggest improvements in the arrangement of parts. (d) Work out a system of lateral bracing.

2. A suspension bridge of 200 feet span and 20 feet dip is stiffened by a girder system hinged at the centre. Assuming a concentrated moving load of 10 tons, determine the tension on the cable and the bending moments and shears on the girders for at least five equidistant positions of the load.
3. Write a short essay on the resistance to torsion of circular and non-circular shafts.

MIXED MATHEMATICS (ENGINEERING).

FIRST PAPER.

The Board of Examiners.

1. Liquid is flowing through a tube which is moving in a general, given, manner. Find a formula for the pressure at any point of the liquid in the tube.
2. Discuss the theory of the form of the expansion nozzle of a Laval turbine, assuming a hyperbolic law ($p\sigma^t = \text{const.}$) of expansion.
3. Discuss the determination of the irrotational motion of an inviscid liquid, demonstrating the conditions satisfied by the velocity-potential.

A helicoidal tube is generated by a given plane curve moved with a uniform screw motion along and around the axis of z perpendicular to its plane. Supposing the irrotational motion of liquid in this tube to be the same at corresponding points along it, investigate the equations for the velocity-potential as a function of position in the plane curve (that is, eliminate the coordinate z from the equations to be solved).

4. Discuss (a) the velocity of a "long wave" along a channel, (b) the existence of a "standing wave" in a channel.

5. Investigate the equations of motion of viscous liquid $\rho du/dt = -\delta p/\delta x + \mu \nabla^2 u + X$, &c.

Two plane boundaries intersect on the axis of z . Taking polar coordinates (r, θ) in the plane (x, y) , shew that the equations of motion admit an exact solution for two-dimensional motion ($w = 0, X = 0, Y = 0$) between the boundaries such that the velocity is radial and inversely as the distance r from the axis. Complete the determination of this solution.

MIXED MATHEMATICS (ENGINEERING).

SECOND PAPER.

The Board of Examiners.

1. Investigate general equations of motion for a rigid body turning about a fixed point.

If a circular cone fixed in the body rolls on a similar cone fixed in space, find the moment of the pressure between the cones, ignoring external forces.

2. Discuss the analysis of stress at a point, and shew how to find the condition that a given state of stress ($PQRSTU$) may not violate an assigned limit to the shearing stress.

In particular, consider the case of combined flexure and torsion of a rod.

3. Investigate the equations of equilibrium

$$(\lambda + \mu) \delta\Delta/\delta x + \mu \nabla^2 u = 0, \text{ \&c.,}$$

for an isotropic elastic solid under no volume force, and shew that

$$u = -\frac{1}{2}\kappa(z^2 + \sigma x^2 - \sigma y^2),$$

$$v = -\kappa\sigma xy,$$

$$w = \kappa xz,$$

is the solution for the uniform flexure of a beam, σ being Poisson's ratio.

4. Shew that

$$u = \frac{P}{4\pi\mu} \frac{xz}{r^3} - \frac{P}{4\pi(\lambda + \mu)} \frac{x}{r(z + r)},$$

$$v = \frac{P}{4\pi\mu} \frac{yz}{r^3} - \frac{P}{4\pi(\lambda + \mu)} \frac{y}{r(z + r)},$$

$$w = \frac{P}{4\pi\mu} \frac{z^2}{r^3} + \frac{P(\lambda + 2\mu)}{4\pi\mu(\lambda + \mu)} \frac{1}{r},$$

where r is the distance from the origin, satisfy the equations of the last question, and that this solution determines the transmission of stress from a concentrated pressure P at the origin, acting normally on the plane face $z = 0$ of an indefinitely extended solid.

5. Investigate the theorem of Three Moments for a uniform beam, and discuss the existence of similar theorems for naturally-bent rods; in particular, for a circular ring under forces in its plane.
6. Discuss Maxwell's method for the determination of the stress in a redundant frame.

EXAMINATION FOR THE DEGREE OF M.C.E.

MINING ENGINEERING.

FIRST PAPER.

The Board of Examiners.

1. State the principle of action, and enumerate the leading parts of boring plants suitable, respectively, for—(a) Clayey gravel, 50 feet deep; (b) Soft rock, 500 feet deep; and (c) Hard rock, 1,000 feet deep.
 2. A lenticular mass of ore, outcropping in flat country, is 1,000 feet long, maximum width 50 feet, underlay 80° , and pitch vertical. The lode is firm with weak walls, and timber is scarce. Illustrate and compare the methods of working you would consider applicable.
 3. Discuss the details of an electrical installation for the supply of power to a mine, 20 miles distant from the source of energy, which is a river with a plentiful supply, and having a fall of 200 feet in a short distance. The brake horse-power required by the mine plant is 500.
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MINING ENGINEERING.

SECOND PAPER

The Board of Examiners.

1. A stanniferous ore, mined from a lode consisting of hard granite impregnated with tin oxide, is to be delivered to a mill erected on a hillside, at the rate of 5,000 tons per month. Give the general design of plant, and sketch a cross-section showing the principal appliances, specifying their number and capacity. Show graphically the scheme of concentration or flow sheet, and the nature approximately of the products you would expect from each operation. Estimate the amount of water, and also the horse-power required.
2. Discuss the conditions affecting the problem of ventilation in a lode mine 5,000 feet deep, alluvial mine 500 feet deep, and an extensive coal mine, respectively. Design a suitable scheme for each case, assuming practicable conditions, and illustrate by sketches.
3. In connection with a mine drainage scheme, a quantity of water amounting to 10,000,000 gallons per 24 hours is to be raised in a shaft from a depth of 500 feet. Give an account of the methods that may be adopted, and discuss the merits of each, specifying details, and principal dimensions of the mechanical appliances involved.

ROAD AND BRIDGE CONSTRUCTION AND MAINTENANCE—FIRST PAPER.

Professor Kernot.

Plot the following section ; lay out grades, drainage arrangements, and other particulars for constructing a main road ; supply cross-sections at the deepest point of each cutting and the highest point of any one embankment. Fix waterways, and show in outline the culvert and bridge :—

Chains.	Levels.	Remarks.
0 ...	100 ..	Joins existing road
2 ...	120 ...	Bluestone suitable for road making
4 ...	110	
6 ...	100	
8 ...	90 ...	Drains 1 square mile undulating grass land. Rainfall as in Melbourne
10 ...	100	
12 ...	110	
14 ...	125 ...	Schist, stratification nearly vertical strike at right angles to road
16 ...	120	
18 ...	100	
20 ...	80	
22 ...	70	
24 ...	60	
26 ...	40 ...	River draining 2,000 square miles of mountainous country, such as that east of Melbourne. Flood-level 70, summer-level 45
28 ...	40	
30 ...	67	
32 ...	70	
34 ...	80 ..	Joins existing road

ROAD AND BRIDGE CONSTRUCTION AND MAINTENANCE.

SECOND PAPER.

Professor Kernot.

Design a steel bridge for subjoined section—width 24 feet, loads as in vicinity of Melbourne, abutments of brick :—

Feet.	Levels.	Remarks.
0 ..	100 ...	Existing road
100 ...	80 ...	Face of abutment. Foundation alluvium. 40 feet deep
150 ...	50	
200 ...	40 ...	River flood-level 70. Maximum velocity 6 feet per second
250 ...	60	
300 ...	80 ...	Face of abutment rock foundation
350 ...	105 ...	Existing road

HYDRAULIC ENGINEERING.—PART A.

The Board of Examiners.

1. Design an inverted siphon to convey water for the supply of a city at rate of 20 cubic feet a second. The siphon will start from a channel, *A*, on one side of a valley, and discharge into a channel, *B*, on the other side. The lowest point on the line of the proposed siphon will be 120 feet below water level in *A*.

Mild steel plates, 6 feet, 7 feet, 8 feet, and 9 feet long, are readily obtainable, of any desired width and thickness.

Decide on the diameter of the pipe.

State at what level, relatively to *A*, you would fix the channel at *B*, the length of the pipe being, approximately, 1,700 feet.

Specify the thickness, riveting, jointing, and coating of the pipes.

Show the junctions of pipe with channels at both ends. Stone (suitable for concrete), bricks, and good hardwood are all at hand.

Sketch and describe all valves and screens necessary in connection with this work, both in the channels and in the pipe.

Would you carry these pipes above or below the ground? If the former, how would you support them? The material in the hill-sides is soft schistose rock.

At the bottom of the valley the surface is nearly flat for a width of about 250 feet, measured along the line chosen for the proposed siphon. The material here is chiefly clay, sand, and

gravel, the maximum depth to bed-rock being 18 feet. A creek, which is occasionally flooded, follows the valley. Its channel varies slightly, from time to time, in width and depth, but the average depth of the bed below the surface is 12 feet. To provide for floods, a clear waterway, 70 feet wide, is needed. How would you arrange for the carrying of the proposed pipe across this portion of the valley?

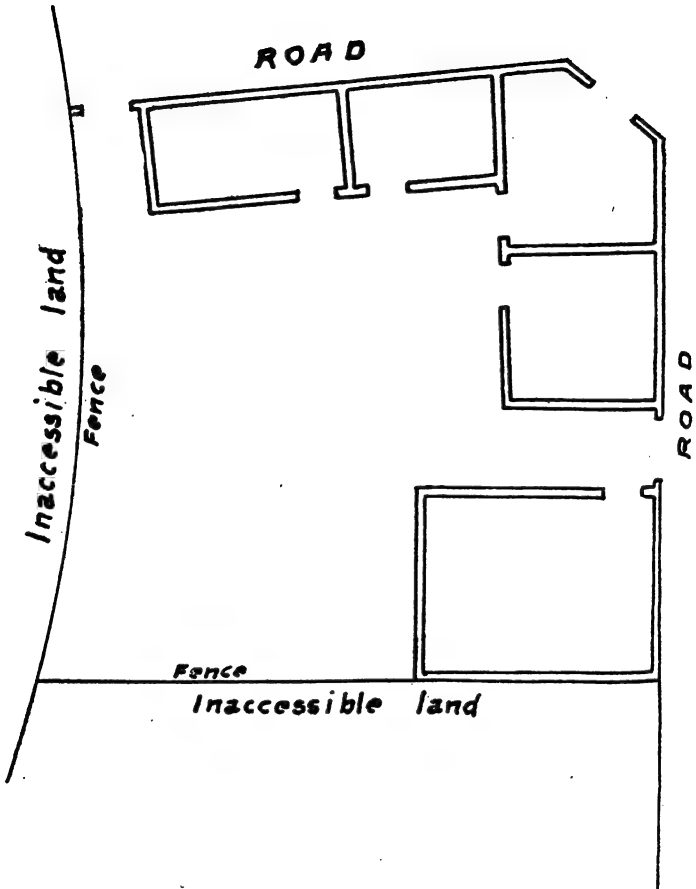
2. Design a steel riveted pipe, 36 inches diameter, to convey water across the river shown in cross-section. The pipe may be exposed to the pressure arising from a static head of 250 feet. Show all supports, joints, and connections to the bridge and ground. Avoid, as far as possible, placing obstructions in the waterway. The pipe is to follow the line *ABCDEF*. The cross girders of the bridge are adapted to the proposed load; they are rolled joists 14" x 7", placed one at each panel point. (For sketch see pages 537—8.)

SURVEYING AND LEVELLING.

FIRST PAPER.

The Board of Examiners.

1. Explain how you would proceed when making an accurate survey of the piece of land, with buildings, shown in sketch (see page 558). Double lines indicate brick walls.



2. Describe the process of ranging parallels of latitude and arcs of meridians on the plains of Victoria, the lines being 10 minutes of arc apart.
3. Adjust the survey shown in sketch (see page 560), by balancing the latitudes and departures, on the supposition that the probability of error in measuring the long sides is three times that in measuring the short ones.
4. Compute the area of the figure referred to in the last question.

SURVEYING AND LEVELLING.

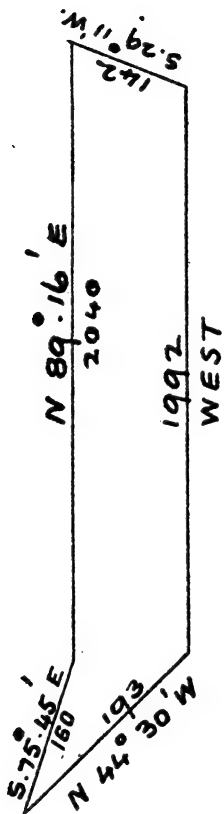
SECOND PAPER.

The Board of Examiners.

1. Describe the steps you would take if called upon to select a route for a road to connect two places on opposite sides of a range of rugged and heavily-timbered hills.
2. It is required to ascertain the latitude and the direction of the meridian at a place a little to the west of Bairnsdale, in Victoria. The evening chosen for the observations is that of the 19th February, this year. The nautical almanac furnishes the following information, viz. :—

“Sidereal time at mean noon at Greenwich, on 19th February, 1907 = 21h. 53m. 8s.

Star.	Right Ascension.	Declination.
α Columbae	5h. 36m. 18s.	34° 7' 41"
α Argus (Canopus)	6h. 21m. 54s.	52° 39' 0"
α Eridani (Achernar)	1h. 34m. 13s.	57° 42' 54".”



The approximate latitude of the place being $37^{\circ} 48' S.$, and its longitude $147^{\circ} 38' E.$, determine the standard times of culmination of the two first-named stars, and their altitudes at culmination. In the case of the third star, determine the standard time of its western elongation, its altitude at that instant, and the horizontal angle between it and the magnetic meridian, the deviation of the compass being $8^{\circ} 21' E.$

SUPPLEMENTARY MEDICAL
EXAMINATION.

THEORY AND PRACTICE OF MEDICINE.—

The Board of Examiners.

1. Describe the symptoms and diagnosis of epidemic cerebro-spinal meningitis, and its treatment.
 2. Describe the best modes of carrying out the examination of the urine for sugar.
 3. Give an account of the symptoms and signs of aortic stenosis, pointing out other circulatory disturbances with which it may be confused.
 4. What is the condition known as Ankylostomiasis? Describe its symptoms and treatment, and the ways in which the parasite spreads.
 5. Describe fully the signs and symptoms of pleurisy, with effusion in different degrees.
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FORENSIC MEDICINE.

The Board of Examiners.

1. Describe the signs of death, and state which of them are the most reliable.
 2. Describe fully the hydrostatic test, and discuss the objections that have been urged against it.
 3. What are the appearances you would expect to find in an adult virgin who had been recently violated?
 4. Describe the symptoms, treatment, and *post-mortem* appearances in a case of opium poisoning; how would you diagnose it from other states of unconsciousness?
 5. What information might you obtain from the examination of a skeleton?
-

SPECIAL PATHOLOGY.

The Board of Examiners.

1. Describe the macroscopic and microscopic changes in—
 - (a) Acute Bronchopneumonia.
 - (b) Pachymeningitis Hæmorrhagica.
 - (c) Atrophic Granular Kidney.
 2. Describe the bacteriological methods of diagnosis in a doubtful case of diphtheria, including the differential diagnosis from the diseases most closely resembling it.
 3. State what you know concerning Leucocytosis (*not* including Eosinophilia nor Leukæmia).
 4. Describe the macroscopic changes in osteoarthritis deformans.
 5. Describe the microscopic characters of carcinoma in the intestine, and the macroscopic appearances of its several forms.
 6. Describe the differential diagnosis of tertiary syphilis from tubercle in the larynx, having regard to macroscopic and microscopic characters.
-

OBSTETRICS AND GYNÆCOLOGY.

The Board of Examiners.

1. Describe the formation and function of the lower uterine segment in relation to parturition.
 2. Give the mechanism of a persistent occipito posterior position.
 3. Give the management of a case of eclampsia—
 - (a) Before labour.
 - (b) During labour.
 4. Describe the signs and symptoms of an ovarian tumour, and give the differential diagnosis.
 5. Describe the varieties of perineal lacerations and their consequences.
-

SURGERY.*The Board of Examiners.*

1. Describe the symptoms and treatment of Tetanus.
2. Discuss the diagnosis and prognosis of scirrhus carcinoma of the breast. Describe in detail its operative treatment.
3. Describe the symptoms and treatment of Pott's fracture.
4. Discuss the diagnosis of the surgical conditions which may cause hæmaturia as a symptom.

MATERIA MEDICA AND PHARMACOY.

The Board of Examiners.

1. Name the official salts of Iron, and give their doses.
 2. Write a list of the ointments of Mercury, and give their strengths.
 3. Define the terms—Sclerotium, Strobile, Corm, Rhizome.
 4. Give the composition, strengths, and doses of the official hypodermic injections.
 5. Write all you know of the official products of the N.O. Convolvulaceæ.
 6. Write what you can of Chloroform and its preparations.
 7. What is Pyroxylin? Name the preparations into which it enters, and state their uses.
 8. In what form and dose would you administer Carbolic Acid, Atropine, Santonin, Nitrate of Silver, Phosphorus.
 9. Name two glucosides, refer them to their sources, and state their doses.
 10. Write a prescription having general tonic properties. Express the quantities of ingredients in terms of the metric system.
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THERAPEUTICS, DIETETICS, AND HYGIENE.

The Board of Examiners.

	Relative Marks.
1. Discuss in detail, with illustrative prescriptions, the treatment (other than dietetic) of a case of Acute Pneumonia in a young alcoholic patient	100
2. Describe in full, from outset to end of convalescence, the dietetic treatment of a severe case of Typhoid Fever with several severe hæmorrhages	100
3. Discuss the question of a pure milk supply for the City of Melbourne	100

MEDICAL COURSE.—SECOND DIVISION.

PHYSIOLOGY AND HISTOLOGY.

The Board of Examiners.

1. What is the function of the Cochlea? On what experimental evidence is your answer based?
2. What reflex mechanisms are involved—
 - (a) in secretion of saliva;
 - (b) in secretion of gastric juice?
3. To what causes may death be attributed in—
 - (a) poisoning by prussic acid;
 - (b) drowning;
 - (c) poisoning by coal gas;
 - (d) chloroform inhalation?

4. Contrast the innervation of the heart with the innervation of the arteries.
 5. Describe, with the aid of diagrams, the structure of the suprarenal gland, and give a short account of the action of its active principle.
 6. What is meant by the term "nitrogen-equilibrium"? Discuss the methods by which nitrogen leaves the body.
-

MEDICAL COURSE.—SECOND DIVISION.

ANATOMY.

Time: 9.30 a.m. to 12.30 p.m.

The Oral List will be posted at the Registrar's Office and at the Anatomy Department.

Examiners ... { *The Professor of Anatomy.*
Dr. G. C. Rennie.

1. Describe the male urethra. State how it differs, anatomically and physiologically, from the female urethra.

2. Give the place and mode of origin, place and mode of termination, and the relations of the third part of the subclavian artery. Describe, step by step, the various structures which would be met with in ligation of this part of the vessel. How would the collateral circulation be carried on after such an operation?
3. At what joints do the movements of supination and pronation occur? Give the class and sub-class of these joints, the various muscles which produce the movements, and the innervation of each muscle concerned.
4. In what part of the brain is the Rolandic motor area situated? State how you would map this area out on the living subject, and trace the path of the Rolandic motor fibres downwards.

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THE UNIVERSITY OF MELBOURNE.

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JUNIOR PUBLIC AND JUNIOR COMMERCIAL

AND

SENIOR PUBLIC EXAMINATION PAPERS.

DECEMBER, 1906.

Melbourne

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BY J. KEMP, ACTING GOVERNMENT PRINTER.

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JUNIOR PUBLIC AND JUNIOR COMMERCIAL
EXAMINATIONS.

DECEMBER, 1906.

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GREEK.

*The Board of Examiners.*

[Candidates must satisfy the Examiners in **EACH** part  
of the paper.]

A.

1. Translate—

(a) Ταῦτα ὁ βασιλεὺς ἐποίει, καὶ ἔπεμπέ τινας ἀγγελ-  
οῦντας τοῖς Πέρσαις τὰ παρόντα αὐτοῖς κακὰ· οὐδὲν  
δὲ ζῶον τούτων τῶν ἀγγέλων τάχιον τρέχει·  
ὄσων γὰρ ἡμερῶν ἐστὶν ἡ πᾶσα ὁδός, τοσοῦτοι ἵπποι  
τε καὶ ἄνδρες ἐστᾶσι τεταγμένοι· καὶ τούτους οὐ  
νιφετός, οὐκ ὄμβρος, οὐ νύξ κωλύει, ὥστε μὴ  
τελέσαι τὸν δρόμον τὸν ἐπιτεταγμένον· ὁ μὲν γὰρ  
πρῶτος δραμῶν παραδίδωσι τὴν ἀγγελίαν τῷ δευτέρῳ,  
ὁ δὲ δεῦτερος τῷ τρίτῳ, καὶ οὕτως ἐς τὸ τέλος  
ἀφικνεῖται.

2. Translate into Greek—

(a) The best and wisest philosophers say, "Do  
not injure your morals (τὸ ἦθος *in plur.*) by  
bets (περίδοσις)".

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- (b) If boys write their own language (= *langue*) as they pronounce (*προφέρω*) it, will they all write and pronounce it in the same way?
- (c) The captain was lunching (*ἀριστάω*) with six men under a large oak.
- (d) You will find some of these words (= *names*) in the book of Xenophon which you have read (*ἀναγιγνώσκω*).
3. Write down the accus. sing., gen. sing., and dat. plur. of—*κύων*, *ὄρνις*, *γέρον*, *πνιγεύς*, *ἦπαρ*, *θριξ θυγάτηρ*; and decline in all genders *τιθείς*, *γλυκύς*, *μείζων*.
4. Compare—*ὀλίγος*, *μέλας*, *αἰσχροός*, *ἀσθενής*, *κακῶς*.
5. State the principal parts of—*ἴημι*, *πίνω*, *φθείρω* *τέμνω*, *ἀλίσκομαι*; and write out the past tense of *οἶδα*, the pres. opt. active of *δίδωμι*, and the aor. pass. subjunct. of *τιμάω*.

B.

1. Translate—

- (a) Φαλῖνος μὲν δὴ ὄχετο καὶ οἱ σὺν αὐτῷ. οἱ δὲ παρὰ Ἀριαίου ἦκον, Προκλῆς καὶ Χειρίσοφος· Μένων δὲ αὐτοῦ ἔμενε παρὰ Ἀριαίῳ. οὗτοι δὲ ἔλεγον ὅτι πολλοὺς φαίη ὁ Ἀριαῖος εἶναι Πέρσας ἑαυτοῦ βελτίους, οὓς οὐκ ἂν ἀνασχέσθαι αὐτοῦ βασιλεύοντος· ἀλλ' εἰ βούλεσθε συναπιέναι, ἦκειν ἤδη κελεύει τῆς νυκτός· εἰ δὲ μή, αὔριον πρὸς ἀπιέναι φησίν. ὁ δὲ Κλέαρχος εἶπεν· “Ἄλλ' οὕτω χρὴ ποιεῖν· ἔαν μὲν ἦκωμεν, ὥσπερ λέγετε· εἰ δὲ μή, πράττετε ὅποιον ἂν τι ὑμῖν οἴησθε μάλιστα συμφέρειν.” ἧ τι δὲ ποιήσοι οὐδὲ τούτοις εἶπε.

≡ (b) Πρόξενος δὲ ὁ Βοιωτίος εὐθύς μὲν μεράκιον ὦν ἐπεθύμει γενέσθαι ἀνὴρ τὰ μεγάλα πράττειν ἰκανός· καὶ διὰ ταύτην τὴν ἐπιθυμίαν ἔδωκε Γοργία ἀργύριον τῷ Λεοντίνῳ. ἐπεὶ δὲ συνεγένετο ἐκείνῳ, ἰκανὸς ἤδη νομίσας εἶναι καὶ ἄρχειν καὶ φίλος ὦν τοῖς πρώτοις μὴ ἠττᾶσθαι εὐεργετῶν, ἦλθεν εἰς ταύτας τὰς σὺν Κύρῳ πράξεις· καὶ ᾤετο κτήσεσθαι ἐκ τούτων ὄνομα μέγα καὶ δύναμιν μεγάλην καὶ χρήματα πολλά· τοσοῦτων δ' ἐπιθυμῶν σφόδρα ἐνδηλοὶ αὐτῷ καὶ τοῦτο εἶχεν, ὅτι τούτων οὐδὲν ἂν θέλοι κτᾶσθαι μετὰ ἀδικίας, ἀλλὰ σὺν τῷ δικαίῳ καὶ καλῷ ᾤετο δεῖν τούτων τυγχάνειν, ἀνευ δὲ τούτων μὴ.

2. Explain—πελγασταί—περὶ πλήθουσαν ἀγοράν—οἱ ἔφοροι. Parse ἀπημείφθη.

3. Translate—

(a) ΣΤ. εἰπέ δὴ νῦν μοι τοδί·  
 γυναῖκα φαρμακίδ' εἰ πριάμενος Θετταλὴν,  
 καθέλοιμι νύκτωρ τὴν σελήνην, εἶτα δὲ  
 αὐτὴν καθείρξαιμ' ἐς λοφεῖον στρογγύλον,  
 ὥσπερ κάτοπτρον, κατα τηροίην ἔχων,—

ΣΩ. τί δῆτα τοῦτ' ἂν ὠφελήσειέν σ' ;

ΣΤ. ὅ τι ;

εἰ μηκέτ' ἀνατέλλοι σελήνη μηδαμοῦ,  
 οὐκ ἂν ἀποδοίην τοὺς τόκους.

ΣΩ. ὅτι ἢ τί δὴ ;

ΣΤ. ὅτι ἢ κατὰ μῆνα τὰργύριον δανείζεται.

(b) ΑΜ. μὴ σκῶπτέ μ', ὧ' τᾶν, ἀλλὰ μοι τὰ χρήματα  
 τὸν υἱὸν ἀποδοῦναι κέλευσον ἄλαβεν,  
 ἄλλως τε μέντοι καὶ κακῶς πεπραγότι.

ΣΤ. τὰ ποῖα ταῦτα χρήμαθ' ;

ΑΜ. ἀδανείσατο.

ΣΤ. κακῶς ἄρ' ὄντως εἶχες, ὡς γ' ἐμοὶ δοκεῖς.



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AM. ἵππους ἐλαύνων ἐξέπεσον νῆ τοὺς θεούς.

ΣΤ. τί δῆτα ληρεῖς. ὡσπερ ἀπ' ὄνου καταπεσών;

AM. ληρῶ, τὰ χρήματ' ἀπολαβεῖν εἰ βούλομαι;

4. Explain—*ἐνητε καὶ νέα—σαμφορας—πριτανεῖα θήσω—δημόται—Sophists.* Parse—*πριάμενος, ὁμεῖ, ἐξελῶ.*
5. What character does Xenophon give of Clearchus?
6. Describe the ancient method of crossing a river which had no bridge.
7. What do you know of Thales, Pericles, Socrates?

---

LATIN.

*The Board of Examiners.*

*Candidates must do satisfactory work in each Part of the Paper.*

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

A.

1. Translate into Latin—

The next year Pyrrhus came to Italy with a large army. The Roman army, which opposed him, was defeated at Heraclea. But, although Pyrrhus won the battle, he lost an immense number of troops. It is said that he exclaimed

in the presence of his generals, "If I win many such victories, I shall be ruined." So, having sent ambassadors to Rome, he tried to persuade the senate to make peace. Cineas, one of the ambassadors, was addressing the senate, when a certain old Roman noble was carried into the senate house (*curia*) by his slaves. This man, already at the point of death, advised the senators never to make peace while an enemy remained in Italy.

2. Translate—

Post eum C. Hostilius Mancinus consul iterum cum Numantinis pacem fecit infamem, quam populus et senatus iussit infringi atque ipsum Mancinum hostibus tradi, ut in illo, quem auctorem foederis putabant, iniuriam soluti foederis punirent. Post tantam igitur ignominiam, qua a Numantinis bis Romani exercitus superati erant, P. Scipio Africanus secundo consul factus et ad Numantiam missus est. Is primum militem vitiosum et ignavum exercendo magis quam puniendo sine ulla acerbitate correxit, tum multas Hispaniae civitates partim cepit, partim in deditionem accepit, postremo ipsam Numantiam diu obsessam fame confecit et a solo evertit, reliquam provinciam in fidem accepit.

3. Decline—*grex*, *vectigal*, *porticus*, *canis*, *bos*; also—*solus*, *felix*, *sospes*, *idem*, *aliquis*.
4. Compare *dissimilis*, *celeriter*, and give the Latin for 18, 80, 800, 50 each, 6 times.
5. Give the gender, meaning, ablative singular and genitive plural of—*dedecus*, *frons* (*frondis*), *mus*, *nix*, *cupido*.

6. Give in full—

- (a) The Imperative Passive of *fero*.
- (b) The Future Indicative of *possum*.
- (c) The Present Subjunctive of *malo*.
- (d) The Future Perfect Indicative Passive of *fero*.
- (e) The Perfect Subjunctive Active of *recipio*.
- (f) The Perfect Indicative Active of *abeo*.
- (g) The Present Indicative of *nolo*.

7. Give the principal parts of—*lugeo, insero, comburo, excudo, sarcio, ordior*.

8. Give, with the meaning, the Perfect and Future Infinitive, both Active and Passive, of *moveo*.

B.

1. Translate, parsing *fully* in the margin, all words italicised—

- (a) *Nec dubiis ea signa dedit Tritonia monstria.*  
*Vix positum castris simulacrum: arsere coruscae*  
*Luminibus flammae arrectis, salsusque per artus*  
*Sudor iit, terque ipsa solo (mirabile dictu),*  
*Emicuit, parmamque ferens hastamque tre-*  
*mentem.*  
*Extemplo temptanda fuga canit aequora*  
*Calchas;*  
*Nec posse Argolicis excindi Pergama telis,*  
*Omina ni repetant Argis, numenque reducant,*  
*Quod pelago et curvis secum avexere carinis.*  
*Et nunc, quod patrias vento petiere Mycenae,*

Arma deosque parant comites, pelagoque  
*remenso*

Improvisi aderunt.

Scan the first line, and state by whom and under what circumstances the above lines were spoken.

- (b) . Ferimur per opaca locorum ;  
Et me, quem dudum non ulla iniecta movebant  
Tela, neque adverso *glomerati* ex agmine Grai,  
Nunc omnes terrent aerae, sonus excitat omnis  
*Suspensum* et pariter comitique onerique  
timentem.

Iamque propinquabam portis, omnemque vide-  
bar

Evasisse viam, subito cum creber ad aures

Visus adesse pedum *sonitus*, genitorque per  
umbram

Prospiciens, "Nate," exclamat, "fuge, nate ;  
propinquant ;

Ardentes clipeos atque *aera* micantia cerno."

Hic mihi nescio quod trepido male numen  
amicum

Confusam eripuit mentem.

- (c) His constitutis rebus et consilio cum legatis et quaestore communicato, ne *quem* diem pugnae praetermitteret, opportunissime res accidit, quod postridie eius diei mane eadem et perfidia et simulatione *usi* Germani frequentes omnibus principibus maioribusque natu adhibitis ad eum in castra venerunt, simul, et dicebatur, *sui purgandi* causa, quod contra, atque esset dictum et ipsi petissent, proelium pridie commisissent, simul ut, si quid possent, de indutiis fallendo impetrarent.

(d) Cum paulo longius a castris processisset, suos ab hostibus premi atque aegre sustinere et *conferta* legione ex omnibus partibus tela conici animadvertit. Nam quod omni ex reliquis partibus *demesso* frumento pars una erat reliqua, suspicati hostes huc nostros esse venturos noctu in silvis *delituerant*; tum dispersos depositis

armis in *metendo* occupatos subito *adorti* paucis interfectis reliquos incertis ordinibus perturbaverant, simul equitatu atque essedis circumdederant.

2. Explain — anima litandum Argolica, ad latas hostium apertum constitui.
3. Draw a map showing the position of the Menapii, Suebi, Ubii, Sugambri, Morini, and Tencteri. State *very briefly* what you know of the Menapii and Sugambri.

---

## ALGEBRA.

*The Board of Examiners.*

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

1. Reduce to their lowest terms—

$$(i) \quad \frac{x^3 - 2x^2 + 3x - 2}{x^3 - 4x^2 + 5x - 2}$$

$$(ii) \quad \frac{(a + b)^3 + (c + d)^3}{(a + c)^3 + (b + d)^3}$$

2. Simplify

$$\frac{b+c}{b-c} + \frac{c+a}{c-a} + \frac{a+b}{a-b} \\ + \frac{(b+c)(c+a)(a+b)}{(b-c)(c-a)(a-b)}.$$

3. Solve the equations

$$\frac{x}{a+c} + \frac{y}{b+c} = 2. \\ a(x-c) + b(y-c) = a^2 + b^2.$$

4. Solve the equation

$$\frac{a}{x+a-b} + \frac{b}{x+b-a} = 1.$$

5. Solve the equations

$$x + y = a + b \\ ax^2 + by^2 = ab(a + b).$$

6. Show how to solve graphically the equations

$$x + y = a, xy = b.$$

Find the condition that the two solutions may be identical.

7. Simplify

$$\frac{\sqrt{a+b} + \sqrt{a-b}}{\sqrt{a+b} - \sqrt{a-b}} + \frac{\sqrt{a+b} - \sqrt{a-b}}{\sqrt{a+b} + \sqrt{a-b}},$$

and verify the result when  $a = 17$ ,  $b = 8$ .

8. Find a number such that the same result is obtained whether we multiply it by  $a$  and add  $b$  to the product, or multiply it by  $b$  and add  $a$  to the product.

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9. State and prove the formulæ for the  $n^{\text{th}}$  term, and for the sum of  $n$  terms of an arithmetical progression.

There are 21 stones in a row, at intervals of 3 yards. How far must a boy travel, starting from the middle, in order to bring them all, one by one, to the middle one ?

---

## GEOMETRY.

### *The Board of Examiners.*

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

1. Prove that if two angles of a triangle are equal the sides opposite to them are equal.
2. Prove that the three angles of any triangle are equal to two right angles.
3. Employ the foregoing propositions to prove that if  $O$  be the centre of two concentric circles,  $ABC$ ,  $A'B'C'$ , and if any three radii  $OA$ ,  $OB$ ,  $OC$  of the one are produced to meet the circumference of the other in  $A'$ ,  $B'$ ,  $C'$ , respectively, then the angles of the triangle  $A'B'C'$  are respectively equal to those of the triangle  $ABC$ .
4. Prove by dissection that the square on the hypotenuse of a right-angled triangle is equal to the sum of the squares on the other two sides.

5. Give the enunciation and the proof of the geometrical theorem which is expressed algebraically by the identity  $(a - b)^2 = a^2 + b^2 - 2ab$ .
6. Divide a given straight line in medial section, and prove the construction.
7. Define a tangent to a circle, and prove that the tangent at any point is at right angles to the radius drawn from that point.
8. Show how to draw a common tangent to two circles which intersect, proving the truth of the construction.
9. Prove that angles in the same segment of a circle are equal.

State and prove the converse of this.

10. If two chords of a circle intersect outside the circle, show that the rectangle contained by the segments of the one chord will be equal to that contained by the segments of the other.

Describe a circle which shall touch a given straight line and pass through two given points, both lying on the same side of the straight line. How many such circles can in general be drawn? and in what case is it possible to draw only one?

11. Upon a straight line, 2 inches long, construct a square; and then construct an equilateral triangle which shall be equal to the square in area.



ENGLISH.

*The Board of Examiners.*

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

PART I.

1. Write an essay on "Summer in Australia."
2. State clearly in what respects (if any) each of the following sentences is faulty, and show how it may be improved :—
  - (a) You may rely upon me doing all in my power.
  - (b) What other power could or ever has produced such changes ?
  - (c) Sailing along the southern shore of the little peninsula, the scene changes.
  - (d) I do not deny that in this, as in all moral principles, there may not be found exceptions.
  - (e) This, as you know, was a burning question ; and its unseasonable introduction threw a chill on the spirits of all our party.
  - (f) Lord Rosebery has not budged from his position of lonely isolation.
3. Explain *briefly* what is meant by the following terms :—
  - (a) Co-ordinative conjunction, (b) relative pronoun
  - (c) factitive verb, (d) nominative absolute.

Give an example in each case.

## 4. Analyse—

- (a) At length, as the Goddess of Truth approached still nearer to her, she fell away entirely, and vanished amidst the brightness of her presence, so that there did not remain the least trace of her figure in the place where she had been seen.
- (b) You must not dare, for shame, to talk of mercy ;  
For your own reasons turn into your bosoms,  
As dogs upon their masters, worrying you.

## PART II.

## 5. Indicate the source, and explain the meaning of the following :—

- (a) If Jonson's learned sock be on.
- (b) Lausanne! and Ferney! ye have been the abodes  
Of names which unto you bequeath'd a name.
- (c) Or mythic Uther's deeply-wounded son  
In some fair space of sloping greens,  
Lay, dozing in the vale of Avalon,  
And watch'd by weeping queens.
- (d) Plato the wise, and large-brow'd Verulam,  
The first of those who know.
- (e) . . . . . the giant crew,  
Who sought to pull high Jove from regal state.

6. "The prince . . . went away, convinced of the emptiness of rhetorical sounds, and the inefficacy of polished periods and studied sentences." Describe the incident which led Rasselas to this conclusion.

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7. "*False Humour* differs from the *True*, as a monkey does from a man." What qualities of False Humour does Addison mention in support of this statement?
8. Explain the following allusions:—(a) A story out of Joe Miller; (b) that ancient potentate, the Lord of Misrule; (c) Belshazzar's parade of the vessels of the temple; (d) a collection of Holbein's portraits; (e) the mock fairies about Falstaff.
9. (a) What is the meaning of the word *humour* as generally understood at the present time? Mention some of its earlier meanings.
- (b) What is the subject of Milton's *L'Allegro*?
10. Describe the parts played, in *Henry V.*, by the following characters:—Fluellen, Lord Scroop, Katharine.
11. Write out from memory—
- (a) From "Tower'd cities" to ". . . . all commend."
- (b) Four lines, beginning "Meantime unnumber'd . . . ."
- (c) Three lines, beginning "Now, where the quick Rhone . . . ."
-

## HISTORY.

N.B.—Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

*The Board of Examiners.*

Candidates for the JUNIOR PUBLIC EXAMINATION are to select any Two, but not more, of the FIVE following periods.

Candidates for the JUNIOR COMMERCIAL EXAMINATION are to select any Two, but not more, of the FIRST THREE of the following periods.

## A.—BRITISH TO 1509.

1. Write brief notes on the following:—Battle of Barnet; Dunstan; Henry the First's Charter of Liberties; Star Chamber; Statute of Mortmain; Watling Street.
2. Where are the following places, and why are they historically notable:—Anjou; Bannockburn; Deorham; Runnymede; Stamford Bridge; Wedmore?
3. What reasons would you give for the success of the Normans in their invasion of England?
4. Give some account of the Mendicant Friars, and of their work in England within this period.
5. Write an account of the reign of Edward the Second.
6. Give some account of the discoveries made in the fifteenth century.

B.—BRITISH (1509 TO 1714).

1. Write brief notes on the following:—Glencoe; The O'Neills; The Puritans; Shaftesbury; War of the Spanish Succession; Wentworth.
2. Give some account of the character and the policy of the Protector Somerset.
3. Explain and illustrate the growth of wealth in England in the reign of Elizabeth.
4. Write a short account of Oliver Cromwell's Protectorate.
5. Write a short account of the contests with Holland within this period.
6. (a) Give a short account of the Revolution of 1688  
(b) What was the object of William's campaigns in Ireland?

C.—BRITISH (1714 TO 1901).

1. Write brief notes on the following:—Belinbroke; Caroline of Anspach; The Cotton Famine; The Crimean War; The Gordon Riots; The Reform of the Calendar.
2. Write an account of the character and the policy of Walpole.
3. Write an account of the Seven Years' War.

4. In what year, and in what circumstances, was the Peace of Amiens brought about? Why does it mark an epoch in the Revolutionary War?
5. Trace briefly the history of New South Wales to the accession of Queen Victoria.
6. Write a short account of the public career of Mr. Gladstone.

#### D.—ROMAN.

1. Why was the Republic established?
2. Draw to the full size of your paper a rough map of the Mediterranean. Mark upon it the position of Actium, Alexandria, Capua, Carthage, Cilicia, Mylae. Give a short account of the historical events with which each of these places is associated.
3. Why is each of the following dates memorable in Roman history:—B.C. 241, 133, 63, 48, 31, A.D. 14?
4. Distinguish between the aims and the policy of Tiberius and of Gaius Gracchus.
5. Describe very briefly the career of Gnæus Pompeius Magnus.
6. State what you know of the great Roman Roads, their course, and their importance in history and in government

E.—GRECIAN.

1. Where were the following places, and why are they historically noteworthy :—Delphi, Eurymedon, Ithome, Plataea, Syracuse, Tanagra ?
  2. Why are the following dates memorable in Grecian history :—B.C. 683, 560, 490, 430, 404, 336 ?
  3. What do you know of each of the following persons :—Callicratidas, Cimon, Histiaeus, Lamachus, Myronides, Theramenes ?
  4. Explain the following terms :—Cleruchy, Naucrary, Oekist, Pentacosimedimni, Perioeci, Thesmothetae.
  5. Trace the history of the Delian Confederacy.
  6. Give some account of the domestic and of the public policy of Pericles.
-

## FRENCH.

*The Board of Examiners.*

**Candidates must satisfy the Examiners in EACH division of the paper.**

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

## A.

## TRANSLATION.

## 1. Translate into idiomatic English—

(a) Pierrette eut un maître d'écriture. Elle dut apprendre à lire, à écrire et à compter. L'éducation de la jeune fille produisit d'immenses dégâts dans la maison. Ce fut l'encre sur les tables, sur les meubles, sur les vêtements; puis les cahiers d'écriture, les plumes égarées partout, la poudre sur les étoffes, les livres déchirés pendant qu'elle apprenait ses leçons. On lui parlait déjà de la nécessité de gagner son pain, de n'être à charge à personne.

BALZAC.

(b) "Je vais vous montrer, dit le vieux, c'est là-bas, au fond . . . . derrière la grange

"Non, restez," répondit l'oncle; "il fait froid, vous êtes vieux; votre fils nous montrera cela." Mais le fils, après avoir découvert le soldat, s'était sauvé.



Le vieux marcha devant. Nous suivions à la file. Il faisait extrêmement froid dans l'allée. En passant, nous vîmes l'étable éclairée par une vitre dans le toit, cinq chèvres qui nous regardèrent de leurs yeux d'or ; puis l'écurie, les deux bœufs et la vache qui se retournèrent en silence. Plus loin nous arrivâmes à la grange, basse, encombrée de paille et de foin jusqu'au toit. Tout au fond nous vîmes une fenêtre bleuâtre, donnant sur le jardin ; deux grand tas de fagots rangés contre le mur recevaient sa lumière ; plus bas tout était sombre. Dans la fenêtre se tenaient un coq et deux ou trois poules, la tête sous l'aile, se détachant en noir sur cette lumière.

ERCKMANN-CHATRIAN.

(c) Alors d'une chose à autre, il se mit à nous parler de la langue française, disant que c'était la plus belle langue du monde, la plus claire, la plus solide : qu'il fallait la garder entre nous et ne jamais l'oublier, parceque quand un peuple tombe esclave, tant qu'il tient bien sa langue, c'est comme s'il tenait la clef de sa prison . . . . . Puis il prit un livre d'histoire et nous lut notre leçon.

A. DAUDET.

B.

GRAMMAR AND COMPOSITION.

2. Translate—

*I prefer Spring and Autumn to Summer and Winter ;*

*In the first season the country is beautiful in Victoria ;*

*The woods are full of flowers ;  
 The birds are busy making their nests ;  
 The weather is not too warm yet ;  
 People take long walks.*

3. Put into the plural the words in italics in the following expressions:—

*La cité est très peuplée ; le commerçant se rend le matin de bonne heure à son bureau ; il travaille jusqu'au soir ; alors la ville est éclairée à l'électricité ; l'ouvrier reprend le chemin de la maison ; celui-ci a sa bicyclette ; celui-là va par le tramway ; un autre enfin a un billet à prix réduit sur le chemin de fer.*

4. Give the masculine and the meaning of—

*Gouvernante, porteuse, méchante, oisive, impératrice, grasse, caduque, tierce, maligne.*

5. Place the right definite article before each of the following nouns, and give their meaning in English:—*Surface, muraille, fusil, monde, mendiant, départ, valeur, déjeuner, lit, sucre.*

6. Translate—

*I am going ; he was fearing ; known ; should I speak ? that they might wish ; twenty years ago ; the 15th of August ; Xmas ; Friday night ; a quarter past three.*

7. Conjugate—

(a) negatively (the whole tense) *boirai-je ?*  
 (b) interrogatively (the whole tense) *je vins.*

## 8. Translate—

(a) Winter in an English country means generally a gloomy sky stretching over the deserted plain. The ground is covered with snow; the boughs of the leafless trees with frost. The north wind has withered<sup>1</sup> all the flowers and grass. The whole country, formerly so pleasant and animated, seems now to be without life. People keep indoors<sup>2</sup> as much as possible; it is so cold outside.

(b) His house consisted of but one story, and was covered with thatch<sup>3</sup>, which gave it an air of great comfort. The walls in the inside were nicely whitewashed<sup>4</sup>, and his daughters undertook to adorn them with pictures done by themselves. Nothing could exceed the neatness of the little front garden.

<sup>1</sup> flétri   <sup>2</sup> chez eux   <sup>3</sup> chaume   <sup>4</sup> blanchis à la colle.

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N.B.—A second paper will follow for candidates for the Junior Commercial Examination.

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## FRENCH.—SECOND PAPER.

(JUNIOR COMMERCIAL EXAMINATION ONLY.)

*Time: One hour and a half.**The Board of Examiners.*

**Candidates must satisfy the Examiners in EACH part of the Paper.**

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

C.

1. Traduisez—

Marseille, 12 Juin/06.

Monsieur P. Lamartine,

Melbourne.

J'ai joint dans ma dernière lettre tous les renseignements que vous m'aviez demandés au sujet de l'avenir du coton en France.

Je désire maintenant y ajouter ce qui suit.

Jusqu'à présent les manufactures de la France, d'ailleurs très nombreuses, ont été tributaires des colonies anglaises et de l'Égypte pour le surplus que ne peuvent fournir les États-Unis, malgré leur immense production. Aujourd'hui on parle sérieusement de faire produire aux colonies françaises le coton nécessaire à cette industrie qui occupe en France quatre régions différentes et qui, en Normandie seulement, procure du travail à plus de 100,000 ouvriers.

Les Antilles françaises, l'Algérie, Madagascar et quelques parties du Sénégal jouissent d'un climat entièrement favorable à la culture du coton. Des expériences antérieures ont d'ailleurs déjà donné des résultats très satisfaisants. En Algérie, par exemple, pendant la guerre de Sécession, on a produit plus de 800,000 kilogrammes de coton.

J'arriverai au Havre le 25 de ce mois et vous tiendrai immédiatement au courant de l'état du marché. Dans "la Revue Commerciale" de cette ville, en date du 1er Juin, je vois que les arrivages de la semaine (250 balles) ont à peine dépassé les ventes (237 balles). Le stock sur place doit donc être insignifiant, si mes derniers renseignements sont exacts.

Je vous salue bien sincèrement,

M. LAMIRAULT.

2. *Not to be translated into French.*

A Melbourne firm advertises that a lucrative position in their office can be secured by any young man able to keep a correspondence in French. The firm is exporting Australian produce, and a knowledge of such a business is supposed to be required from the successful applicant. The applications are to be made in writing and in French.

Write, in French, a short application, in which you offer your services, stating your age, previous experience, knowledge of French, and of the goods exported by the firm. In this letter make use of the terms, headings, and endings generally employed in French commercial correspondence.

## GERMAN.

*The Board of Examiners.*

**Candidates must satisfy the Examiners in EACH part of the Paper.**

Handwriting, spelling, and general intelligence will be taken into account throughout the Examination.

## A.—TRANSLATION.

## 1. Translate into English—

Man hatte einem Bauern sein Pferd aus dem Stalle gestohlen. Kurze Zeit darauf ging er auf den Markt. Wie erstaunte er, als er sein Pferd in den Händen eines unbekanntes Mannes sah! Schnell ergriff er den Zügel des Pferdes und rief laut: "Das ist mein Pferd; vorige Woche hat man es mir gestohlen." Der Unbekannte sagte ruhig: "Sie irren sich, lieber Freund. Dieses Pferd gehört mir und mag wohl dem Ihren ähnlich sein." Da hielt der Bauer dem Pferde beide Augen zu und sagte: "Wenn das Pferd Ihnen gehört, so sagen Sie mir doch, auf welchem Auge es blind ist." Jener erwiderte schnell: "Auf dem rechten Auge." "Sie sehen wohl, dass Sie es nicht wissen!" rief der Bauer, indem er das rechte Auge zeigte. "Nein, ich habe mich nur versprochen; ich meinte: auf dem linken Auge," entgegnete der Fremde. Nun deckte der Bauer auch das linke Auge auf und sprach: "Jetzt ist es klar, dass du ein Dieb und Lügner bist. Das

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Pferd ist auf keinem Auge blind." Alle Umstehenden lachten und riefen: "Der Dieb ist ertappt!" (*caught*). Er wurde verhaftet, ins Gefängnis geführt und bestraft.

#### 2. Translate into English—

Liebe Schwester!

Jetzt bin ich schon zehn Monate hier auf der Schule, und will versuchen, Dir einen deutschen Brief zu schreiben. Ich lerne diese Sprache mit grossem Eifer und habe gute Fortschritte darin gemacht.

Das Leben in unserer Pension (*boarding-school*) ist sehr angenehm; doch haben wir viel zu arbeiten und müssen fleissig sein. Wir stehen sehr früh auf, und beginnen unsere Arbeiten um 7 Uhr. Der Unterricht dauert bis in den Nachmittag. Wenn wir fertig sind und die Bücher fortgelegt haben, gehen wir spazieren oder schwimmen in dem kleinen Fluss, der durch diese Stadt fliesst. Aber wir müssen pünktlich um 7 zurückkehren. Dann essen wir unser Abendbrot und gehen bald nach 9 Uhr zu Bett.

Ich muss aufhören, denn es läutet eben zum Frühstück. Schreibe mir bald; ich möchte gern wissen, wie es euch allen zuhause geht.

#### B.—COMPOSITION AND GRAMMAR.

#### 3. Translate into idiomatic German—

You tell me you want to have a description (*Beschreibung*) of our quarters (*Haus*) here in Dresden. We do not live in the centre of the town, but in a suburb (*Vorstadt*), where there is not so much noise. From our windows on the first floor we can see the Elbe, and often watch

(*beobachten*) the pretty boats and steamers as they go up or down the stream. The right bank of the river is higher than the left and is covered with woods. But now it is not so fine as in summer. The trees have lost their leaves, and it is very cold. Several times the whole landscape (*Landschaft*) has been covered with snow; but we have not had any skating (*Schlittschuhlaufen*) yet; the ice has never been thick enough.

4. Give, with the definite article, the genitive singular and the nominative plural of—Bauer, Stall, Pferd, Mann, Zügel, Dieb, Gefängnis, Sprache, Pension, Uhr, Mittag, Fluss, Bett, Brot, Stück, Stadt.
5. Give the second person singular of the indicative present and imperfect, and also the past participle, of the following verbs occurring in Questions Nos. 1 and 2—gestohlen, ging, sah, ergriff, rief, hielt, wissen, versprochen, essen.
6. Give the German for—  
The day before yesterday; to-morrow morning; last year; I have not seen him for a fortnight; a year and a half ago; at a quarter to 9 o'clock.
7. Re-write the following sentences, completing all words the ending of which is omitted, and translate them into English :—  
Was wollen Sie trinken: kalt—— Wasser, frisch—— Milch oder alt—— Wein?  
Das Buch liegt auf d —— Tisch, zwischen d—— Lampe und d—— Tintenfass.  
Welch—— Haus hast du lieber: euer—— eigen—— oder unser—— ?



8. Translate—

I write a letter; I read it through once more; I put it into an envelope; I address it; I go to the post-office; I buy a stamp; I stick it on the envelope; I throw the letter into the box.

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N.B.—*A second paper will follow for candidates for the Junior Commercial Examination.*

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GERMAN.—SECOND PAPER.

(JUNIOR COMMERCIAL EXAMINATION ONLY.)

*Time: One hour and a half.*

*The Board of Examiners.*

Candidates must satisfy the Examiners in EACH part of the Paper.

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

C.—COMMERCIAL CORRESPONDENCE.

1. Translate into English—

Herrn W. Steintal in Hamburg.

Berlin, den 2 ten März, 1906.

Sehr geehrter Herr!

Eine seit kurzem in Hamburg etablierte Handlung, deren Namen Sie unterhalb dieses Briefes vermerkt finden, hat eine ziemlich bedeutende

Quantität Waren bei uns bestellt. Auf unsere Erkundigungen bei hiesigen Häusern erhielten wir die Auskunft, dass ihres Wissens keiner der drei Associés ein grösseres Vermögen besitze, und tragen daher Bedenken, den Auftrag, der sich auf mehrere tausend Mark beläuft, auszuführen. Ohne Zweifel ist Ihnen etwas Zuverlässiges über die Verhältnisse dieser Herren bekannt. Wir wären Ihnen dankbar, wenn Sie uns davon Mitteilung machen und gleichzeitig sagen wollten, ob Sie es für geraten halten, denselben einen grösseren Kredit zu bewilligen. Von Ihrer Auskunft werden wir den vorsichtigsten Gebrauch machen.

Zu Gegendiensten gern bereit  
zeichnen wir hochachtend und ergebenst

M. Reinardt & Co.

2. To the letter given in Question No. 1, write a reply, in German, stating, after the usual introduction, that you are glad to give the information asked for; that the firm in question is carried on by three brothers belonging to a well-known and respected (*geachtet*) family; that one of them has been for four years a clerk in your own business, and that you have a very good opinion of him, as everybody has who knows him; that they certainly have not a large capital, but nevertheless deserve every confidence (*Vertrauen n.*). Conclude with the request to treat this reply as confidential and to use it with caution (*Vorsicht*).

## ARITHMETIC.

*The Board of Examiners.*

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

1. Find the value of the following expression, correct to seven places of decimals, *without unnecessary arithmetic* :—

$$1 - \frac{1}{3^2} + \frac{1}{3^2 \times 5^2} - \frac{1}{3^2 \times 5^2 \times 7^2} \\ + \frac{1}{3^2 \times 5^2 \times 7^2 \times 9^2}.$$

2. Find the prime factors, H.C.F. and L.C.M. of 13167 and 5355.

Simplify—

$$\frac{\cdot 47 - 3\frac{1}{4} \text{ of } \frac{2}{17}}{\cdot 6 \text{ of } \frac{7}{153} + 14\frac{1}{17}}$$

3. Find, by graphic arithmetic, the value of

$$\sqrt{3} - \sqrt{2}.$$

(Unit, 2 inches or 5 centimetres.)

4. An iron sphere has a radius of 25·47 centimetres; the mass of 1 c. cm. of the iron is 7·561 grammes. Determine—using contracted multiplication—the mass of the sphere in kilogrammes, correct to one-tenth of a kilogramme.
5. Find the rent of 25 acres 3 sq. chains 60 sq. yards of land at £5 6s. 8d. per acre.

6. A sum of money, allowed to accumulate for 4 years at  $7\frac{1}{2}$  per cent., compound interest, amounts at the end of the period to £1,849. What was the original sum? What would the amount have been if simple interest had been added instead of compound?
  7. £1,550 is invested in stock at  $77\frac{3}{8}$ ; £500 stock is sold at  $84\frac{1}{2}$  and the rest at 73; the brokerage on each of the three transactions is  $\frac{1}{8}$ th per cent. Find the investor's net gain or loss, and the amount of the broker's bill?
  8. A grocer mixes three kinds of tea at 1s. 3d., 1s. 6d., and 1s. 9d. per lb. respectively. If he uses equal parts of the first and second kinds, how much in proportion must he add of the third in order to to make a profit of 25 per cent. by selling the mixture at £11 1s. 8d. per cwt.?
  9. *A* and *B* enter into partnership, each contributing £800 capital; *C* joins them five months afterwards, contributing £400; three months later *B* withdraws his capital. The profits at the end of the year amount to £97 6s. 7d. What should each receive?
  10. The true discount on a four months' bill at  $7\frac{1}{2}$  per cent. per annum is £4 7s. 6d. For what amount was the bill drawn, and what is the banker's discount on it for the same period and rate?
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## BOOKKEEPING, PRÉCIS AND COMMERCIAL CORRESPONDENCE.

(JUNIOR COMMERCIAL EXAMINATION ONLY.)

N.B.—Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

### PAPER A.—BOOKKEEPING.

#### *The Board of Examiners.*

*All Candidates must attempt questions 1 and 2; they are also required to answer any TWO, but not more than two, of the questions numbered 3 to 6.*

1. The Balance-sheet of Messrs. Murdstone and Grinby, of London, Wine Merchants, stood at 31 December, 1849, as follows :—

#### LIABILITIES.

|                                   |      |     |        |
|-----------------------------------|------|-----|--------|
| Capital—Edward Murdstone          | ...  | ... | £2,440 |
| James Grinby ..                   | ...  | ... | 1,220  |
| Sundry Creditors—Thomas Grayper   | £170 |     |        |
| Dr. Chillip                       | ...  | 180 |        |
|                                   |      |     | 350    |
| Bills Payable—No. 123, S. Bodgers | ...  | ... | 500    |
|                                   |      |     | <hr/>  |
|                                   |      |     | £4,510 |
|                                   |      |     | <hr/>  |

#### ASSETS.

|                                     |     |      |        |
|-------------------------------------|-----|------|--------|
| National Provincial Bank of England | ... | ...  | £3,000 |
| Wine ...                            | ... | ...  | 1,000  |
| Sundry Debtors—R. Quinion           | ... | £100 |        |
| P. Gummidge                         | ... | 200  |        |
| Daniel Peggotty                     | ... | 200  |        |
|                                     |     |      | 500    |
| Bills Receivable—No. 254, H. Barkis | ... | ...  | 10     |
|                                     |     |      | <hr/>  |
|                                     |     |      | £4,510 |
|                                     |     |      | <hr/>  |

The firm's books had been kept by single entry to the date of the Balance-sheet, but the partners desire that a proper system of Bookkeeping shall be begun with the New Year. You are therefore required to make the necessary opening entries in the books, showing all entries in full.

2. The following are the transactions of the above-named firm for the month of January, 1850 :—

(NOTE.—All moneys received are paid into and all moneys paid away are drawn out of the Bank.)

| 1850.                                                                                                        | £     |
|--------------------------------------------------------------------------------------------------------------|-------|
| Jan. 3 Bought of C. Mell, wine as per invoice, and accepted his draft at 30 days for the amount              | 600   |
| 4 Paid S. Bodgers, B.P. No. 123                                                                              | 500   |
| 5 Paid Thomas Grayper                                                                                        | 170   |
| 6 Received from R. Quinion                                                                                   | 100   |
| Sold to S. Bodgers, wine as per invoice                                                                      | 350   |
| 7 Received from S. Bodgers, in part payment for wine, cash                                                   | 200   |
| And J. Fibbitson's P.N. (No. 255) for balance, the P.N. being payable on 22 January                          |       |
| 10 Bought of K. Creakle, wine as per invoice                                                                 | 1,000 |
| 11 Paid K. Creakle in part payment for wine                                                                  | 495   |
| and were allowed discount on such payment                                                                    | 5     |
| Gave K. Creakle our P.N. at 3 months for balance with interest added at 5 per cent. per annum                |       |
| 12 Received from George Demple, of Paris, consignment of brandy for his account and risk. Brandy invoiced at | 1,200 |
| Paid duty thereon                                                                                            | 1,200 |
| Paid landing charges                                                                                         | 100   |
| 13 Sold to C. Mell part of consignment of brandy for cash                                                    | 800   |
| 14 Accepted George Demple's draft, dated 10th January, at 2 m/s.                                             | 800   |

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|         |                                                                                                                                                                                                                                                                                                                     | £     |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1850.   |                                                                                                                                                                                                                                                                                                                     |       |
| Jan. 15 | Sold to R. Quinion part of Demple's consignment ... ..                                                                                                                                                                                                                                                              | 1,600 |
|         | And sold balance thereof to S. Bodgers for cash ... ..                                                                                                                                                                                                                                                              | 1,200 |
|         | R. Quinion pays on a/c sale of brandy and gives us his P.N. at 2 months for the balance, the agreement being that we shall discount the P.N. with our Bankers and charge the discount to his a/c. Discounted same accordingly, and were charged 5 per cent. per annum discount. Our bankers credit us with proceeds | 800   |
| 16      | Made up A/S for Geo. Demple, charging him Brokerage, 5 per cent. ; Commission, 2½ per cent. ; Del Credere, 2½ per cent. ; Cooperage and Casks, £15 ; Cartage and Freight, £10<br>Received from R. Quinion, cheque for amount of discount on his P.N.                                                                |       |
| 22      | J. Fibbitson's P.N. is returned dishonoured.                                                                                                                                                                                                                                                                        |       |
| 26      | Consigned to New York to Jefferson Brick for our a/c and risk, wine invoiced at ... ..                                                                                                                                                                                                                              | 500   |
|         | And paid cartage and freight thereon ...                                                                                                                                                                                                                                                                            | 40    |
|         | Insured consignment with Lloyds for £600, at £2 per cent., the premium being credited to Lloyd's a/c.                                                                                                                                                                                                               |       |
| 28      | Drew on Jefferson Brick, at 1 m/s for £400 on a/c consignment, and were charged ¼ per cent. exchange                                                                                                                                                                                                                |       |
| 31      | Paid 1 months' rent ... ..                                                                                                                                                                                                                                                                                          | 10    |
|         | Paid salaries of clerks ... ..                                                                                                                                                                                                                                                                                      | 15    |
|         | Enter the above in the proper books.<br>Balance all books, and take out Trial balance.                                                                                                                                                                                                                              |       |

3. What do you understand by the following :—When a document is referred to illustrate your answer by an example :—

- |                      |                |
|----------------------|----------------|
| (a) Pay-in slip.     | (d) Cheque.    |
| (b) E. and O.E.      | (e) Demurrage. |
| (c) Account current. |                |

4. Draw out *in full*—
- (a) The P.N. referred to in Question 2, under date 11 January.
  - (b) The A/S referred to in Question 2, under date 16 January.
5. Give a list of Books used in a Merchant's office, and describe shortly the use of any *Two* of them.
6. A merchant issues about 30 cheques daily, and at the end of each month there are usually about 50 cheques which have not been presented for payment. How would you deal with the outstanding cheques at the end of the month, and what steps would you take to verify their amount ?
- 

## BOOKKEEPING, PRÉCIS AND COMMERCIAL CORRESPONDENCE.

(JUNIOR COMMERCIAL EXAMINATION ONLY.)

N.B.—Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

### PAPER B.—PRÉCIS AND COMMERCIAL CORRESPONDENCE.

#### *The Board of Examiners.*

1. Prepare a digest (not exceeding in length one page of foolscap) of the following speech :—

Mr. Allan McLean, leader of the Victorian anti-socialist party in the House of Representatives, addressed a meeting of his constituents in the Victoria Hall, Sale, to-night. The Mayor (Councillor J. W. Walden) occupied the chair. There were about 500 persons present, a large proportion being ladies.



Mr. McLean, who on rising was received with cheers, said :—Whatever may be the result of the present election, I shall never forget the generous manner in which you have treated me in the past. I regret that at the outset I have to refer to a rather disagreeable matter, but it is better that everything should be cleared up. A report is being circulated throughout Gippsland that I do not intend to seek re-election, but that I intend to withhold the knowledge from my constituents until the last moment, and that then my son would be nominated for Parliament instead of myself. In a district where I have spent the whole of my life, I am sorry that even one individual should think I would be capable of an act so unworthy of the confidence you have reposed in me. When I decide to retire from Parliament—and probably the time may not be far distant—you will be the first people taken into my confidence, in ample time for a suitable successor to be appointed. I shall be no party to foist any nominee on the district, either my own or any other man's son. I consider the trust you have reposed in me a sacred privilege, and I have tried to deserve it. I was told several weeks ago that if I would come forward as a supporter of the present Ministry I would be accorded a walk-over. Now, in my physical condition you can easily understand that a walk-over would be very welcome, but I would not be doing my duty to you or the Commonwealth if I followed such a suggestion. When I was offered assistance by a number of leading politicians who told me that, as I would be unable to visit every part of my electorate, they would be glad to speak for me, I felt like my countryman, Rhoderic Dhu, who would "not seek one clansman's brand for aid against a valiant hand." I am quite willing to concede to my opponent the advantages accruing from visiting all parts of the district, and I intend to fight this contest man to man and steel to steel. In previous contests I have never felt it necessary to refer to any word or act of my opponent unless I met him on the same platform. Unfortunately, some statements were made the other evening that place me in an altogether false position. If I were the only one affected I would let it pass, as I have always done in the past, but there are eight or nine other protectionists

sitting with me. In justice to them I must correct some of those statements. But I will not say more than absolutely necessary to clear myself, and I shall make no attack on my opponent. Mr. Wise is reported to have said—"I am a good fighter. At political times I can hit hard, and take a lot of hard knocks, but they must be true. I abominate the liar. The worst things to defend oneself against are the lies of an enemy. You have known me, and have never known me telling a deliberate lie." I am bound to accept that statement, and to believe that, like his illustrious namesake, George Washington, he had never told a lie to that moment; but I have to regret to draw your attention to the fact that it was not many seconds later when he started to put up a fairly good record. (Applause and laughter.) That is assuming that the report is correct. Mr. Wise is also reported to have said—"Mr. McLean followed Mr. Reid, and Mr. McCay followed Mr. McLean." Now that places me in a false position. I have never said at any time, or given any colour to the imputation, that I followed Mr. Reid. I am perfectly certain Mr Reid never said so.

#### REID-MCLEAN COALITION.

I have been a colleague of Mr. Reid's for about a year, and you get to know a man pretty well through working with him in Cabinet. I have never found him out in anything unfair or underhand, or in a falsehood. (Applause.) I have never at any time been a follower of Mr. Reid. We joined the Cabinet on terms of perfect equality. I am now sitting in the Opposition Corner with eight or nine others; but we are in no way whatever allied with the direct Opposition. If you look at the records of the last Parliament you will find that I voted much more frequently with the Government than with the direct Opposition—the free-traders. We were, however, and are, united in our views on the important question which is the main issue at the present election. My opponent also stated—"Mr. Reid says they have combined on the basis of a fiscal peace." I saw that statement in the columns of the *Age*, and was satisfied at the time that it was not true. To make doubly sure I questioned Mr. Reid in the

street respecting it, and he assured me that there was not the slightest foundation for the statement. He said he knew perfectly well that I differed from him on the tariff question. Mr. Wise, speaking with regard to myself, stated "that he (Mr. McLean) had telegraphed to Mr. Gratton Wilson, saying he was in accord with Mr. Reid's policy." This, of course, meant the whole policy. There is not one word of truth in that statement. Mr. Wilson, before leaving with Mr. Reid, asked me if he could take any message to my friends in the country. I told Mr. Wilson that he could tell the people, if he wished, that I was in entire accord with Mr. Reid on anti-socialism but not upon the fiscal question. I have another extract, which I regard as a serious imputation against my personal honour. In speaking of me, Mr. Wise is reported to have said :—

"I thought that when the elections came he would throw aside his personal feeling, and, in order to carry out his principles, would again join himself with the party he had formerly been attached to, and again oppose Mr. Reid."

There can be only one construction placed upon those words. It is that my attitude is impelled by personal pique against Mr. Deakin, and that I have betrayed the trust you reposed in me. I make this offer, that if Mr. Wise can satisfy any impartial tribunal, to be mutually appointed by him and me, that the principles I advocate at the present election are in conflict with the principles that I advocated at the last election, I give you my word of honour that I will retire from the contest. (Applause.) If the statement be proved untrue, Mr. Wise, as an honourable man, should withdraw the imputation.

#### MR. DEAKIN'S INCONSISTENCY.

At the last election the issue Mr. Deakin's Government placed before the community was fiscal peace for the term of the ensuing Parliament and anti-socialism. A leading article in the Government organ on the eve of the elections showed that a strong majority was returned in favour of fiscal peace. In the following February Mr. Deakin made a speech, in which, referring

to the third party system, he said—"It is absolutely impossible. It cannot continue. It ought not to continue." Subsequently Mr. Deakin entered into a coalition with Mr. Reid. After that he made the famous speech at Ballarat, and, without giving the notice stipulated in the agreement, he put an end to the coalition. That was the construction placed upon the speech by every newspaper, although Mr. Deakin denied it. The Reid Government had a programme of 20 items, but they prepared a fresh Governor's speech, and subsequently Mr. Deakin got an amendment carried in the House against the Reid Government. Now, if any one has changed it is not during our term of office. Mr. Reid, though he had a very much larger following than I had, always treated me in a very fair manner. Whenever there was a slight advantage to be given to one side he always gave it to me. Mr. Deakin was not strong enough to resist the pressure placed upon him, and the abuse he was subjected to, and you know how he ended by the speech he delivered at Ballarat. We who have adhered to the same views all through have not changed our parties, or betrayed our principles. (Applause.) The reason I am not working with Mr. Deakin is that long as I have been in public life I have not yet acquired the attributes of Bunyan's celebrated giant, Mr. Facing-both-ways. (Applause.) I have not yet learned to lay my principles aside as I would my umbrella or overcoat. I have adhered to my principles all through, and whatever the consequence to myself I intend to do so. (Cheers.)

#### PROTECTIONIST GROUPS COMPARED.

In the first place, let me describe my attitude to Mr. Reid and his party. We are both in accord on the question that divided the country at the last elections—that is anti-socialism. We are both opposed to the leading principles of socialism. If you compare the protectionists sitting in our corner with those protectionists following Mr. Deakin, you will certainly admit that the brains of the party are sitting in my corner—such men as Sir George Turner, Mr. McColl, and Lieut.-Colonel McCay. Mr. McColl, one of the most reputable men in Australian politics, was in England when the

change of Government took place, but on his return he took every means to satisfy himself as to the merits of the case, and having done that he selected a seat in our corner. Turning to the leading followers of Mr. Deakin, what do we find when they are faced by a general election? Mr. Harper has come out as a strong anti-socialist, Mr. Carty Salmon has done the same; Sir John Quick, one of the ablest and most consistent protectionists in the Parliament, has not only declared himself a strong anti-socialist, but he has gone further and said that he will withhold his support from any Government that will be in alliance with the socialists. I am, as you all know, a consistent and ardent protectionist, and, in my opinion, the Government did not keep good faith with the country when they neglected to make an honest effort to settle as much of the fiscal question as they could. During the last session I brought the matter under notice time after time, and was abused for it. I and those who sit with me intend to make the revision of the tariff the first work of the next Parliament. We believe that only when that question is set at rest will it be possible for free-traders and protectionists to combine. There may be one or two members of each who have conservative leanings, but to speak of conservatism in a Parliament elected by adult suffrage is the rankest hypocrisy. The great bulk are advanced democrats and liberals, and they could not possibly be otherwise elected as they are.

2. Make abstracts of the following letters :—

(a)

Sir,

#### MUNICIPAL ACCOUNTS.

The recommendation of the Joint Select Committee of the House of Lords and of the House of Commons on Municipal Trading, who reported in 1903, has been brought under the notice of the Association of Scottish Chartered Accountants in London, in connection with the recent appointment of a Departmental Committee on the same subject to confer and report, and we are instructed to forward you a statement of the Association's views in regard to this matter in order that they may be submitted to the Departmental Committee.

The report of 1903 made the following, amongst other, recommendations, viz. :—

“ That Auditors, being members of the Institute of Chartered Accountants in England and Wales or of the Incorporated Society of Accountants and Auditors, should be appointed by the Corporations, County Councils and Urban District Councils in England and Wales.”

The Committee's recommendation was no doubt made with the desire of securing that the audit of Municipal Accounts should only be entrusted to properly qualified Auditors, and with this desire our Association is in hearty sympathy, especially having regard to the large present and prospective growth of the Revenue producing Departments of administrations under the control of local authorities.

We respectfully submit, however, that should legislation be passed on the lines of the Committee's recommendation a very great injustice would be done to the three oldest Chartered Societies in the United Kingdom.

The privileges conferred by the Charters granted to the Scottish Societies are world-wide, and, while the Committee's recommendations, if adopted, would not prevent Members of the Scottish Chartered Societies practising in England and Wales, it would directly exclude them from what may be an important branch of accountancy work, and, so far as Members of the Societies practising in England and Wales are concerned, would seriously restrict the privileges conferred by their Charter.

We cannot but think that this exclusion of the Scottish Chartered Societies has resulted from an oversight, and that it only requires to be brought to the attention of the Departmental Committee to have it rectified in any subsequent report.

The Scottish Societies have always required a high standard of professional qualification as a condition of admission, and they are in fact the only Societies of Accountants the whole of whose members (with the exception of four survivors of the grantees of the original Charter) have been admitted only after apprenticeship and examination. It is a special

feature of these Societies that their apprentices must attend the Law Classes of a recognised University, and they are also recommended to attend the Lectures on Political Economy.

The members of the Scottish Societies having thus been thoroughly and expensively trained as qualified Accountants it is obvious that any Act of Parliament which excluded them from appointment as Auditors to local Corporations while admitting members of other and junior Societies, would be manifestly unjust and might, in the eyes of the public, be regarded as a reflection upon their professional standing; while such a provision would unreasonably restrict the selection of the local authorities in the choice of Auditors. It is hoped, therefore, that in any proposed legislation relating to the audit of Municipal Accounts such provisions will be inserted, as will permit of local Authorities appointing, as Auditors, Members of all Societies of Accountants in the United Kingdom, which are incorporated by Royal Charter or of the Society of Accountants and Auditors.

We have the honour to be,  
Sir,

Your most obedient Servants,

A. DODDS FAIRBAIRN, President.  
ROBERT BLAIR, Secretary.

The Secretary,  
Joint Select Committee on Municipal Trading,  
Westminster.

(b)

London, July 23rd, 1906.

Dear Sir,

Announcements have been made from time to time of the inauguration and progress of the Institute of Directors, and we have now the pleasure of informing you that in compliance with our Petition His Majesty the King has been graciously pleased to grant us a Royal Charter.

The Directors of Companies control investments amounting in share capital alone to upwards of 2,000 millions sterling, besides debenture and other loan

money to a large amount, and the need of such an institution, alike in the interests of the public and the directors becomes daily more apparent.

There is no other body of men controlling such vast and important interests which is not represented by its own Society, and in the initiation and consideration of legal changes affecting the status and management of Companies we believe that the institute, now officially recognised by Royal Charter, has before it a wide and important field of usefulness.

The bye-laws of the Charter will be framed in due course, and will probably provide for an entrance fee and possibly an increased subscription for new members, but at present the subscription is only one guinea per annum without entrance fee.

To country members the institute, centrally situated, with its library, reading, writing, and consultation rooms, telephone service, &c., should prove a great convenience.

We are, Dear Sir,  
Yours faithfully,

AVEBURY, President.  
H. M. BOMPAS, Chairman of Council.  
W. ARTHUR ADDINSELL, Secretary.

(c)

London, August 31st, 1906.  
The Bell Coy., Melbourne.

Gentlemen,

Replying to your favour of the 25th July, Mr. Russell had two interviews with me before leaving for Australia, on the second occasion he came and said that he would not be going for two or three months and then whilst I was abroad he called and left a few days later so that I only saw him twice and had no time to enter into details fully.

I told him if he had a proper house on this side I was quite willing to join the factory and arrange for the shipping of our surplus goods after November to Australia, at 3s. 6d., c.i.f. Melbourne, making an allowance of 2s. per case for all charges, i.e., landing, rent, and insurance, &c., and you or the receivers sending monthly accounts of sales and remittances. This was a thing which I suggested as a means of keeping a



supply on your side, as otherwise you might go six or eight months without the slightest chance of getting any goods shipped. The steamers sometimes absolutely refuse to take these matches, and I have been trying in every quarter to get out a matter of about a thousand gross to Sydney and Brisbane, and I am trying now by a special effort to get some to each place, but whether I succeed or not I cannot say, but the first opportunity I get I will send some, and if I have some assistance I have no doubt that in the end we could work up a very large trade in these goods. Not only am I selling the short matches but I can supply those that are about 4, 5, or 6 inches long, but I cannot do anything unless I can get a freight; to-morrow I might get a freight and then all well or I might not get it for another six months, anyway I have the goods ready and the moment I have a chance to ship them I will. I hope we shall succeed in doing something ere long, but up to the moment I have spared neither time nor expense in trying to get a freight, in order to make a shipment.

Yours faithfully,  
W. C. WILLIAMS.

3. Write a short report on *one* of the following subjects :—
- (a) An Australian bank's sources of profit ;
  - or,*
  - (b) The coming harvest and its effect upon trade ;
  - or,*
  - (c) The Melbourne Tramway system.
4. (a) Write, as secretary of the committee, a reply to the letter set out above in question 2 (a) stating—
- (1) The letter has been considered.
  - (2) Information wanted as to
    - (i.) The number of members of each Scottish Institute and their degrees ;
    - (ii.) A list of members admitted without examination with dates of admission ;
    - (iii.) Details of the course of study, examination, apprenticeship, &c., required by each society ; and
  - (3) Matter will be further considered.

- (b) A Promissory Note made by J. Fibbitson, dated 19 December, 1849, at one month payable to S. Bodgers, and by him endorsed to Messrs. Murdstone and Grinby, has been returned by the National Provincial Bank of England, who are Bankers for J. Fibbitson and Messrs. Murdstone and Grinby, dishonoured. Answer. Not provided for. Amount of Bill £150.

What steps would you take on behalf of Messrs. Murdstone and Grinby in connection with such dishonour. Give in your answer in full any notices or letters you may think it necessary to send.

- (c) Write an order to Messrs. Murdstone and Grinby to ship to Melbourne, to your principals, Messrs. Jones Bros. & Co., the following wine:—

40 hhds. Port, at 15s. per gall. f.o.b.

20 " Sherry, at 12s. 6d. per gall. f.o.b.

40 " Claret, at 8s. per gall. f.o.b.

Instruct them to ship per earliest P. and O. steamer and to draw for the amount at sight with B/L attached.

BOOKKEEPING, PRÉCIS AND COMMERCIAL  
CORRESPONDENCE.

(JUNIOR COMMERCIAL EXAMINATION ONLY.)

N.B.—Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

PAPER C.—TEST FOR HANDWRITING.

*The Board of Examiners.*

*(Twenty minutes allowed for this question.)*

1. Copy the following:—

A writer in the "Hospital" on the action of alcohol as medicine says:—"As in politics, so in medicine, the phenomenon known as the 'swing of the pendulum' is often very apparent. When taken by the mouth it acts as many volatile oils or pungent substances do, and reflexly stimulates the heart. This action is immediate, rapid, and occurs before any absorption has taken place beyond that necessary to affect the subjacent nerve endings of the buccal mucous membrane. Secondly, it acts as a vaso-dilator. The skin becomes flushed, and a sensation of warmth is experienced. Thirdly, it acts as a cerebral sedative. Fourthly, owing to its fairly complete oxidation, it is, in a certain sense, a food; and, lastly, it stimulates gastric secretion. These physiological points will serve to place the use of alcohol as a drug on a sound basis. It may, then, with advantage, be given in syncope, or

sudden cardiac failure as a reflex stimulant. In cases of chronic heart disease its only value will be as a vasodilator, to lessen the work of the cardiac muscle when the peripheral resistance is high. With a full pulse and low tension in the arteries, alcohol can have no effect on the circulation except the transitory reflex one above described, and as a protoplasmic poison its action, at any rate in large doses, must be distinctly deleterious to the cardiac muscle. As a stomachic in cases where the gastric secretion is diminished it will also be of use; here malt liquors may be advantageous, but obviously in cases of hypersecretion its use will be contra-indicated. . . ."

*(Ten minutes allowed for this question.)*

2. Write the following sums in column as they should appear in a Cash Book:—

£1000000 2s. 1d.; £200 0s. 9½d.; £600753  
 14s. 10¼d.; 2s. 6¾d.; £10001101 0s. 11d.;  
 £386 0s. 7d.; £542 2s. 2½d.; £988898 19s. 6½d.;  
 £355 17s. 2¼d.; £78787887 18s. 7d.; £445026  
 1s. 3¾d.; £611164 2s. 8d.; £222206 10s. 7d.;  
 £25 14s. 6½d.; £40000; £5000005; £344  
 9s. 5¼d.; £7008 15s. 3½d.; £2 4s. 9d.;  
 £20020202 4s. 2d.; 3s. 10¾d.; £8888008 18s.;  
 £1759 16s. 4d.; £75; £190000; £576;  
 £7760076 14s. 1d.; £80 0s. 4¼d.; £8 7s. 3d.;  
 £7 0s. 7d.; £55550005 13s. 10d.

## GEOGRAPHY.

*The Board of Examiners.*

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

1. Draw an outline map of West Australia, and on it name and mark the positions of the following:—  
Four towns, three rivers, three harbours, and three mountain ranges.
2. State and explain a method of determining the latitude of a place and explain the connection between latitude and mean annual temperature.
3. Illustrate by a sketch a trade route between Adelaide and San Francisco, and indicate the names and positions of the chief ports on the route.
4. Describe the method of government of India proper, omitting the native States. Name the countries adjoining it, and state how far the political boundaries coincide with or depart from natural physical features.
5. Illustrate, by a rough sketch map, the directions of the prevalent air currents which affect Australia, and explain their relations to the general terrestrial circulation of the atmosphere.
6. Define and illustrate the following terms:—Isoclinal, coastal plain, barrier reef, Sargasso sea, barometric gradient.
7. Explain clearly the origin of rain. Taking an Australian example, show what becomes of the rain which falls over any single river-basin.

## CHEMISTRY.

N. B.—Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

*The Board of Examiners.*

*Candidates should write equations, where possible, as well as verbal descriptions of chemical reactions.*

1. What do you understand by the law of *conservation of mass*? Illustrate your answer by reference to *three* combustible substances and their products when burnt in air.
2. What simple chemical and physical tests would you use to distinguish between calcium carbonate and sodium carbonate? What percentage of carbon dioxide will each yield if pure and anhydrous?  
[Given that  $C = 12$ ,  $Na = 23$ ,  $Ca = 40$ .]
3. What are the chemical names, formulæ, and chief uses of the following:—quick-lime, caustic soda, nitre, quartz, alum?
4. Explain the law of *definite proportions*, and illustrate it by reference to any substance you have prepared in the laboratory.
5. Give examples of three acids, and of their neutralization by bases. What is formed in each case?
6. How may hydrogen be prepared in the laboratory? Describe the process in full detail and give a sketch of the apparatus.
7. Give an account of the principal sources, purification, and allotropic modifications of sulphur.

## PHYSICS.

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

*The Board of Examiners.*

1. Define Velocity, Force, Work; specify the units in terms of which each is measured.

Describe two experimental methods of measuring force which are used in the laboratory.

2. Describe the apparatus you would use, and the experiments you would perform with it in order to verify the relation

$$v^2 = 2fs,$$

where  $v$  denotes velocity,  $f$  uniform acceleration, and  $s$  space described from rest.

3. State and prove the theorem known as the "polygon of forces."

Forces of magnitude equal to 1, 2, 3 and 4 pounds weight, respectively, act north, east, south, and west from a fixed point; determine, by means of a diagram drawn to scale, the magnitude of their resultant in pounds weight.

4. Define Centre of Gravity, and show how to determine the centre of gravity of a plane triangle (a) by calculation, (b) by experiment.

5. State Archimedes' Principle, and define Specific Gravity.

A small flask weighs 13.582 grammes empty ; when filled with water the weight is 38.382 grammes, and when filled with kerosene, 33.298 grammes. Find the specific gravity of kerosene.

6. State Boyle's Law, and give a full account of experiments which verify it.
  7. Describe fully the mode of construction and graduation of a mercurial thermometer.  
What temperature Centigrade equals  $5^{\circ}$  Fahrenheit, and what temperature Fahrenheit equals  $57^{\circ}.4$  centigrade ?
  8. A brass rod measures 27.5247 centimetres at  $50^{\circ}$  and 27.5494 centimetres at  $100^{\circ}$ ; find the length at  $0^{\circ}$ , and deduce the coefficient of linear expansion from the lengths at  $0^{\circ}$  and  $100^{\circ}$ .
  9. State the Laws of Evaporation into an enclosed space, and describe experiments which verify each of them.
  10. Define Radiation, Emissive Power, Absorptive Power. Show how to compare the emissive powers (for radiation) of any two substances.
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## ANATOMY AND PHYSIOLOGY.

*The Board of Examiners.*

Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

Give **BRIEF** answers, illustrated by diagrams, to the following questions:—

1. Show, by means of drawings, the position of the kidneys of the frog in relation to the alimentary system, and describe carefully the blood supply to them.
2. Give diagrams and descriptive notes in illustration of the anatomical parts concerned in the process of respiration in the frog.
3. Describe the structure and function of a cell by reference to any protozoon with which you are acquainted.
4. Give an account, with diagrams, of the different kinds of *epithelia* met with in the alimentary tract of a man.
5. What do you understand by a *perfect joint* as applied to the articulation of bones in the human body?

Illustrate by means of examples.

6. What are the functions of the *anterior* and *posterior* roots of a spinal nerve?

Show how their respective functions have been ascertained.

Describe the minute structure of a nerve-trunk.

7. Where is the *pancreas* in man, and into what part of the alimentary canal does it discharge its secretions?  
Describe the part its secretions play in digestion.
8. What are the principal ingredients of milk? Is it, in your opinion, a perfect food? Give reasons for your answer.
9. Explain the difference in colour between *venous* and *arterial* blood, and state to what this difference is due.
10. Give a few reasons in support of the statement that *the body of a man, in some respects, may be regarded as a machine.*

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## BOTANY.

### *The Board of Examiners.*

[Illustrate your answers with figures wherever possible.  
Attempt Six questions only.]

N.B.—Handwriting, Spelling, and General Intelligence will be taken into account throughout the Examination.

1. (a) Give instances of climbing plants, describing the modes by which they climb. (b) How does the stem of a climber differ from that of an ordinary plant? (c) How does the plant gain by the climbing habit?
2. (a) Describe the structure of a bud, and explain fully its importance to the plant. (b) Where do buds usually occur? Give any exceptions you may know.

3. (a) What are the chief functions of the root of a land plant. (b) Point out how its structure is adapted to its function.
  4. Mention (a) a plant which grows in shady places, (b) one which grows in wet places, (c) one which grows under water, (d) one which grows in very dry places, and (e) point out in what general features these four plants differ from one another.
  5. Mushrooms can be grown in complete darkness and attain full size. Why is this? Where does the food come from? Why is the same not the case with green plants when grown from seed?
  6. Describe experiments to shew that plants transpire more actively in light than in darkness or to shew that germinating seeds absorb oxygen and evolve carbon dioxide.
  7. Give an account (a) of the pollination of flowers, or (b) of the distribution of seeds.
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## DRAWING.

## 1. PRACTICAL GEOMETRY.

*Time allowed: One hour and a half.*

*The Board of Examiners.*

## INSTRUCTIONS TO THE CANDIDATE.

You are to attempt only four questions, one of these must be either question No. 6 or No. 7.

Put the number of the question beside each answer.

Results must be obtained by construction and must not be the result of trial or guessing.

All construction lines must be allowed to remain.

Parallel and perpendicular lines may be drawn by means of the set square and straight edge.

Neat and accurate workmanship is expected.

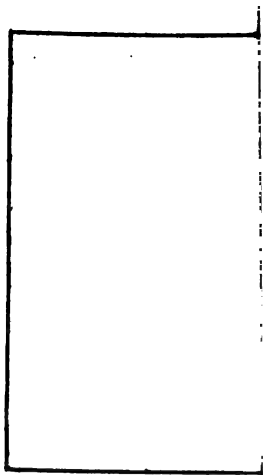
H.P. = Horizontal Co-ordinate Plane.

V.P. = Vertical Co-ordinate Plane.

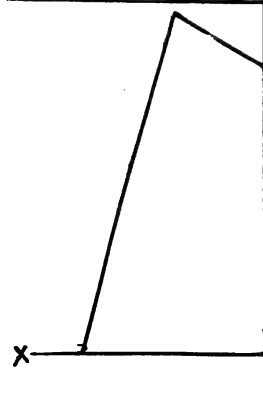
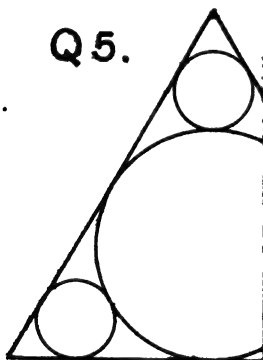
## QUESTIONS.

- Describe an ellipse within the oblong given in diagram Q1, the curve to touch each of the four sides tangentially. Use any method excepting that of the thread and pins. —[20 marks.]
- Construct an isosceles triangle, the vertical angle being  $40^\circ$  and the base  $2\frac{1}{2}$ ". A protractor must not be employed. —[15 marks.]

3. A table top is in the form of a regular pentagon, the sides of which are each  $1\frac{1}{2}$ " long. Construct the pentagon to a scale of 2" to 1'.  
—[20 marks.]
  4. Construct a square, the area of which is equal to that of the oblong in diagram Q1.  
—[15 marks.]
  5. Show, to a slightly larger scale, what construction is necessary to produce the figure given in diagram Q5.  
—[25 marks.]
  6. Diagram Q6 gives the elevation of an indiarubber ball on which are painted two bands of colour. Give the plan of the ball, together with the colour bands.  
—[35 marks.]
  7. In diagram Q7 is given the elevation of a right square pyramid lying on the *H.P.* on one of its triangular faces. Draw the plan of the pyramid and show the section made by a vertical plane which bisects the axis of the solid and makes an angle of  $45^\circ$  with the *V.P.* towards the left.  
—[35 marks.]
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Q 5.



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## DRAWING.

## 2. FREEHAND DRAWING.

*The Board of Examiners.*

You are to make a drawing of the example given on the next page. Your drawing may be executed with a lead pencil, a pen and ink, or a brush and any suitable liquid, and must be in outline only. Ruling, measuring, or other mechanical aids are forbidden. The greatest width of your drawing is to be about 2 inches greater than the greatest width of the example, the other parts to be enlarged in proportion.

You are not expected to completely finish the example in the time allowed.

One hour is allowed for your work.





**DRAWING.****3. MODEL DRAWING.**

*The Board of Examiners.*

*Time allowed: One hour.*

**INSTRUCTIONS TO THE OFFICERS IN CHARGE OF  
THE EXAMINATION.**

The objects required are:—

1. An iron bucket.
2. A cube, from a set of drawing models.

On a suitable support place an imperial drawing board, resting horizontally, and about 2 feet above the floor.

(1) Place the bucket *upon its side* on the drawing board, its open end towards the candidates, and its axis receding towards the right at an angle of about  $45^\circ$  with the front edge of the board.

(2) On the right of the bucket place the cube, with one corner resting upon the drawing board, and leaning against the bucket.

Candidates must have a clear view of both objects and must be able to see into the bucket.

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*Immediately before the Examination commences the following instructions must be read to the Candidates.*

Each Candidate is to make a drawing of the cube and the bucket.

The board upon which the objects rest is not to be drawn.

Your drawing must fairly fill the sheet of paper supplied to you. It must be executed in outline, and with a free hand.

A *single* pencil, or a substitute for the pencil, may be held between the objects and the eye, in order to estimate their apparent proportions, but all other forms of measuring, and ruling or other mechanical aids, are strictly forbidden.

The time allowed for your work is One hour.

## DRAWING.

### 4. ELEMENTARY PERSPECTIVE.

#### *The Board of Examiners.*

*Time allowed: One hour and a half.*

1. Put into perspective the four-legged "milking stool," shown in plan and elevation in the figure on opposite page.

The stool rests upon the ground plane upon its circular seat, and a line which would join points *A* and *B* in plan is parallel to the picture plane. The centre of the seat upon the ground is 2 feet beyond the ground line and 1 foot to the left of the spectator.

Height of the eye above the ground, 3 feet.

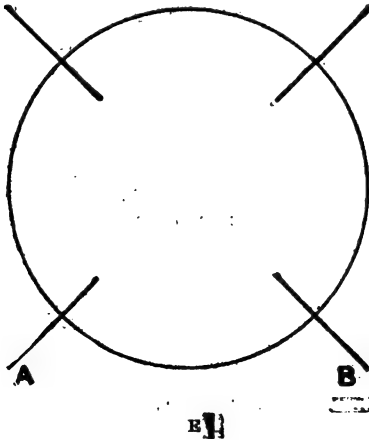
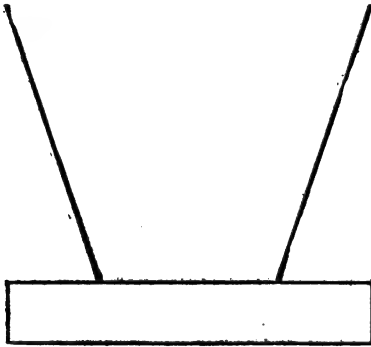
Distance of the eye in front of the picture, 5 feet 6 inches.

Scale  $1\frac{1}{4}$  in. to 1 foot.

The dimensions of the stool may be taken directly from the diagram.

2. Make a freehand sketch of the circular slab which forms the seat of the above stool, when it rests on the ground exactly opposite the spectator,

with its circular faces in vertical planes inclined to the picture at angles of  $45^\circ$  towards the right, the eye being above the slab and well in front of the picture.



## TYPEWRITING.

(JUNIOR COMMERCIAL EXAMINATION ONLY.)

*The Board of Examiners.*

**Neatness, speed as shown by the amount of work completed, spelling, syllabication, punctuation, and general intelligence will be taken into account.**

Candidates must submit at least Three papers covering—  
(1) Nos. 1 or 2; (2) Nos. 3 and 4, or No. 5; (3) No. 6 (indispensable).

## 1. Copy the following:—

The Subscription List will open on Thursday, the 16th March, and close on or before 4 o'clock the same day.

Messrs. Tompkins, Jenner, & Co., 435 East-street, London, E.C., are authorized to receive subscriptions for the undermentioned issues:—

The Utopian Railway Company (Limited). Incorporated under the Companies Act 1862 to 1866. Authorized under Royal Decrees of the Utopian Government of 9th April, 1885, 14th July, 1886, and 21st January, 1887, by which a guarantee of interest at 8 per cent per annum on \$4,964,400, equal to \$397,152, is granted for a period of 99 years from the 9th April, 1887, on the terms and conditions stated in the decrees, payable out of the Treasury of the Utopian Government; the additional guaranteed capital for authorized extra work is mentioned below.

Issue of £200,000 six per cent. prior lien mortgage bonds, series B, part of a total authorized issue of £300,000, secured by a mortgage deed giving a charge on the railway, subject only to the charge securing the previous issue of £285,000 prior lien mortgage bonds, series A, but in priority to the whole of the existing

debenture and share capital. The bonds are redeemable by fifteen annual drawings at par, commencing on the 1st July, 1906, or, at the option of the company, on giving six months' notice after that date at £110.

Price of issue 91½ per cent., payable—

5 per cent. on application ;

26½ per cent. on allotment ;

30 per cent. on 17th April next ;

30 per cent. on 17th May next.

*Capital Issued.*

£132,090 ordinary shares.

300,000 7 per cent. preference shares.

730,000 6 per cent. debentures.

285,000 6 per cent. prior lien mortgage  
bonds, series A.

Total £1,447,090

*Board of Directors.*

A. Henry Thomas, Esq., Chairman.

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*Brokers.*—Messrs. Clayton, Gibbs, & Co.,  
Euston House, E.C.

*Solicitors.*—Messrs. Flood and Sons.

*Secretary.*—John Worth, Esq.

*Offices.*—398 Finsbury Pavement, E.C.

2. Copy the following:—

### FREE EDUCATION.

Many persons are anxiously awaiting the effect of free education on the attendance. Here are the official returns up to this evening, from 370 Board Schools only out of 410, forty not yet having reported. The increase for the first week of free education, ending 4th September, is 28,471, compared with the last week of payment of fees, ending 28th August.

|                     | Week ending<br>23rd August. |                             | Week ending<br>4th September. |                             |
|---------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------|
|                     | No. of<br>Schools.          | Average<br>Attend-<br>ance. | No. of<br>Schools.            | Average<br>Attend-<br>ance. |
| City ...            | 4                           | 994                         | 4                             | 1,166                       |
| Chelsea ...         | 33                          | 29,048                      | 33                            | 32,572                      |
| Finsbury ...        | 44                          | 34,395                      | 44                            | 37,577                      |
| Greenwich ...       | 49                          | 34,253                      | 49                            | 37,178                      |
| Hackney ...         | 43                          | 38,629                      | 43                            | 41,426                      |
| East Lambeth...     | 41                          | 36,022                      | 41                            | 40,154                      |
| West Lambeth...     | 45                          | 40,290                      | 45                            | 44,303                      |
| Marylebone ...      | 24                          | 19,948                      | 24                            | 22,291                      |
| Southwark ...       | 29                          | 23,726                      | 29                            | 25,449                      |
| Tower Hamlets       | 51                          | 42,005                      | 51                            | 45,305                      |
| Westminster ...     | 7                           | 2,666                       | 7                             | 3,026                       |
| <b>Total ...</b>    | <b>370</b>                  | <b>301,976</b>              | <b>370</b>                    | <b>330,447</b>              |
| <b>Increase ...</b> | <b>...</b>                  | <b>...</b>                  | <b>...</b>                    | <b>28,471</b>               |

It may be supposed that many parents may have kept their children at home the first week

after the holidays that they might begin their term with free education; but, for all that, there is a large increase, which is very gratifying. There are 410 Board Schools in London, with 450,981 children on the roll, and an average attendance of only 347,857, making the number of absentees 103,124, albeit that £40,000 is expended annually in enforcing compulsory attendance. Now that the last vestige of excuse has been removed the number of absentees ought to be very greatly reduced.

London, 7th September.

3. Copy, and display in correct form, the following:—  
Percy F. Green, stockbroker.

18 Clinton-avenue, London, E.C.

*List of Syndicates Open and Closed.*

Syndicate, Stock, Duration, Profit.—No. 1, Mex. Rails, 13 days, 70 per cent.; No. 2, Bton. A., 21 days, 150 per cent.; No. 3, Milwaukee, 8 days, 113 per cent.; No. 4, Great Eastern, 29 days, 60 per cent.; No. 5, Dover A., 15 days, 80 per cent.; No. 6, Trunk 1st, 40 days, 30 per cent.; No. 7, Spanish, 30 days, 75 per cent.; No. 8, Jagersfontein, 29 days, 212 per cent.; No. 9, Louisvilles, 7 days, 90 per cent.; No. 10, Union Pacific, 12 days, 120 per cent.; No. 11, North-Western, 60 days, 150 per cent.; No. 12, Sheffield, 5 days, 50 per cent.; No. 13, Bton. A., 9 days, 85 per cent.; No. 14, Greek 815, 4 days, 115 per cent.; No. 15, Rio Tinto, 25 days, 30 per cent.; No. 16, Atchison, 16 days, 45 per cent.; No. 17, Berwicks, 11 days, 87 per cent.; No. 18, Mex. Rails, 18 days, 115 per cent.; No. 19, Uruguay, 6 days, 70 per cent.; No. 20,



Wabash D., 35 days, 55 per cent.; No. 21, Frunk Guar., 35 days, 35 per cent.; No. 22, Dover A., 3 days, 20 per cent.; No. 23, Boston B., 9 days, 42 per cent.; No. 24, North-Eastern, 50 days, 95 per cent.; No. 25, Rupee Paper, 10 days, 155 per cent.; No. 26, Norfolk Pref., 21 days, 60 per cent.; No. 27, Mex. Rails, 5 days, 65 per cent.; No. 28, Bton. A., 10 days, 70 per cent.; No. 29, Milwaukeees, 16 days, 10 per cent.; No. 30, Sheffield A., 15 days, 55 per cent.; No. 31, Hull and Barnsley, 34 days, 105 per cent.; No. 32, North British, even; No. 33, Jagersfontein, 13 days, 130 per cent.; No. 34, Ohio, 27 days, 33 per cent.; No. 35, Pennsylvania, 31 days, 90 per cent.; No. 36, Argentine Fund, 28 days, 78 per cent.; No. 37, Missouri Kansas, 14 days, 115 per cent.; No. 38, Suez, 18 days, 70 per cent.; No. 39, Chatham, 15 days, 70 per cent.; No. 40, Canadian Pacific, 5 days, 120 per cent.

4. Copy, and display in correct form, the following:—

Philharmonic Society, Eighty-first Season, 1893.—Concert in St. James' Hall.—Programme:—Overture, "Leonora" (No. 3), Beethoven; Air, "Divinités du Styx" (Alceste), Miss Esther Palliser (Gluck); Symphony in A, Op. 90 (The Italian), (Mendelssohn); Concerto in E. Minor, Pianoforte and Orchestra, M. Sapellnikoff (Chopin); Air de la Jeune Fille (Paradis et la Piéri) Miss Esther Palliser (Schumann); Selection from Music to "Henry VIII." Overture, Intermezzo Funébre, Three Dances (Edward German). Tickets, 10s. 6d., 7s. 6d., 5s., 2s. 6d., and 1s., at Green and Sons, 534 New Bondstreet; all usual agents; and at the Hall at Jones' Ticket Office.

1875



5. Copy, and display in correct form, the following balance-sheet:—

First Schedule.—Revenue Account of the Wessex and General Life Assurance Association for the year ending 31st December, 1891:—

*Receipts.*

Amount of Funds at the beginning of the year 1891, £524,221 7s. 10d.; Premiums (after deduction of re-assurance premiums), £53,404 11s. 10d.; Interest and dividends, £22,067 10s. 9d.; Fines, fees, &c., £88 9s. 3d.; Rent, £60; Profits on sale of stock, £12,424 15s. 7d.; Cash bonus written off, £18 8s. 6d.; Total, £612,285.

*Payments.*

Claims under policies, including bonuses (after deduction of sums re-assured):—By death, £36,075 8s. 2d.; Endowments matured, £1,650; Total, £37,725 8s. 2d. Surrenders, £1,891 18s. 6d.; Annuities, £3,835 19s. 2d.; Commission, £2,938 18s. 10d.; Expenses of management, £6,595 12s. 1d.; Income tax, £403 18s. 2d.; Dividends to shareholders, £1,187 10s. 10d.; Agent's balance written off, £12 5s. 6d.; Total, £54,391 11s. 3d. Amount of funds at the end of the year 1891, £557, 893 12s. 6d.; Grand total, £612,285 3s. 9d.

6. Make a transcript of the accompanying document.

## SENIOR PUBLIC EXAMINATION.

DECEMBER, 1906.

## PASS EXAMINATION.

GREEK.—(PREPARED BOOKS.)  
FIRST PAPER.*The Board of Examiners.*

1. Translate the following passages into exact, but readable, English, and (in the margin) parse the words underlined—

(a) καὶ νῦν ἐκεῖνα μὲν θανόντ' ἀνέπτατο  
 ἐγὼ δὲ καὶ σὺ μέλλομεν θνήσκειν, γέρον  
 οἱ θ' Ἡράκλειοι παῖδες, οὓς ὑπὸ πτεροῖς  
 σφίζω νεοσσούς ὄρνις ὡς ὑφειμένη.  
 οἱ δ' εἰς ἔλεγχον ἄλλος ἄλλοθεν πίτνων,  
 ὧ μῆτερ, αὐδᾶ, ποῖ πατήρ ἄπεστι γῆς;  
 τί ἔρᾶ, πόθ' ἤξει; τῷ νέῳ δ' ἐσφαλμένοι  
 ζητοῦσι τὸν τεκόντ'· ἐγὼ δὲ διαφέρω  
 λόγοισι μυθεύουσα. θαυμάζων δ' ὅταν  
 πύλαι ψοφῶσι, πᾶς ἀνίστησιν πόδα,  
 ὡς πρὸς πατρῶν προσπεσούμενοι γόνυ.

- (b) ὦ γαῖα Κάδμου, καὶ γὰρ εἰς σ' ἀφίζομα  
 λόγους ὄνειδιστῆρος ἐνδατούμενος,  
 τοιαῦτ' ἀμύνεθ' Ἡρακλεῖ τέκνοισί τε;  
 ὅς εἷς Μινύαισι πᾶσι διὰ μάχης μολῶν  
 Θήβαις ἔθηκεν ὄμμ' ἐλεύθερον βλέπειν.  
 οὐδ' Ἑλλάδ' ἦνεσ', οὐδ' ἀνέξομαί ποτε  
 σιγῶν, κακίστην λαμβάνων εἰς παῖδ' ἐμόν,  
 ἦν χρῆν νεοσσοῖς τοῖσδε πῦρ λόγγχας ὄπλα  
 φέρουσαν ἐλθεῖν, ποντίων καθαρμάτων  
 χέρσου τ' ἀμοιβάς, ὧν ἐμόχθησεν χάριν.
- (c) ΛΥΚ. ἀλλ' εἶα, παῖδας καὶ δάμαρθ' Ἡρακλέους  
 ἔξω κέλευε τῶνδε φαίνεσθαι δόμων,  
 ἐφ' οἷς ὑπέστηγ' αὐτεπάγγελτοι θανεῖν.  
 ΑΜ. ἄναξ, διώκεις μ' ἀθλίως πεπραγότα  
 ὕβριν θ' ὑβρίζεις ἐπὶ θανοῦσι τοῖς ἐμοῖς·  
 ἂ χρῆν σε μετρίως, κεῖ κρατεῖς, σπουδῆν ἔχειν.  
 ἐπεὶ δ' ἀνάγκην προστίθης ἡμῖν θανεῖν,  
 στέργειν ἀνάγκη· δραστέον δ' ἂ σοὶ δοκεῖ.  
 ΛΥΚ. ποῦ δῆτα Μεγάρα; ποῦ τέκν' Ἄλκμήνης γόνου;  
 ΑΜ. δοκῶ μὲν αὐτήν, ὡς θύραθεν εἰκάσαι,  
 ΛΥΚ. τί χρῆμα δόξης τῆσδ' ἔχεις τεκμήριον;  
 ΑΜ. ἰκέτιν πρὸς ἀγνοῖς ἐστίας θάσσειν βάθροις  
 ΛΥΚ. ἀνόνητά γ' ἰκετεύουσιν, ἐκσῶσαι βίον.
- (d) τίνων δ' ἀμοιβὰς ὧν ὑπῆρξεν Ἡρακλεῖς  
 σώσας με νέρθεν, ἦλθον, εἴ τι δεῖ, γέρον,  
 ἦ χειρὸς ὑμᾶς τῆς ἐμῆς ἢ συμμάχων.  
 ἔα· τί νεκρῶν τῶνδε πληθύει πέδον;  
 οὐ πον λέλειμμαί καὶ νεωτέρων κακῶν  
 ὕστερος ἀφίγμαι; τίς τὰδ' ἔκτεινεν τέκνα;  
 τίνος γεγῶσαν τήνδ' ὀρῶ συνάορον;  
 οὐ γὰρ δορός γε παῖδες ἴστανται πέλας,  
 ἀλλ' ἄλλο τοί που καινὸν εὐρίσκω κακόν.

2. In the above passages explain the grammar of—  
in (a) αὐδᾶ, γῆς : in (b) Μινύαισι, ἦνεσ' (tense),  
ἀμοιβάς : in (c) ἐφ' οἷς, ἃ χρῆν, ἀνόνητα : in (d)  
ὑμᾶς, κακῶν, δορός.
3. Explain—Κυκλωπῖαν πόλιν—ἡ ἐπτάπυργος πόλις—  
θηροφόνος θεά—τὰ μυστῶν ὄργι' εὐτύχησ' ἰδῶν—  
τινάσσει κρᾶτα βαλβίδων ἀπο—ἐφοκίς.
4. Translate and explain the construction in—πράσσω  
δ' ἐγὼ τί λυπρόν, οὗ δακρυρροεῖς ;—γέμω κακῶν δῆ,  
κούκέτ' ἔσθ' ὄπου τεθῆ—τουτόν δ' ὅπως ἀριστα  
διαπεράσετε.
5. Give a brief account of Euripides, and of the con-  
ditions under which one of his dramas would be  
produced and performed.
6. State the scansion of a line of iambic dialogue,  
and scan the first three lines in passage 1 (a).
7. Translate, with parsing, as above—

(a) ἡλίκα μὲν οὖν τὰ γαθὰ ποριῇ λιθοξόος γενόμενος,  
αὕτη προεῖρηκεν· οὐδὲν γὰρ ὅτι μὴ ἐργάτης ἔση τῷ  
σώματι πονῶν κὰν τούτῳ τὴν ἅπασαν ἐλπίδα τοῦ βίου  
τεθειμένος, ἀφανὴς μὲν αὐτὸς ὢν, ὀλίγα καὶ ἀγεννῆ  
λαμβάνων, ταπεινὸς τὴν γνώμην, εὐτελής δὲ τὴν  
πρόοδον, οὔτε φίλοις ἐπιδικάσιμος οὔτε ἐχθροῖς  
φοβερὸς οὔτε τοῖς πολίταις ζηλωτός, ἀλλ' αὐτὸ  
μόνον ἐργάτης καὶ τῶν ἐκ τοῦ πολλοῦ δήμου εἷς,  
ἀεὶ τὸν προύχοντα ὑποπτήσσω καὶ τὸν λέγειν  
δυνάμενον θεραπεύων, λαγῶ βίον ζῶν καὶ τοῦ κρείτ-  
τονος ἔρμαιον ὢν· εἰ δὲ καὶ Φειδίας ἢ Πολύκλειτος  
γένοιο καὶ πολλὰ θαυμαστὰ ἐξεργάσαιο, τὴν μὲν  
τέχνην ἅπαντες ἐπαινέσονται, οὐκ ἔστι δὲ ὅστις τῶν  
ιδόντων, εἰ νοῦν ἔχοι, εὐζαίτ' ἂν ὁμοίος σοι γενέσθαι.

(b) καὶ μὴν οὐδ' εἶπεῖν ἔχοις ἂν κατὰ τὴν ἀξίαν, ὅπως ἐστὶ καταγέλαστα, ὧ Χάρων, καὶ μάλιστα αἱ ἄγαν σπουδαὶ αὐτῶν καὶ τὸ μεταξύ τῶν ἐλπίδων οἴχεσθαι ἀναρπάστους γιγνομένους ὑπὸ τοῦ βελτίστου θανάτου. ἄγγελοι δὲ καὶ ὑπῆρέται αὐτοῦ μάλα πολλοί, ὡς ὄρᾱς, ἠπίαλοι καὶ πυρετοὶ καὶ φθόαι καὶ περιπνευμονίαι καὶ ξίφη καὶ ληστήρια καὶ κῶνεια καὶ δικασταὶ καὶ τύραννοι. καὶ τούτων οὐδὲν ὅλως αὐτοὺς εἰσέρχεται, ἔστ' ἂν εὖ πράττωσιν, ὅταν δὲ σφαλῶσι, πολὺ τὸ ὀτοτοῖ καὶ αἰαῖ καὶ οἶμοι.

(c) ὄρων δὲ πολλοὺς οὐκ ἔρωτι φιλοσοφίας ἐχομένους, ἀλλὰ δόξης μόνον τῆς ἀπὸ τοῦ πράγματος ἐφιεμένους, καὶ τὰ μὲν πρόχειρα ταῦτα καὶ δημόσια καὶ ὅποσα παντὶ μιμεῖσθαι ῥᾶδιον εὖ μάλα ἰοικότας ἀγαθοῖς ἀνδράσι, τὸ γένειον λέγω καὶ τὸ βᾶδισμα καὶ τὴν ἀναβολὴν, ἐπὶ δὲ τοῦ βίου καὶ τῶν πραγμάτων ἀντιφθεγγομένους τῷ σχήματι καὶ τὰναντία ὑμῖν ἐπιτηδεύοντας καὶ διαφθείροντας τὸ ἀξίωμα τῆς ὑποσχέσεως, ἠγανάκτουν, καὶ τὸ πρᾶγμα ὅμοιον ἐδόκει μοι καθάπερ εἶ τις ὑποκριτῆς τραγωδίας μαλθακὸς αὐτὸς ὢν καὶ γυναικίας Ἀχιλλέα ἢ Θησέα ἢ καὶ τὸν Ἡρακλέα ὑποκρίνοιτο αὐτὸν μῆτε βαδίζων μῆτε φθεγγόμενος ἡρωϊκόν, ἀλλὰ θρυπτόμενος ὑπὸ τηλικούτῳ προσωπεῖω, ὃν οὐδ' ἂν ἡ Ἑλένη ποτὲ ἢ Πολυξένη ἀνάσχοιντο πέρα τοῦ μετρίου αὐταῖς προσεικότα, οὐχ ὅπως ὁ Ἡρακλῆς ὁ καλλίνικος.

8. In the above passages explain the grammar of—  
 in (a) οὐδὲν ὅτι μὴ, τὴν γνώμην, αὐτὸ μόνον : in  
 (c) τὰ πρόχειρα ταῦτα, ἡρωϊκόν, οὐχ ὅπως.
9. In what chief respects is the Greek of Lucian not strictly that of Attic prose? Explain how he came to write in Greek.



10. Explain—βάνουσοι τέχνηαι—προεδρία—ὡςπερ τὴν Νιόβην ἀκούομεν, ἐπεκήγει—ὧ Κυλλήνιε—ἐρήμην ἠλίσκεσθε—εὐεργέτης ἀναγεγράφη—σοφιστής—τὰς εὐθύνας ὑποσχών—πολλὰς Ὀλυμπιάδας—μνᾶς Ἀττικῆς—ἔγχει τῷ ἀπολογουμένῳ—ὀρθὴν τιάναν ἔχων—οἱ ἐκ τοῦ περιπάτου—ἐς τὸ πρυτανεῖον καλεσάτω.
11. Draw a rough diagram of Athens to illustrate the words ἡ δὲ ἡδὴ που ἀφίξεται ἐπανιούσα ἐξ Ἀκαδημείας ὡς περιπατήσῃ καὶ ἐν τῇ Ποικίλῃ, and to shew the position of the Acropolis, the Areopagus, and τὸ Πελασγικόν.
12. Who were Pheidias, Aeschines, Thamyras, Chrysippus?

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## LATIN.

### FIRST PAPER.

#### *The Board of Examiners.*

1. Translate, with short marginal notes—
- (a) Hannibal, Capua recepta, quum iterum Neapolitanorum animos partim spe, partim metu nequicquam tentasset, in agrum Nolanum exercitum traducit, ut non hostiliter statim, quia non desperabat voluntariam deditionem, ita, si morarentur spem, nihil eorum, quae pati aut timere possent, praetermissurus. Senatus, ac maxime primores eius, in societate Romana cum fide perstare; plebs novarum, ut solet, rerum atque Hannibalis tota esse metumque agrorum

populationis et patienda in obsidione multa gravia indignaque proponere animo; neque auctores defectionis deerant. Itaque ubi senatum metus cepit, si propalam tenderent, resisti multitudini concitatae non posse, secunda simulando dilationem mali inveniunt.

- (b) Quae si paria essent, ut quondam fuissent, tamen expertis, quam grave Romanum imperium sociis, quanta indulgentia Hannibalis etiam in captivos omnes Italici nominis fuisset, Punicam Romanae societatem atque amicitiam praecipuam esse. Si ambo consules cum suis exercitibus ad Nolam essent, tamen non magis pares Hannibali futuros, quam ad Cannas fuissent, nedum praetor unus cum paucis et novis militibus Nolam tutari possit. Ipsorum quam Hannibalis *magis* interesse, capta an tradita Nola poteretur; potiturum enim, ut Capua Nuceriaque potitus esset; sed quid inter Capuae ac Nuceriae fortunam interesset, ipsos prope in medio sitos Nolanos scire.

Turn into Oratio Recta from Ipsorum quam . . . to the end.

- (c) Omnium denique in illum odia civium ardebant desiderio mei, quem qui tum interemisset, non de impunitate eius sed de praemiis cogitaretur. Tamen se Milo continuit et P. Clodium in iudicium bis, ad vim numquam vocavit. Quid? privato Milone et reo ad populum, accusante P. Clodio, quum in Cn. Pompeium pro Milone dicentem impetus factus est, quae tum non modo occasio sed etiam causa illius opprimendi fuit? Nuper vero, quum M. Antonius summam spem salutis bonis omnibus attulisset gravissimamque adulescens nobilissimus rei publicae partem

fortissime suscepisset atque illam beluam, iudicii laqueos declinantem, iam irretitam teneret, qui locus, quod tempus illud, di immortales, fuit! Quum se ille fugiens in scalarum tenebras abdidisset, magnum Miloni fuit conficere illam pestem nulla sua invidia, Antonii vero maxima gloria.

- (d) auro repensus scilicet acrior  
 miles redibit. flagitio additis  
 damnum : neque amissos colores  
 lana refert medicata fuco,  
 nec vera virtus, cum semel excidit,  
 curat reponi deterioribus.  
 si pugnat extricata densis  
 cerva plagis, erit ille fortis,  
 qui perfidis se credidit hostibus,  
 et Marte Poenos proteret altero,  
 qui lora restrictis lacertis  
 sensit iners timuitque mortem.  
 hic, unde vitam sumeret inscius,  
 pacem duello miscuit. o pudor!  
 o magna Karthago, probrosis  
 altior Italiae ruinis!

- (e) sic et Europe niveum doloso  
 credidit tauro latus et scatentem  
 beluis pontum mediasque fraudes  
 palluit audax.

nuper in pratis studiosa florum et  
 debitae Nymphis opifex coronae  
 nocte sublustri nihil astra praeter  
 moras vidit et undas.

timere ihi canities pulsus melioribus annis  
 maxime at, antiquas miscueratque comas,  
 fide perstans eos ortus Pisaea vinctus oliva  
 atque Hannibale decies praemia victor eques,

cum maris Euxini positos ad laeva Tomitas  
 quaerere me laesi principis ira iubet.  
 causa meae cunctis nimium quoque nota ruinae  
 indicio non est testificanda meo.  
 quid referam comitumque nefas famulosque  
 nocentes?  
 ipsa multa tuli non leviora fuga.  
 indignata malis mens est succumbere, seque  
 praestitit invictam, viribus usa suis;  
 oblitusque mei ductaeque per otia vitae  
 insolita cepi temporis arma manu.  
 totque tuli casus pelago terraque, quot inter  
 occultum stellae conspicuumque polum.

2. Translate, with notes—

- (a) Aetas parentum peior avis tulit  
 nos nequiores.
- (b) Da lunae propere novae.
- (c) Abstineto irarum calidaeque rixae.
- (d) Et qua pauper aquae Daunus agrestium  
 regnavit populorum.
- (e) Duae legiones urbanae alteri consuli, qui in  
 locum L. Postumii suffectus esset, decretae  
 sunt.
- (f) Iliturgi obsidione liberato, ad Intibili oppug-  
 nandum Punici exercitus traducti, suppletis  
 copiis ex provincia, ut quae maxime omnium,  
 belli avida, modo praeda aut merces esset, et  
 tum iuventute abundante.

3. Translate, and explain allusions in—

- (a) Utque malae matris crimen deponat, hirundo  
 sub trabibus cunas tectaue parva facit.

- (b) nec procul hinc nymp̄ha est, quae, dum fugit  
Elidis amnem,  
tecta sub aequorea nunc quoque currit aqua.
4. Draw a rough map to indicate the positions of Capua, Mount Tifata, the Volturnus, Casilinum, Nola, Cumae, Nuceria.
  5. What was there unusual in the constitution of the court before which Cicero defended Milo, or in the other circumstances of the trial? Is the speech you have been studying the one Cicero actually delivered?
  6. Give concise accounts, with approximate dates, of the lives of Ovid and Horace.
  7. Explain—*medix tuticus, connubium, qui spolia ex hoste fixa domi haberent, decurrere milites cogebat, haud facile litari haruspices respondebant, opima spolia, hic dies campi, sine aulaeis et ostro, duodecim tabulae, imagines.*

## GREEK.

## SECOND PAPER.

*The Board of Examiners.*

1. Translate into Greek—

My name is Folly, and men speak ill of me. But what hurt does it do me, even if I am abused by all the world? As soon as I began to speak to this assembly, the faces of all present put on (*ἐνδύεσθαι*) a new pleasure. As many of you as I behold around me seem to me,

like Homer's gods, to be drunk (*μεθύειν*) with nectar, whereas, before, ye sat as gloomy (*σκυθρωπός*) as if ye had come from an oracle or a doctor. And as, when the sun begins to show his light, or when, after a sharp (*ὄξύς*) winter, the spring appears once more, all things immediately regain (*ἀνακτάομαι*) a kind of youth; in like manner, by but beholding me, ye have got a smiling countenance instead of a gloomy one.

## 2. Translate into good English—

(a) εἶδέ μ' ἐν πολλῷ στρατῷ  
 δακρυρροοῦντα, καί με προσβλέψας καλεῖ·  
 “ὦ παῖ, πρόσελθε, μὴ φύγῃς τοῦμὸν κακόν,  
 μηδ' εἰ σε χρὴ θανόντι συνθανεῖν ἐμοί·  
 ἀλλ' ἄρον ἔξω, καὶ μάλιστα μὲν μέθεις  
 ἐνταῦθ' ὅπου με μή τις ὄψεται βροτῶν·  
 εἰ δ' οἴκτον ἴσχεις, ἀλλά μ' ἔκ γε τῆσδε γῆς  
 πόρθμευσον ὡς τάχιστα, μηδ' αὐτοῦ θάνω.”  
 τοσαῦτ' ἐπισκήψαντος, ἐν μέσῳ σκάφει  
 θέντες σφε πρὸς γῆν τήνδ' ἐκέλευμεν μόλις  
 βρυχώμενον σπασμοῖσι· καὶ νιν αὐτίκα  
 ἢ ζῶντ' ἐσόψεσθ' ἢ τεθνηκότ' ἀπίως.

(b) εἰάν ἐπερωτῶσιν ὑμᾶς οἱ νεώτεροι πρὸς ποῖον  
 χρὴ παράδειγμα αὐτοὺς τὸν βίον ποιῆσθαι, τί  
 κρινεῖτε; εὖ γὰρ ἴστε, ὅτι οὐχ αἱ παλαιστραὶ οὐδὲ  
 τὰ διδασκαλεῖα οὐδ' ἡ μουσικὴ μόνον παιδεύει τοὺς  
 νεωτέρους, ἀλλὰ πολὺ μᾶλλον τὰ δημόσια κηρύγ-  
 ματα. κηρύττεται ἐν τῷ θεάτρῳ, ὅτι στεφανοῦνται  
 τὶς ἀρετῆς ἕνεκα καὶ εὐνοίας, καίπερ τῷ ὄντι  
 κακὸς ὢν τῷ βίῳ καὶ βδελυρὸς· ὁ δέ γε νεώτερος  
 ταῦτ' ἰδὼν διαφθείρεται. δίκην τὶς δέδωκε ποιηρὸς,  
 ὥσπερ Κτησιφῶν· οἱ δέ γε ἄλλοι πεπαιδευνται.  
 ψηφισάμενος τὶς τὰναντία τῶν καλῶν καὶ δικαίων,

ἐπαυελθῶν οἴκαδε παιδεύει τὸν υἱόν· ὁ δὲ γε εἰκότως οὐ πείθεται. ὡς οὐ μὴ μόνον κρίνοντες, ἀλλὰ καὶ φυλαττόμενοι, τὴν ψῆφον φέρετε, ὥστε ἀπολογία ἔχειν τοῖς ἐπερησομένοις ὑμᾶς, τί ἐδικάζετε. εὖ γὰρ ἴστε, ὦ Ἀθηναῖοι, ὅτι τοιαύτη δόξει ἡ πόλις εἶναι, ὁποῖός τις ἂν ἦ ὁ κηρυττόμενος.

[ἐπισκήπτειν = bid, βρυχᾶσθαι = bellow, κηρυττόμενος = praised by proclamation.]

3. Give a very succinct account (with dates and an outline map) of the chief events of both the first and second attempts of Persia upon Greece.
4. State in chronological order the chief successes and reverses of the Athenians in the Peloponnesian war.
5. What do you know of Draco, Harmodius, Epaminondas, and of the *Philippics* of Demosthenes?

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## LATIN.

### SECOND PAPER.

#### *The Board of Examiners.*

1. Translate into Latin—

There was nothing now to be done but to name a dictator. The only man worthy to fill the post was Lucius Quinctius Cincinnatus, a noble patrician, who had long served his country in peace and war, as senator and consul, and was then living quietly at home, cultivating his small estate with his own hands. Now,

when the messengers of the senate came to Cincinnatus to announce to him that he was nominated dictator, they found him ploughing, and he had taken off his garments, for the heat was great. Therefore, he first asked his wife to bring him his toga, that he might receive the message of the senate in a becoming manner. And when he had heard their errand, he went with them into the town, accepted the dictatorship, and chose for the master of the horse, Lucius Tarquinius, a noble but poor patrician. Then having ordered that all the courts of justice should be closed and all common business suspended till the danger was over, he summoned all who could bear arms to meet in the evening in the field of Mars.

## 2. Translate—

Ubi haec fremere militem in castris consul sensit, contione advocata, "Quemadmodum" inquit "in Alcido res gesta sit, arbitror vos, milites, audisse. Qualem liberi populi exercitum decuit esse, talis fuit; consilio collegae, virtute militum victoria parta est. Quod ad me attinet, id consilii animique habiturus sum, quod vos mihi feceritis. Et trahi bellum salubriter et mature perfici potest. Si trahendum est, ego, ut in dies spes virtusque vestra crescat, eadem qua institui, disciplina efficiam; si iam satis animi est decernique placet, agite, clamorem, qualem in acie sublaturi estis, tollite hic indicem voluntatis virtutisque vestrae." Postquam ingenti alacritate clamor est sublatus, quod bene vertat, gesturum se illis morem posteroque die in aciem deducturum affirmat. Reliquum diei apparandis armis consumptum est. Postero



die simul instrui Romanam aciem Sabini videre, et ipsi, iam pridem avidi certaminis, procedunt. Proelium fuit, quale inter fidentes sibimet ambo exercitus, veteris perpetuaeque alterum gloriae, alterum nuper nova victoria elatum.

3. Translate—

Aeneas celsa in puppi, iam certus eundi, carpebat somnos rebus iam rite paratis. Huic se forma dei vultu redeuntis eodem obtulit in somnis rursusque ita visa monere est, omnia Mercurio similis, vocemque coloremque et crines flavos et membra decora iuventa :  
 “ Nate dea, potes hoc sub casu ducere somnos, nec quae te circum stent deinde pericula cernis, demens, nec zephyros audis spirare secundos ? Illa dolos dirumque nefas in pectore versat, certa mori, variosque irarum concitat aestus. Non fugis hinc praeceps, dum praecipitare potestas ?  
 Iam mare turbari trabibus saevasque videbis collucere faces, iam fervere litora flammis, si te his attigerit terris Aurora morantem. Eia age, rumpe moras. Varium et mutabile semper femina.” Sic fatus nocti se immiscuit atrae.

4. With what events in Roman History are the following places connected—the Allia, the Pass of Caudium, Heraclea, Cynoscephalæ, Numantia?
5. Give a short account of the political career of Pompey.
6. Construct four conditional sentences of different kinds, using the subjunctive in three of them. Then convert them into Oratio Obliqua after a past tense.

## ENGLISH.

## PASS AND HONOURS PAPER.

## FIRST PAPER.

*The Board of Examiners.*

1. State from what author and work each of the following extracts is taken. Explain them fully, giving as much of the context as is necessary to make their meaning clear:—
  - (a) Then to come in spite of sorrow,  
And at my window bid good morrow.
  - (b) For when hard-hearted Interest first began  
To poison earth, Astræa left the plain.
  - (c) Perchance I may return with others there  
When I have purged my guilt.
  - (d) The lord of irony,—that master-spell  
Which stung his foes to wrath.
  - (e) To those who mock you gone to Pluto's reign,  
There with sad ghosts to pine, and shadows  
dun.
  
2. Explain the following allusions:—(a) learned Poussin; (b) his half-regained Eurydice; (c) as jocular as a merry-andrew; (d) the Ionian father of the rest; (e) the Ausonian king; (f) Tryphiodorus the Lipogrammatist; (g) I would deliver them after Plato's manner; (h) by some Draconic clause.

3. Describe briefly the incidents by which, in *Rasselas*, Johnson illustrates his view of (a) the pastoral life, (b) the danger of prosperity, and (c) the comparative value of society and solitude.
4. State precisely what is meant by the word *allegory*; and illustrate your statement by reference to one of the prescribed selections.
5. Explain the meaning of the following words as used by
  - (a) *Addison* : pulvillio, conceit, nice ;
  - (b) *Thomson* : bale, sweltry, fain ;
  - (c) *Irving* : anatomy, rigadoon ;
  - (d) *Shakespeare* : breff, rivage, fet, gull, gleeck, indirectly, peevish.
6. Explain the meaning of the following passages, naming the speaker in each case :—
  - (a) Let him be punished, sovereign, lest example Breed, by his sufferance, more of such a kind.
  - (b) For he hath stolen a pax, and hanged must a' be.
  - (c) To-morrow the king himself will be a clipper.
  - (d) Big Mars seems bankrupt in their beggar'd host  
And faintly through a rusty beaver peeps.
  - (e) Haply a woman's voice may do some good,  
When articles too nicely urged be stood on.
7. Describe *briefly* the character of Henry V. as conceived by Shakespeare, illustrating your description by quotations wherever possible.

8. In what connection does Bacon refer to the following persons? State concisely what you know about each:—Sejanus, Ravailac, Timotheus the Athenian, Gaston de Foix, Albert Durer, Gregory the Great, Timoleon.
9. (a) “The changes and vicissitudes in war are many, but chiefly in three things.” What are the three things?
- (b) “Honour hath three things in it.” What are they?
- (c) Three classes of men “have an over-early ripeness in their years, which fadeth betimes.” To what three classes does Bacon refer?
10. Indicate the source, and explain the meaning of the following:—
- (a) He that plots to be the only figure amongst cyphers is the decay of an whole age.
- (b) And oes, or spangs, as they are of no great cost, so they are of most glory.
- (c) Certainly there be whose fortunes are like Homer’s verses.
- (d) No youth can be comely but by pardon.
- (e) It is commonly seen, that men once placed take in with the contrary faction to that by which they enter.
-

## ENGLISH.

## SECOND PAPER.

*The Board of Examiners.*

1. Write an essay on *either* "The Farmer's Life," or "Australian Defence."
  2. "Many words, harmless once, have assumed a harmful as their secondary meaning." Give six examples of this.
  3. What do you know about the history of each of the following words?—dunce, dahlia, mob, cosmopolite, sacrament, derrick, silhouette, alligator, paraffin.
  4. "Occasionally a name will embody and give permanence to an error." Give a few instances.
  5. What is meant by the "desynonymizing" process? Illustrate your answer by an example.
-

## BRITISH HISTORY.

*The Board of Examiners.*

1. Sketch the history of England, from the death of Alfred to the death of Edgar.
2. How did the rule of Henry the Second help towards the making of a united English nation?
3. What were the leading causes which promoted the growth of Towns in England?
4. Give a short account of the history of Scotland and of Ireland during the reign of Elizabeth.
5. Give an account of the principal subjects or controversy between James the First and his Parliaments.
6. What is meant by the Emancipation of the Press? Trace briefly the steps by which the Emancipation of the Press was accomplished in England.
7. What were the ideas of George the Third as to the powers which should be possessed and exercised by a British King?
8. What is meant by the Domestic System of Industry? Contrast it with the system which took its place.
9. (a) Trace briefly the history of British settlement in New Zealand.  
(b) When, and in what circumstances, was the Colony of South Australia founded?

## FRENCH.

## FIRST PAPER.

*The Board of Examiners.*

Candidates must satisfy the examiners in EACH part of the paper.

## A.

## TRADUCTION.

## 1. Traduisez en anglais idiomatique :

(a) Les premiers hommes, n'ayant que les montagnes pour asiles contre les inondations, chassés souvent de ces mêmes asiles par le feu des volcans, tremblants sur une terre qui tremblait sous leurs pieds, nus d'esprit et de corps, exposés aux injures de tous les éléments, victimes de la fureur des animaux féroces, dont ils ne pouvaient éviter de devenir la proie ; tous également pénétrés du sentiment commun d'une terreur funeste, tous également pressés par la nécessité, n'ont-ils pas très promptement cherché à se réunir, d'abord pour se défendre par le nombre, ensuite pour s'aider et travailler de concert à se faire un domicile et des armes ?

—BUFFON.

(b) Les peuples les plus éclairés, se ressaisissant du droit de disposer eux-mêmes de leur sang et de leurs richesses apprendront peu à peu à regarder la guerre comme le fléau le plus funeste, comme le plus grand des crimes. Ils sauront qu'ils ne peuvent devenir conquérants sans

perdre leur liberté . . . . qu'ils doivent chercher la sûreté et non la puissance. Peu à peu les préjugés commerciaux se dissiperont; un faux intérêt mercantile perdra l'affreux pouvoir d'ensanglanter la terre et de ruiner les nations sous prétexte de les enrichir. . . . Les guerres entre les peuples, comme les assassinats, seront au nombre de ces atrocités extraordinaires qui humilient et révoltent la nature, qui impriment un long opprobre sur le pays, sur le siècle dont les annales ont été souillées.

— CONDORCET.

- (c) Les pluies avaient enfin cessé, et le printemps se faisait tout à coup. Nous étions au mois de février : tous les amandiers étaient en fleurs, et les prés se remplissaient de jonquilles embaumées. C'était sauf la couleur du ciel et la vivacité des tons du paysage, la seule différence que l'œil pût trouver entre les deux saisons; car les arbres de cette région sont vivaces pour la plupart. Ceux qui poussent de bonne heure n'ont pas à subir les coups de la gelée : les gazons conservent toute leur fraîcheur et les fleurs n'ont besoin que d'une matinée de soleil pour mettre le nez au vent. Lorsque notre jardin avait un demi-pied de neige, la bourrasque balançait sur nos berceaux treillagés, de jolies petites roses grimpantes, qui, pour être un peu pâles, n'en paraissaient pas moins de fort bonne humeur.

— G. SAND.

- (d) J'ai voulu ce matin te rapporter des roses ;  
 Mais j'en avais tant pris dans mes ceintures  
 closes,  
 Que les nœuds trop serrés n'ont pu les contenir.



Les nœuds ont éclaté ; les roses envolées,  
 Dans le vent, à la mer s'en sont toutes allées ;  
 Elles ont suivi l'eau pour ne plus revenir.

La vague en a paru rouge et comme enflammée ;  
 Ce soir ma robe encore en est toute embaumée.  
 Respires-en sur moi l'odorant souvenir.

—MME. DESBORDES-VALMORE.

## B.

### VERSION ET GRAMMAIRE.

#### 2. Traduisez en français :

The first time we meet the French peasant, is about the end of the twelfth century. Who can forget the sombre figure that makes rapid strides (*s'avancer rapidement*) across the pretty scene of Aucassin and Nicolette? Aucassin on his courser, dreamy and lost in thought, goes riding towards the greenwood to find his true love Nicolette. At the edge of the forest he passes the little herdboys, sitting on their mantles on the grass, as they break bread at noon by the fountain's edge. These are mere children. It is far later, when the sun is sinking, while the tears fall down the cheeks of Aucassin at the thought of his poor lost love still unfound, that he meets the real French peasant.

#### 3. Traduisez :

- (a) He had cut his finger.  
 She looked at him.  
 The boy never came.  
 We do not doubt that you speak the truth.  
 Old men, women, children, all were killed.

- (b) Construisez quatre phrases montrant le mode à employer après les conjonctions suivantes : *de peur que, aussitôt que, jusqu'à ce que, après que, depuis que.*
- (c) Donnez tout l'impératif et l'imparfait du subjonctif des verbes—*se laver; ne pas courir; tenir.*
- (d) Traduisez :
- I saw some children wandering in the wood.  
In Africa there are many wandering tribes:  
Which countries have you visited?  
The clothes I gave you to mend.

## 4. Traduisez :

It is past 3 o'clock. Is it?  
They do nothing but go in and out.  
Are you going in for the honours examination?  
Did you call? Yes, I did.  
Did you not call? Yes, I did.  
We waited for four hours.  
Has she not put her hat on?

## 5. Traduisez en anglais les mots suivants en italique et montrez la différence de signification produite par l'accent—

*Cru* and *crû*, *la tache* and *la tâche*, *jeune* and *le jeûne*, *mal* and *mâle*, *pécher* et *pêcher*, *récréer* et *recréer*, *réformer* et *réformer*, *reprouver* et *réprouver*.

## FRENCH.

## PASS AND HONOURS PAPER.

## SECOND PAPER.

*Time : One hour and a half.*

*The Board of Examiners.*

**Candidates must satisfy the Examiners in EACH Part of the Paper.**

*C.—Histoire de la Littérature and Histoire de France.*

(Questions 1 and 2 are to be answered in English.)

1. Dites très brièvement qui étaient *Montaigne, Villon, Malherbe, Victor Hugo*. A quelles branches de la littérature appartiennent-ils ? Citez quelques-uns de leurs ouvrages et donnez les faits principaux de la vie de ces auteurs et les dates qui s'y rapportent.
  2. Qu'entend-on par l'expression *Siècle de Louis XIV.* et en quoi ce siècle est-il si remarquable au point de vue de l'histoire et de la littérature ?
- 
3. Candidates for Pass should write in French an essay of not less than 250 words on ONE, and candidates for Honours on TWO, of the following subjects.
    - (a) Ce qu'on entend par *Langue d'oc* et *Langue d'oïl*.

- (b) *Chanson de Roland* et son importance dans l'épopée française.
- (c) *Corneille* et la tragédie classique française.
- (d) Traits caractéristiques et principaux écrivains du *mouvement romantique* au XIXe. Siècle en France.
- 

## GERMAN.

### FIRST PAPER.

#### *The Board of Examiners.*

Candidates must satisfy the Examiners in **EACH** part of the paper.

#### A.—TRANSLATION.

#### 1. Translate into English—

Auf der ganzen weiten Erde war wohl sonst kein anmutigeres Land zu finden als das kleine Fürstentum, worin sich das alles begab, was ich zu erzählen eben im Begriff stehe. Von einem hohen Gebirge umschlossen, glich das Ländchen mit seinen grünen, duftenden Wäldern, mit seinen blumen-besäeten Wiesen, mit seinen rauschenden Strömen und lustig plätschernden Springquellen, zumal da es gar keine Städte, sondern nur freundliche Dörfer und hin und wieder einzeln-stehende Paläste darin gab, einem wunderbar herrlichen Garten, in welchem die Bewohner wie zu ihrer Lust wandelten, frei von jeder drückenden Bürde des Lebens. Jeder wusste, dass Fürst Demetrius das Land beherrschte; niemand merkte indessen das mindeste

von der Regierung, und alle waren wohl damit zufrieden. Personen, welche die volle Freiheit in allem ihrem Tun, eine schöne Gegend, ein mildes Klima liebten, konnten ihren Aufenthalt gar nicht besser wählen als in dem kleinen Fürstentum.

2. Translate into English—

Die Frau trat aus dem Hause, eine saubere (*neat*) Gestalt, gefolgt von einem krausköpfigen Knaben, der beim Anblick der Fremden schnell seine Finger in den Mund steckte und sich hinter der Schürze der Mutter verbarg. Karl fragte nach dem Mann. "Er kann Ihren Wagen vom Felde sehen, er wird sogleich hier sein," sagte die errötende Frau. Sie bat die Herren in die Stube zu treten und stäubte mit ihrer Schürze eilig zwei Holzstühle ab. Es war ein kleines Zimmer, die Wände weiss, die Möbel mit roter Farbe angestrichen, aber sauber gewaschen, im Ofen brodelte (*simmered*) der Kaffeetopf, in der Ecke tickte die Wanduhr, und auf einen kleinen Holzgestelle (*bracket*) standen zwei gemalte Porzellanfiguren und einige Tassen, darunter wohl ein Dutzend Bücher. Es war der erste behagliche Raum, den sie auf dem Gute gefunden hatten.

3. Translate into English—

- (a) Das Alter ist ein höflicher Mann,  
 Einmal über's andre klopft er an,  
 Aber nun sagt Niemand: "Herein!"  
 Und vor der Türe will er nicht sein.  
 Da klinkt er auf (*turns the handle*), tritt ein  
 so schnell,  
 Und nun heisst's, er sei ein grober Gesell.

- (b) Aus einer grossen Gesellschaft heraus  
 Ging einst ein stiller Gelehrter zu Haus.  
 Man fragte: "Wie seid Ihr zufrieden gewesen?"  
 "Wären's Bücher," sagt er, "ich würd' sie  
 nicht lesen."

#### B.—COMPOSITION AND GRAMMAR.

#### 4. Translate into German—

One day an English tourist was overtaken by a thunderstorm. Perishing with cold he arrived at a country-inn, but there were so many people there already that he could not get near the fire to warm himself. "Take a dish with four dozen oysters (*Auster* f.), some bread and cheese, and a glass of ale to my horse," he said to the landlord. "To your horse, Sir? Do you think he would like that?" "Do as I tell you and you will see." The landlord shakes his head, but obeys. Curious to see a horse that eats oysters, everybody leaves the room and accompanies him to the stables. In the meantime (*inzwischen*) the traveller chooses the most comfortable seat at the fire. "Sir," said the landlord, returning—"It is just as I thought it would be; your horse will not touch the supper you ordered for him." "Very well, then I will take it myself," said the guest; "give him some oats and let me have the oysters."

5. Give, with the definite article, the genitive singular and the nominative plural of—*Fürstentum*, *Begriff*, *Gebirge*, *Fürst*, *Gegend*, *Klima*, *Gestalt*, *Wagen*, *Mund*, *Feld*, *Ofen*, *Topf*, *Uhr*, *Raum*, *Gut*.

6. Give the imperative (three forms, corresponding to the three forms of address: *du, ihr, Sie*) and the past participle, of *zuschliessen, wissen, treten, sich entfernen*.
7. Translate into German—
- (a) *Your house is much higher than ours. Which of you has taken my pencil? I haven't. I haven't either. Which of the two brothers do you prefer? I don't like either of them. Everybody knows that.*
- (b) *I am tired of waiting for them. He is leaving to-day for Berlin. The sailing of the vessel has been postponed. Arriving at the door we found it locked. I heard him playing upstairs.*
- (c) *He opened his book in order to learn his lesson. I have looked for him without finding him. We might go for a walk, if it were not raining. The farther one travels northward, the colder it gets.*
8. Give the German for—*library, bookcase, railway station, pin, to press, to print, veil, match-box, painful, fur, to row, modesty, conceit, pious.*
-

## GERMAN.

PASS AND HONOURS PAPER.

## SECOND PAPER.

*Time : One hour and a half.**The Board of Examiners.*

**Candidates must satisfy the Examiners in EACH part of the paper.**

C.—DEUTSCHE GESCHICHTE UND  
LITTERATURGESCHICHTE.

(Questions 1 and 2 are to be answered in English.)

1. State briefly what you know of *Gustav Freytag*, *Hans Sachs*, *Wieland*, *Uhland*.
2. Give a short account, with dates, of—(a) *the Hohenstaufen*; (b) *the Hohenzollern*, indicating the part these two families have played in German history.
3. Candidates for Honours should write an essay of not less than 250 words each on *two* of the following subjects, candidates for a *Pass one* such essay:—
  - (a) Der Minnegesang.
  - (b) Goethe und Schiller als Freunde.
  - (c) "Minna von Barnhelm."
  - (d) Die deutsche Litteratur seit dem Tode Goethes.



## CHEMISTRY.

• *The Board of Examiners.*

## PASS AND FIRST HONOURS PAPER.

*Candidates should write equations, where possible, as well as verbal descriptions of chemical reactions.*

1. Describe the process of purification of a soluble salt by recrystallization. Illustrate by reference to some particular instance, and shew how the removal of the impurities may be tested analytically.
2. Shew how the atomic theory, as developed by Dalton and Gay-Lussac, was amplified and corrected by Avogadro's hypothesis.
3. What is the average composition of the atmosphere? The air of a room of 600 cubic metres capacity was found to contain 0.1 per cent. of carbon dioxide by volume; what weight of barium hydroxide would be required to absorb this amount of carbon dioxide?  
[Given that  $H = 1.01$ ,  $C = 12$ ,  $Ba = 137.4$ ;  
Temp. =  $14^{\circ} C.$ , Bar. = 768 mm.]
4. Describe the action of hydrochloric acid (in aqueous solution) on sodium thiosulphate, manganese dioxide, silver nitrate, nitric acid and zinc.
5. How is aluminium commercially extracted from its ores?
6. Describe the manufacture of bleaching powder and its more important properties.
7. What are the chief homologous series of hydrocarbons, and how are they related to each other?

## PHYSICS.

*The Board of Examiners.*

1. Obtain an expression for the time of vibration of a conical pendulum in terms of its length, inclination, and the acceleration due to gravity.

Find correct to the nearest millimetre the length of the so-called "Seconds' Pendulum" in Melbourne ( $g = 979.9$ ).

2. State the Laws of Limiting Friction, and define Coefficient of Friction. Describe an experimental method of determining this coefficient, and explain why it cannot be deduced from less than two experiments made with the ordinary apparatus.

3. Give the theory of the Diving Bell.

The pressure of the air inside an immersed cylindrical Diving Bell, 8 feet high, is just great enough to keep the water out; if the bell sink 30 feet deeper the water rises 3 feet inside it. Find the original depth of the bell's mouth.

4. Describe the experiments you would make and give the calculations necessary for determining the true coefficient of expansion of alcohol, supposing you knew that of mercury.
5. Describe and give the theory of one method of measuring the latent heat of steam, applying *all* necessary corrections.

6. Describe the construction of Daniell's hygrometer, and explain fully how you would use it to determine the relative humidity of the air.
7. A horizontal magnet, of pole strength 5 c.g.s. units is 60 centimetres long; find by scale and compasses the direction and magnitude of the magnetic force at a point 20 centimetres above the magnet's north pole.
8. State the definition of unit quantity of electricity, and explain why this particular unit was adopted.  
Describe any experimental method of comparing the quantities of electricity on two small conductors.
9. Give a short account of Faraday's experiments on electro-magnetic induction. State and explain the law deduced from these experiments by Lenz.

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## ANATOMY AND PHYSIOLOGY.

*The Board of Examiners.*

**FIVE** questions only to be attempted.

1. What is meant by the term enzyme? Name the enzymes found in the alimentary tract of a mammal, and state briefly their actions.

2. What muscular mechanisms are concerned with respiration in man? What conditions may bring about increased rate of breathing?
  3. Describe, with the aid of drawings, the circulatory system of a fish. In what respects is the circulatory system of a mammal superior to that of a fish?
  4. Enumerate the connective tissues of the body, and describe one of them with the aid of diagrams.
  5. How would you distinguish between the anterior (ventral) and the posterior (dorsal) part of an excised portion of mammalian spinal cord?
  6. In what manner is excretion of urine dependent upon changes in blood pressure?
- 

## GEOGRAPHY.

### *The Board of Examiners.*

1. Draw an outline map of Asia; name and mark on it the positions of six of each of the following:—  
Mountain ranges, rivers, towns, islands.
2. A heavy ball is freely suspended by a wire 100 feet long from the roof of a building, and is set swinging.  
State and explain what is observed if the experiment is continuously watched for six hours.

3. Explain the principles of Mercator's and of conical projection as applied to the construction of maps, and discuss the advantages and disadvantages of each.
4. Describe the method of government of Canada, its principal products, and the trade routes from Canada to Melbourne and London respectively.
5. Describe and account for the appearance of an earthquake record from a seismometer, and mention the most important causes to which earthquakes are commonly attributed.
6. Name and describe the modes of origin of the chief types of plains.
7. Account for the importance of the following places :—Singapore, Astrakhan, Buda-Pest, Milan, Honolulu.

## ALGEBRA.

*The Board of Examiners.*

1. State and prove the remainder theorem.

Resolve into factors

$$a^2(b^3 - c^3) + b^2(c^3 - a^3) + c^2(a^3 - b^3).$$

2. Simplify

$$\begin{aligned} & \frac{(a+x)(a+y)}{a(a-b)(a-c)} \\ + & \frac{(b+x)(b+y)}{b(b-c)(b-a)} \\ + & \frac{(c+x)(c+y)}{c(c-a)(c-b)}. \end{aligned}$$

3. Shew that any rational proper fraction  $A/PQ$  where  $P, Q$  have no common factor can be expressed in the form  $P'/P + Q'/Q$  where  $P'/P, Q'/Q$  are proper fractions.

Express  $x^3/(x^4 + x^2 + 1)$  as the sum of two proper fractions.

4. Shew how to solve the simultaneous equations

$$ax^2 + bxy + cy^2 = d,$$

$$a'x^2 + b'xy + c'y^2 = d'.$$

Find the condition that two of the solutions may be identical, and, in that case, state explicitly all the solutions.

5. Shew that a ratio, whose terms are positive, is made more nearly equal to unity by adding the same quantity to each of its terms.

In  $a$  years a father will be  $m$  times as old as his son, and  $a$  years ago he was  $n$  times as old as his son. Find their present ages.

6. If  $a/a' = b/b' = c/c'$  then each of these ratios is equal to

$$\frac{la + mb + nc}{la' + mb' + nc'}.$$

If

$$(b - c)x + (c - a)y + (a - b)z = 0,$$

$$a(b - c)x^2 + b(c - a)y^2 + c(a - b)z^2 = 0,$$

find  $x : y : z$ .

7. Define  $a^m$  when  $m$  is fractional or negative, and for expressions so defined, prove that—

$$a^m a^n = a^{m+n}.$$

Simplify—

$$\frac{(yz)^{m+n} (zx)^{n+l} (xy)^{l+m}}{x^l y^m z^n}.$$

8. Define a logarithm, and state and prove the rules for finding the logarithms of a product, quotient, and power.

Find the number of digits in  $2^{63}$ , having given  $\log_{10} 2 = 0.301030$ .

9. State and prove the formula for the number of combinations of  $n$  different things  $r$  at a time.

In how many ways can 8 crews, each of 8 men, be chosen from 64 men?

10. State and prove the binomial theorem for a positive integral exponent.

If  $b_0, b_1, b_2, \dots, b_n$  are in arithmetical progression, and

$$(1+x)^n = a_0 + a_1x + \dots + a_nx^n,$$

prove that

$$\begin{aligned} a_0b_0 + a_1b_1 + \dots + a_nb_n \\ = 2^{n-1}(b_0 + b_n). \end{aligned}$$

## GEOMETRY.

*The Board of Examiners*

1. Describe a circle about a given triangle.

An isosceles triangle has its vertical angle equal to the exterior angle of an equilateral triangle. Prove that the radius of its circum-circle is equal to one of the equal sides of the triangle.

2.  $P$  is any point on the arc  $APB$ . Show that the bisector of the angle  $APB$  passes through a fixed point, and that the bisector of its supplementary angle passes through another fixed point.
3. If a quadrilateral have its opposite angles supplementary a circle may be described about it.

Four circles,  $A, B, C, D$ , are such that  $A$  touches  $D$  and  $B$ ,  $B$  touches  $A$  and  $C$ ,  $C$  touches  $B$  and  $D$ , and  $D$  touches  $C$  and  $A$ . Prove that the four points of contact are concyclic.

4. Tangents  $OA, OB$  are drawn from an external point to a circle.  $PQ$  is any chord through the middle point of  $AB$ . Show that the line joining  $O$  to the centre bisects the angle  $POQ$ .
5. Define similar polygons, and prove that triangles which are equiangular to one another are similar.



6. If the exterior vertical angle of a triangle be bisected by a straight line which cuts the base, the square on the bisector is equal to the difference between the rectangle contained by the segments of the base and that contained by the sides of the triangle.
7. If a straight line be at right angles to each of two straight lines at their point of intersection, it is perpendicular to the plane in which they lie.

$AB$  and  $BC$  are two straight lines at right angles, and  $AP$  is a straight line at right angles to the plane  $ABC$ . Prove that if  $PB$  be joined it will be at right angles to  $BC$ .

8. If any two straight lines be cut by parallel planes they are cut proportionally.
9. In a parabola, prove that—
- (a) If the tangent at  $P$  meet the directrix in  $Z$ ,  $PZ$  subtends a right angle at the focus.
- (b) The subnormal is constant.

## TRIGONOMETRY.

*The Board of Examiners.*

1. Prove that 
$$\frac{\cot A - \operatorname{cosec} A + 1}{\cot A + \operatorname{cosec} A - 1} = \frac{\sin A}{1 + \cos A}$$

Verify the identity when  $\sin A = \frac{1}{3}$ ,  $A$  being an acute angle.

2. Define the trigonometrical ratios of an angle of any magnitude, and express the sine, cosine, and tangent of  $180 - A$ ,  $180 + A$ , and  $- A$ , in terms of the trigonometrical ratios of  $A$ .

3. Find an expression for all angles having the same tangent as  $\alpha$ .

Solve completely the equation

$$\tan \theta + \cos \theta = \sec \theta.$$

4. Prove the formula for  $\sin (A + B)$  in terms of sines and cosines of  $A$  and  $B$ , when  $A$  and  $B$  are positive angles, and  $A + B$  less than  $90^\circ$ .

If  $\sin A = \frac{1}{2}$ , and  $\cos B = \frac{1}{\sqrt{2}}$ , find the values of  $\sin (A - B)$ .

5. Shew that

$$\begin{aligned} & \sin (y - z) + \sin (z - x) + \sin (x - y) \\ &= -4 \sin \frac{y - z}{2} \sin \frac{z - x}{2} \sin \frac{x - y}{2} \end{aligned}$$

6. If  $A + B + C = 180^\circ$ , prove that

$$\begin{aligned} & \frac{\cot B + \cot C}{\tan B + \tan C} + \frac{\cot C + \cot A}{\tan C + \tan A} \\ &+ \frac{\cot A + \cot B}{\tan A + \tan B} = 1. \end{aligned}$$

7. Prove that in any triangle

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}.$$

Also prove that

$$a^3 \sin (B - C) + b^3 \sin (C - A) + c^3 \sin (A - B) = 0.$$

8. Shew how to solve a triangle having given two sides and the included angle.

If  $a = \sqrt{3} + 1$ ,  $b = 2$ ,  $C = 30^\circ$ , solve the triangle.

9. If  $a = 19.22$ ,  $b = 23.04$ ,  $A = 35^\circ 12'$ , find  $B$  and  $C$ , having given

$$\log 1.922 = 0.28375$$

$$\log 2.304 = 0.36247$$

$$L \sin 35^\circ 12' = 9.76075$$

$$L \sin 43^\circ 42' = 9.83940$$

$$\text{diff for } 1' = 13$$

10. Shew how to find the height of an inaccessible tree.

A vertical tower stands on a slope inclined to the horizontal at an angle of  $15^\circ$ . At the foot of the slope the tower subtends an angle of  $15^\circ$ . On walking 200 feet up the slope it is found to subtend an angle of  $60^\circ$ . Find the height of the tower to the nearest tenth of a foot.

## BOTANY.

*The Board of Examiners.*

*[Illustrate your answers with figures wherever possible.  
Five Questions only to be attempted.]*

1. What is meant by a cambium? Where do cambiums occur? Describe a typical cambium cell.
2. Give an account of the life history of a Moss, paying special attention to the origin of the sporophyte.
3. Describe experiments to shew the influence of light and darkness upon the growth and shape of seedlings.
4. What is meant by geotropic irritability? How does the geotropic irritability of a stem differ from that of a root, and how would you proceed to determine whether an organ was positively or negatively geotropic?
5. Explain fully how the wood of a Conifer differs from that of a Dicotyledon, and explain why the rings in the wood do not always give the age of the tree exactly.
6. What are stomata, where do they occur, and what is their structure and function?

## DRAWING.

PASS AND HONOURS PAPER.

## 1. PRACTICAL GEOMETRY.

*Time allowed : One hour and a half.**The Board of Examiners.*

## INSTRUCTIONS TO THE CANDIDATE.

You are to attempt only five questions; one of these must be either question No. 7 or No. 9.

Put the number of the question beside each answer.

Results must be obtained by construction, and must not be result of trial or guessing.

All construction lines must be allowed to remain.

Parallel and perpendicular lines may be drawn by means of the straight edge and set square.

Neat and accurate workmanship is expected.

H.P. = Horizontal Co-ordinate Plane.

V.P. = Vertical Co-ordinate Plane.

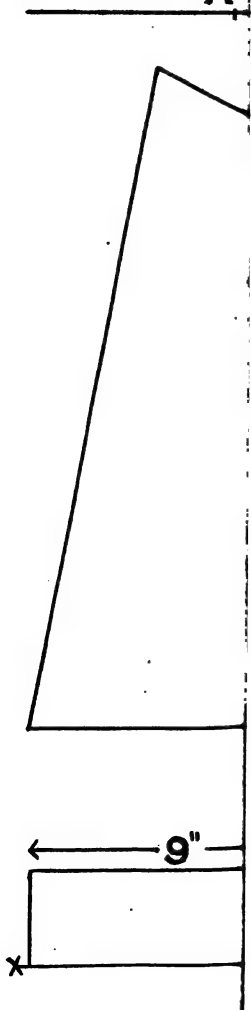
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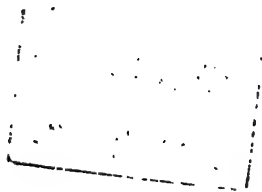
 QUESTIONS.

1. A scalene triangle has a base  $2''$  long, a vertical angle of  $30^\circ$ , and an altitude of  $1\frac{1}{2}''$ . Construct the triangle. —[15 marks.]
2. Given three lines  $AB\ 4\frac{1}{2}''$ ,  $CD\ 3\frac{3}{4}''$ , and  $EF\ 2\frac{1}{2}''$ . Find a fourth line  $GH$ , such that  $AB : CD :: EF : GH$ . —[10 marks.]

C

A





3. A semi-circle and a straight line are given in diagram Q3. Describe a circle which shall touch the semi-circle and the straight line in point *A* tangentially. —[20 marks.]
4. Describe an ellipse, the major axis of which is  $3\frac{1}{2}$ " long and the distance between the foci  $2\frac{1}{4}$ ". At any point in the curve other than the ends of the axes draw a normal.  
Use any method in describing the ellipse except that of the thread and pins. —[20 marks.]
5. Construct a square equal in area to the quadrilateral figure given in diagram Q5. —[15 marks.]
6. Find graphically the sum of  $(9 + 3 + 7 - 5 + 2)$  unit = .25". —[10 marks.]
7. The plan and elevation of a cube and square pyramid are given in diagram Q7. Draw a second elevation when the horizontal edges of the solids make angles of  $30^\circ$  with the V.P. —[25 marks.]
8. The side and end elevations of an ordinary building brick are given in diagram Q8.  
Make an isometric projection of the brick employing the natural scale of  $\frac{1}{2}$ " to 1'. —[30 marks.]
9. A right cone, axis 3", diameter of base 2", stands on the H.P. on its apex, with its axis vertical. Draw the plan and elevation of the cone, and draw the plan of the section made by a plane perpendicular to the V.P., making an angle of  $45^\circ$  with the H.P., and containing a diameter of the base of the solid. —[35 marks.]



## DRAWING

## PASS AND HONOURS PAPER.

## 2. DRAWING IN LIGHT AND SHADE.

*The Board of Examiners.*

*Time allowed : One hour.*

For this examination select either cast No. 141 or Cast No. 136 (or Ed. Dept. casts No. 13 or 16).

Place on a level with the Candidate's eyes, and in a good light, which should come from the left of the Candidate.

Not more than three Candidates should work from the same cast.

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Before the examination begins the following Instructions must be read to the Candidates:—

1. You are to make a shaded drawing of the cast in front of you, and to a slightly larger scale than the cast.
2. Your drawing may be executed in any medium you choose, such as lead pencil, chalk, charcoal, pen and ink, or water colour. A complete rendering of the cast is not expected, but the chief shades and shadows should be shown, and a portion should be finished.
3. One hour is allowed for the work

## DRAWING.

PASS AND HONOURS PAPER.

## 3. PERSPECTIVE.

*The Board of Examiners.**Time allowed: One hour and a half.*

1. The front and side elevations of a hanging book-case are given in the diagram on next page.

Give the perspective representation of the book-case when it hangs flat against a wall, the highest point being 6 feet above the ground, 2 ft. 6 in. into the picture, and 1 foot to the right of the spectator, the vertical surface of the wall vanishing towards the left at an angle of  $45^\circ$  with the picture.

Height of the eye above the ground, 4 feet.

Distance of the eye in front of the picture, 6 feet.

Scale,  $1\frac{1}{4}$  inches to 1 foot.

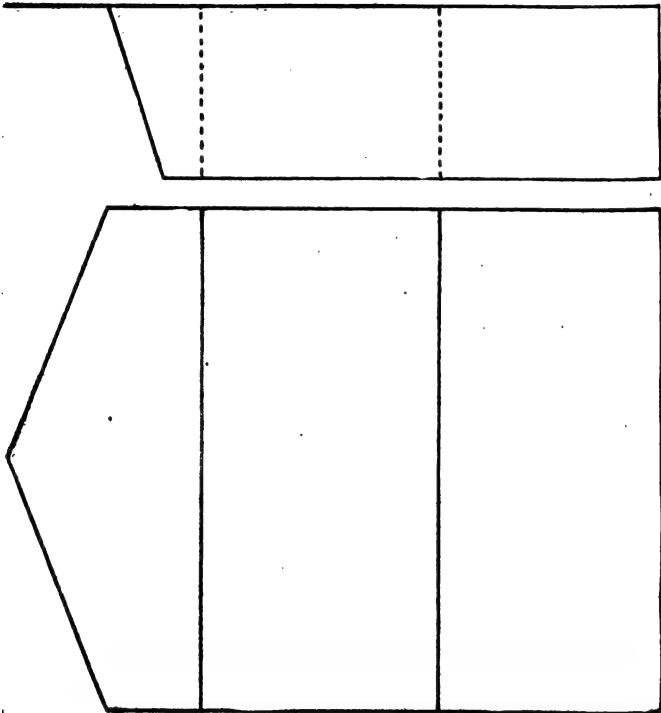
Dimensions may be taken directly from the diagram.

2. Height of eye, 5 feet.

Distance of eye in front of picture, 10 feet.

Scale,  $\frac{1}{2}$  inch to 1 foot.

A square sheet of tin of 3 feet sides stands upon the ground on one of its edges. The plane of the square is perpendicular to the ground, and makes an angle of  $60^\circ$  with the picture towards the right. The nearest point on the ground is 1 foot to the left and 1 foot into the picture.



Put the sheet of tin into perspective, and show the shade on and the shadow cast by it when the sun is in the plane of the picture, on the left of the spectator, and its rays make angles of  $45^{\circ}$  with the ground.

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## DRAWING.

PASS AND HONOURS PAPER.

### 4. DRAWING FROM MEMORY.

*Time allowed : Thirty minutes.*

#### INSTRUCTIONS TO THE CANDIDATE.

Fifteen minutes will be allowed for each drawing, and both sides of your drawing paper may be used.

Your drawings must be of fair size—full size, where possible—and they should not be over-elaborated.

You are to make a drawing in lead pencil, and from memory, of two of the following subjects:—

A wine glass.

A cup and saucer.

A cricket bat.

A mug.

A book, closed, and lying on its side.

A cigar box, with the lid raised into a vertical position.

## HONOUR EXAMINATION.

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### GREEK.—(TRANSLATION OF PREPARED BOOKS).

#### FIRST PAPER.

*The Board of Examiners.*

1. Translate, with brief notes upon any points which appear to require them—

- (a) ΛΥΚ. οὐκ οὖν τραφέντων τῶνδε τιμωροὺς ἔμοι  
 χρήζω λιπέσθαι τῶν δεδραμένων δίκην.  
 AM. τῷ τοῦ Διὸς μὲν Ζεὺς ἀμυνέτω μέρει  
 παιδός· τὸ δ' εἰς ἔμ', Ἡράκλεις, ἔμοι μέλει  
 λόγοισι τὴν τοῦδ' ἀμαθίαν ὑπὲρ σέθεν  
 δεῖξαι· κακῶς γάρ σ' οὐκ ἑατέον κλύειν.  
 πρῶτον μὲν οὖν τάρρητ', ἐν ἀρρήτοισι γὰρ  
 τὴν σὴν νομίζω δειλίαν, Ἡράκλεες,  
 σὺν μάρτυσιν θεοῖς δεῖ μ' ἀπαλλάξαι σέθεν.
- (b) τὸν ἱππευτὰν τ' Ἀμαζόνων στρατὸν  
 Μαιῶτιν ἀμφὶ πολυπόταμον  
 ἔβα δι' Εὐξείνου οἴδμα λίμνας,  
 τιν' οὐκ ἀφ' Ἑλλανίας  
 ἄγορον ἀλίσας φίλων,  
 κόρας Ἀρείας πέπλον  
 χρυσεόστολον μέτα,  
 ζωστῆρος ὀλεθρίους ἄγρας.

- (c) ἐγὼ δὲ νύμφας ἠκροθινιαζόμεν,  
 κήδη συνάπτουσ', ἔκ τ' Ἀθηναίων χθονὸς  
 Σπάρτης τε Θηβῶν θ', ὡς ἀνημμένοι κάλῃς  
 πρυμνησίοισι βίον ἔχουσ' εὐδαίμονα.  
 καὶ ταῦτα φροῦδα· μεταβαλοῦσα δ' ἡ τύχη  
 νύμφας μὲν ὑμῖν Κῆρας ἀντέδωκ' ἔχειν,  
 ἐμοὶ δὲ δάκρυα λουτρά· δύστηνος φρενῶν.  
 πατὴρ δὲ πατρὸς ἐστιᾶ γάμους ὄδε,  
 "Αἰδὴν νομίζων πενθερόν, κῆδος πικρόν.
- (d) εἰ δὲ θεοῖς ἦν ξύνεσις καὶ σοφία κατ' ἄνδρας,  
 δίδυμον ἂν ἦβαν ἔφερον  
 φανερόν χαρακτῆρ'  
 ἀρετᾶς ὅσοισιν  
 μέτα, κατθανόντες τ'  
 εἰς αὐγὰς πάλιν ἀλίου  
 δισσοὺς ἂν ἔβαν διαύλους,  
 ἂ δυσγένεια δ' ἀπλᾶν ἂν  
 εἶχε ζωᾶς βιοτάν,  
 καὶ τῷδ' ἦν τοὺς τε κακοὺς ἂν  
 γινῶναι καὶ τοὺς ἀγαθοὺς,  
 ἴσον ἅτ' ἐν νεφέλαισιν ἀ-  
 στρων ναύταις ἀριθμὸς πέλει.
- (e) ὁ δ' ἐξελίττων παῖδα κίονος κύκλω,  
 τόνρευμα δεινὸν ποδός, ἐναντίον σταθεῖς  
 βάλλει πρὸς ἦπαρ· ὕπτιος δὲ λαῖτους  
 ὀρθοστάτας ἔδενσεν ἐκπνέων βίον.

2. Describe a Greek sacrifice (with the Greek terms).
3. Give an exact explanation of the appearance of  $\bar{\alpha}$  for Attic  $\eta$  in dramatic lyrics.
4. Scan the first three lines of the first passage 1 (a).
5. Comment on—

(a) The forms—ἔβαν, ἄνωχθε, σταδιοδραμοῦμαι :

- (b) The grammar of—τὸ χρῆν νιν ἐξέσφζεν—τοῦ  
 χρεῶν μέτα—ἐγκαρτερήσω θάνατον—τιμᾶς δ' ἔχω  
 τύσδ', οὐκ ἀγασθῆναι φίλοις—ἤδη δ' ἐσῆλθέ μ', εἰ  
 παραιτησαίμεθα φνγάς :
- (c) The meaning of—προστρόπαιον αἶμα—Κυκλωπίαν  
 πόλιν—"Αἰδου βάκχος—ὑπογράφειν.
6. Translate verbatim, with any comment—
- (a) ὁ χρῆ γὰρ οὐδεὶς μὴ χρεῶν θήσει ποτέ.
- (b) πατήρ δέ νιν  
 θιγῶν κραταιᾶς χειρὸς ἐννέπει τάδε.
7. Translate, with notes as above—
- (a) τοὺς δὲ λόγους μακροτέρους οὐ παρὰ τὸ εἰωθὸς  
 μηκνουῦμεν, ἀλλ' ἐπιχώριον ὄν ἡμῖν, οὗ μὲν  
 βραχεῖς ἀρκῶσι μὴ πολλοῖς χρῆσθαι, πλείοσι δὲ  
 ἐν ᾧ ἂν καιρὸς ἢ διδάσκοντάς τι τῶν προὔργου  
 λόγοις τὸ δέον πρᾶσσειν.
- (b) νομίζομέν τε τὰς μεγάλας ἔχθρας μάλιστ' ἂν  
 διαλύεσθαι βεβαίως, οὐκ ἦν ἀνταμνυόμενός τις καὶ  
 ἐπικρατήσας τὰ πλέω τοῦ πολέμου κατ' ἀνάγκην  
 ὄρκους ἐγκαταλαμβάνων μὴ ἀπὸ τοῦ ἴσου ζυμβῆ,  
 ἀλλ' ἦν παρὸν τὸ αὐτὸ δρᾶσαι πρὸς τὸ ἐπιεικές  
 καὶ ἀρετῇ αὐτὸν νικήσας παρὰ ᾧ προσεδέχετο  
 μετρίως ξυναλλαγῇ.
- (c) καὶ τὸ μὲν πρὸς τοὺς Ἀθηναίους τοσοῦτον  
 ἀγαθὸν εὖ βουλευομένοις εὐρίσκεται· τὴν δὲ ὑπὸ  
 πάντων ὁμολογουμένην ἀριστον εἶναι εἰρήνην πῶς  
 οὐ χρῆ καὶ ἐν ἡμῖν αὐτοῖς ποιήσασθαι; ἢ δοκεῖτε,  
 εἰ τῷ τι ἔστιν ἀγαθὸν ἢ εἴ τῳ τὰ ἐναντία, οὐχ  
 ἡσυχία μᾶλλον ἢ πόλεμος τὸ μὲν παύσαι ἂν  
 ἑκατέρῳ, τὸ δὲ ξυνδιασώσαι, καὶ τὰς τιμᾶς καὶ  
 λαμπρότητας ἀκινδυνότερας ἔχειν τὴν εἰρήνην· ἄλλα  
 τε ὅσα ἐν μήκει λόγων ἂν τις διέλθοι, ὥσπερ καὶ  
 τοῦ πολεμεῖν;

- (d) καὶ ἅμα τῶν Εἰλώτων βουλομένοις ἦν ἐπὶ προφύσε ἐκπέμψαι, μὴ τι πρὸς τὰ παρόντα τῆς Πύλου ἐχομένης νεωτερίσωσιν· ἐπεὶ καὶ τότε ἔπραξαν φοβούμενοι αὐτῶν τὴν νεότητα καὶ τὸ πλῆθος·—αἰεὶ γὰρ τὰ πολλὰ Λακεδαιμονίοις πρὸς τοὺς Εἰλωτας τῆς φυλακῆς περὶ μάλιστα καθεισθῆκει—προεῖπον αὐτῶν ὅσοι ἀξιοῦσιν ἐν τοῖς πολεμίοις γεγενῆσθαι σφίσιν ἄριστοι, κρίνεσθαι, ὡς ἐλευθερώσοντες, πείραν ποιούμενοι καὶ ἡγούμενοι τούτους σφίσιν ὑπὸ φρονήματος, οἵπερ καὶ ἠξίωσαν πρῶτος ἕκαστος ἐλευθεροῦσθαι, μάλιστα ἂν καὶ ἐπιθέσθαι·
- (e) ὥστε ἤδη ἀμφοτέροις μὲν δοκοῦν ἀναχωρεῖν διὰ τὸ δέος αὐτῶν ὄντων ἀνθρώπων μαχίμων, κυρωθὲν δὲ οὐδὲν ἐκ τῆς διαφορᾶς ὀπηνίκα χρή ὀρμᾶσθαι, νυκτός τε ἐπιγενομένης, οἱ μὲν Μακεδόνες καὶ τὸ πλῆθος τῶν βαρβάρων εὐθύς φοβηθέντες, ὅπερ φιλεῖ μεγάλα στρατόπεδα, ἀσαφῶς ἐκπλήγνυσθαι, καὶ νομίσαντες πολλαπλασίους μὲν ἢ ἦλθον ἐπιέναι, ὅσον δὲ οὐπω παρῆναι, καταστάντες ἐς αἰφνίδιον φυγὴν ἐχώρου ἐπ' οἴκου.
8. What view do you take of the actuality of the speeches in Thucydides ?
9. What indications do you discover of the sense of justice or honour possessed by the Athenians and Spartans respectively ?
10. Draw a rough outline map, and place upon it—Pullene, Plataea, Cythera, Nisaea, Leucas, Camarina, Sphacteria, Rhegium, Tegea, Cenchrea, Thebes, Amphipolis.
11. Explain — ταξίαρχοι — Σπαρτιᾶται, Λακεδαιμόνιοι, περίοικοι—χοῖνιξ, κοτύλη—οἱ θαλάμιοι—περίπολοι—Θηβαῖοι καὶ οἱ ξύμμοροι—'Ακαμαντις ἐπρυτάνειεν, Νικιάδης ἐπεστάτει—τοῦ κώδωνος παρενεχθέντος.



12. Comment briefly on the grammar of—φυλασσομένους τῶν νεῶν—διαφθείρουσιν αὐτοὺς λαθόντες τὴν ἀπόβασιν—τὰς χεῖρας ἀνέσεισαν, δηλοῦντες προσίσθαι τὰ κεκηρυγμένα—δεῖξαι ὅτι, ὧν μὲν ἐφίενται, πρὸς τοὺς ἀμυνομένους ἐπιόντες κτάσθωσαν—κατὰ νότου αἰεὶ ἐμελλον αὐτοῖς ἢ χωρήσειαν οἱ πολέμοι ἔσεσθαι—προσῆρχοντο ὡς ἀθλητῆ.

13. Translate, with notes as above—

(a) κάτθαν' ὁμῶς ὁ τ' ἄτυμβος ἀνὴρ ὅς τ' ἔλλαχε  
τύμβου,

ἐν δὲ ἰῆ τιμῇ Ἴρος κρείων τ' Ἀγαμέμνων·

Θερσίτη δ' Ἴσος Θέτιδος παῖς ἠυκόμοιο.

πάντες δ' εἰσὶν ὁμῶς νεκύων ἀμενηνὰ κάρηνα,  
γυμνοὶ τε ξηροὶ τε κατ' ἀσφοδελὸν λειμῶνα.

(b) ΣΩΚ. σοὶ δὲ τί, Ἐμπεδόκλεις, δοκεῖ;

ΕΜΠ. ἐς τοὺς κρατῆρας ἐμπεσεῖν αὐτόν, ὡς  
μάθη μὴ λοιδορεῖσθαι τοῖς κρείττοσι.

ΠΛΑΤ. καὶ μὴν ἄριστον ἦν καθάπερ τινα  
Πενθέα ἢ Ὀρφέα

λακιστὸν ἐν πέτραισιν εὐρέσθαι μόρον,  
ἴν' ἂν καὶ τὸ μέρος αὐτοῦ ἕκαστος ἔχων ἀπηλ-  
λάττετο καὶ—

ΛΟΥΚ. μηδαμῶς· ἀλλὰ πρὸς ἱεσίου φείσασθέ  
μον.

ΣΩΚ. ἄραρεν· οὐκ ἂν ἀφεθείης ἔτι.

(c) ΠΛΑΤ. τοῦτ' ἐκεῖνο, ἐς πεδίον τὸν ἵππον, ὡς  
παρακρουσόμενος τοὺς δικαστὰς ἀπέλθης· φασὶ  
γοῦν ῥήτορά σε καὶ δικανικόν τινα εἶναι καὶ πανοῦ-  
ργον ἐν τοῖς λόγοις. τίνα δὲ καὶ δικαστὴν ἐθέλεις  
γενέσθαι, ὄντινα μὴ σὺ δωροδοκήσας, οἷα πολλὰ  
ποιεῖτε, ἄδικα πείσεις ὑπὲρ σοῦ ψηφίσασθαι;

ΛΟΥΚ. θαρρεῖτε τούτου γε ἔνεκα· οὐδένα τοιοῦτον  
δαιτητὴν ὑποπτον ἢ ἀμφίβολον ἀξιώσαιμ' ἂν γενέσ-  
θαι καὶ ὅστις ἀποδώσεται μοι τὴν ψῆφον.

(d) ΔΙΟΓ. καὶ αὐτός, ὃ φιλοσοφία, πάνυ ἔπαινῶ τὸν ἄνδρα καὶ ἀνατιθεμαι τὰ κατηγορούμενα καὶ φίλον ποιῶμαι αὐτὸν γενναῖον ὄντα.

ΦΙΑ. εὖ γε, ὃ Παρρησιάδῃ· ἀφίεμέν σε τῆς αἰτίας, καὶ ταῖς πάσαις κρατεῖς καὶ τὸ λοιπὸν ἴσθι ἡμέτερος ὢν.

ΠΑΡΡ. προσεκύνησα τήν γε πρώτην· μᾶλλον δὲ τραγικώτερον αὐτὸ ποιήσειν μοι δοκῶ· σεμνότερον γάρ.

14. Give a very succinct account of Lucian, his Greek, and his models.
15. Explain—ὁ τελώνης Αἰακός—ἡ προθεσμία—ἀδιάφορον ὁ πλοῦτος—σοὶ γὰρ τὸ νῦν ῥεῖ—περίδειπνον.
16. To what sects did the following belong—Chrysippus, Diogenes, Epicurus? State their chief tenets.

## LATIN.

### FIRST PAPER.

#### *The Board of Examiners.*

1. Translate, with notes :—

(a) Ego, si quis de pace consulat seu deferenda hostibus seu accipienda, habeo, quid sententiae dicam; si de iis, quae Mago postulat, refertis, nec victoribus mitti attinere puto, et frustrantibus nos falsa atque inani spe multo minus censeo mittenda esse.

- (b) Et de trecentis equitibus Campanis, qui in Sicilia cum fide stipendiis emeritis Romam venerant, latum ad populum, ut cives Romani essent; item ut municipes Cumani essent pridie, quam populus Campanus a populo Romano defecisset.
- (c) Nec te nec exercitum tuum norim, nisi, a quo tot acies Romanas fusas stratasque esse sciam, ei facile esse ducam opprimere populatores nostros vagos sine signis palatos, quo quemque trahit quamvis vana praedae spes.
- (d) Siciliam ac Sardiniam, quae ante bellum vectigales fuissent, vix praesides provinciarum exercitus alere; tributo sumptus suppeditari; [eum] ipsum tributum conferentium numerum tantis exercituum stragibus et ad Trasumennum lacum et ad Cannas imminutum; qui superessent pauci, si multiplici gravarentur stipendio, alia perituros peste. Itaque nisi fide staret res publica, opibus non staturam. Prodeundum in contionem Fulvio praetori esse, indicandas populo publicas necessitates cohortandosque, qui redempturis auxissent patrimonia, ut rei publicae, ex qua crevissent, tempus commodarent, conducerentque ea lege praebenda, quae ad exercitum Hispaniensem opus essent, ut quum pecunia in aerario esset, iis primis solveretur.
- (e) An vero obliti estis, iudices, recenti illo nuntio necis Clodianae, non modo inimicorum Milonis sermones et opiniones sed non nullorum etiam imperitorum? negabant eum Romam esse rediturum. Sive enim illud animo irato ac percito fecisset ut incensus odio trucidaret inimicum,

arbitrabantur eum tanti mortem P. Clodii putasse ut aequo animo patria careret, quum sanguine inimici explesset odium suum: sive etiam illius morte patriam liberare voluisset, non dubitaturum fortem virum quin, quum suo periculo salutem populo Romano attulisset, cederet aequo animo legibus, secum auferret gloriam sempiternam, nobis haec fruenda relinqueret quae ipse servasset.

(r) Negat enim negat ingratis civibus fecisse se quae fecerit; timidis et omnia circumspicientibus pericula non negat. Plebem et infimam multitudinem quae P. Clodio duce fortunis vestris imminabat, eam, quo tutior esset vestra vita, se fecisse commemorat ut non modo virtute flecteret, sed etiam tribus suis patrimonii deleniret; nec timet ne, quum plebem muneribus placarit, vos non conciliarit meritis in rem publicam singularibus. Senatus erga se benevolentiam temporibus his ipsis saepe esse perspectam; vestras vero et vestrorum ordinum occursationes studia sermones, quemcumque cursum fortuna dederit, secum se ablaturum esse dicit.

(g) desierat Ianus. nec longa silentia feci,  
 sed tetigi verbis ultima verba meis:  
 "quid volt palma sibi rugosaque carica," dixi  
 "et data sub niveo condita mella cado?"  
 "omen" ait "causa est, ut res sapor ille sequatur,  
 et peragat coeptum dulcis ut annus iter."  
 "dulcia cur dentur, video. stipis adice causam,  
 pars mihi de festo ne labet ulla tuo."  
 risit, et "O quam te fallunt tua saecula," dixit  
 "qui stipe mel sumpta dulcius esse putes!  
 vix ego Saturno quemquam regnante videbam,  
 cuius non animo dulcia lucra forent."

- (h) hac [arte] te merentem, Bacche pater, tuae  
 vexere tigres indocili iugum  
 collo trahentes; hac Quirinus  
 Martis equis Acheronta fugit,  
 gratum elocuta consiliantibus  
 Iunone divis : Ilium, Ilium  
 fatalis incestusque iudex  
 et mulier peregrina vertit  
 in pulverem, ex quo destituit deos  
 mercede pacta Laomedon, mihi  
 castaeque damnatum Minervae  
 cum populo et duce fraudulentum.
- (i) hic dies anno redeunte festus  
 corticem adstrictum pice dimovebit  
 amphorae fumum bibere institutae  
 consule Tullo.  
 sume, Maecenas, cyathos amici  
 sospitis centum et vigiles lucernas  
 perfer in lucem : procul omnis esto  
 clamor et ira.
- (j) rumpat et serpens iter institutum,  
 si per obliquum similis sagittae  
 terruit mannos : ego cui timebo  
 providus auspex,  
 antequam stantes repetat paludes  
 imbrium divina avis imminens,  
 oscinem corvum prece suscitabo  
 solis ab ortu.

2. Show how the last stanzas in (h) and (i) of the previous question scan. What are those metres called ?

3. Translate, with short grammatical notes—

- (a) Colligor ex ipso dominae placuisse sepulchro;  
 ora fuere mihi plus ave docta loqui.

- (b) Nec Mauris animum mitior anguibus.
- (c) Catus idem per apertum fugientes agitato  
grege cervos iaculari.
- (d)                               Segetis certa fides meae  
fulgentem imperio fertilis Africae  
fallit sorte beatior.
- (e) Cum famulis operum solutis.
- (f) Ibit insignem repetens Nearchum,  
grande certamen, tibi praeda cedat  
maior an illi.
- (g) Uxor invicti Iovis esse nescis.

4. Translate explaining allusions—

- (a) Poma negat regio, nec haberet Acontius, in quo  
scriberet hic dominae verba legenda suae.
- (b) Eque viris quondam pars tribus una fui.  
Curia restabat, clavi mensura coacta est.
- (c) Esset perpetuo sua quam vitabilis Ascra,  
ausa est agricolae Musa docere senis.

5. Explain—bigati, sub pellibus haberi, “minime sis cantherium in fossam,” desultor, obire facinoris locum tempusque, multam inrogare, antestari, de tenero ungui.

6. How does Livy differ from Cicero in the use of (a) the subjunctive mood, (b) the accusative case?

7. Give some account of the career of Clodius with special reference to his relations with Cicero and Milo.

8. "Corvino iubente promere languidiora vina."  
Who was this Corvinus thus referred to by Horace? In what way was he connected with Ovid?
9. Who were Pacuvius Calavius, Decius Magius, Q. Fabius Pictor, L. Bantius, M. Fabius Buteo, Hampsicora?

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GREEK.

SECOND PAPER.

*The Board of Examiners.*

1. Translate, with brief notes in the margin when you think them required—
- (a) οἶσθ' ὅτ' ἐσπούδαζες ἄρχειν Δαναΐδαις πρὸς Ἴλιον,  
ὡς ταπεινὸς ἦσθα πάσης δεξιᾶς προσθιγγάνων,  
καὶ θύρας ἔχων ἀκλήστους τῷ θέλοντι δημοτῶν,  
καὶ διδούς πρόσρησιν ἐξῆς πᾶσι, κεῖ μή τις θέλοι,  
τοῖς τρόποις ζητῶν πρίασθαι τὸ φιλότιμον ἐκ μέσου·  
κατ' ἐπεὶ κατέσχεσ' ἀρχὰς, μεταβαλὼν ἄλλους  
τρόπους  
τοῖς φίλοισιν οὐκέτ' ἦσθα τοῖς πρὶν ὡς πρόσθεν  
φίλος,  
δυσπρόσιτος, ἔσω τε κλήθρων σπάνιος. ἄνδρα δ'  
οὐ χρεὼν  
τὸν ἀγαθὸν πρᾶσσοντα μεγάλα τοὺς τρόπους  
μεθιστάναι,  
ἀλλὰ καὶ βέβαιον εἶναι τότε μάλιστα τοῖς φίλοις,  
ἠνίκ' ὠφελεῖν μάλιστα δυνατός ἐστιν εὐτυχῶν.

- (b) καὶ γὰρ αὕτη ἡ λίθος οὐ μόνον τοὺς δακτυλίους ἄγει τοὺς σιδηροῦς, ἀλλὰ καὶ δύναμιν ἐντίθησι τοῖς δακτυλίοις, ὥστ' αὐτὸ δύνασθαι ταῦτὸν τοῦτο ποιεῖν, ὅπερ ἡ λίθος, ἄλλους ἄγειν δακτυλίους, ὥστ' ἐνίοτε ὄρμαθὸς πάνυ μακρὸς δακτυλίων ἐξ ἀλλήλων ἤρηται· πᾶσι δὲ τούτοις ἐξ ἐκείνης τῆς λίθου ἡ δύναμις ἀνήρηται. οὕτω δὲ καὶ ἡ Μοῦσα ἐνθέους μὲν ποιεῖ, διὰ δὲ τῶν ἐνθέων τούτων ἄλλων ἐνθουσιαζόντων ὄρμαθὸς ἐξαρτᾶται. πάντες γὰρ οἳ τε τῶν ἐπῶν ποιηταὶ οἱ ἀγαθοὶ οὐκ ἐκ τέχνης ἀλλ' ἐνθεοὶ ὄντες πάντα ταῦτα τὰ καλὰ λέγουσι ποιήματα, καὶ ὥσπερ οἱ κορυβαντιῶντες οὐκ ἔμφρονες ὄντες ὄρχοῦνται, οὕτω καὶ οἱ μελοποιοὶ οὐκ ἔμφρονες ὄντες τὰ καλὰ μέλη ταῦτα ποιοῦσιν, ἀλλ' ἐπειδὴν ἐμβῶσιν εἰς τὴν ἁρμονίαν καὶ εἰς τὸν ῥυθμόν, βακχεύουσι, καὶ ὥσπερ αἱ βᾶκχαι ἀρύτονται ἐκ τῶν ποταμῶν μέλι καὶ γάλα μαινόμεναι, ἔμφρονες δὲ οὔσαι οὔ, τῶν μελοποιῶν ἡ ψυχὴ τοῦτο ἐργάζεται, ὅπερ αὐτοὶ λέγουσι.

## 2. Translate into Greek—

Do you remember that famous Grecian, who was so far mad that he would sit by himself whole days in the theatre laughing and clapping his hands, as if he had seen some tragedy acting, whereas in truth there was nothing presented; yet in other things a man reasonable enough, and so good a master to his servants, that if they had broken the seal of his most precious wine he would not have run mad for it? But at last, when by the care of his friends and by physic he was freed from his distemper and become his own man again, he thus expostulated with them. "Now, by Pollux, my friends, I am in a miserable condition, thanks to you. You have rather killed than saved me in thus forcing me from my



pleasure." And, indeed, I think they were the madder of the two that thought fit to look upon so pleasant a madness as an evil which must be got rid of by physic. In my judgment every man is the more happy in proportion as he is the more mad. See, therefore, that no one cures you under the delusion that he is doing you a service.

3. Write *very succinct* accounts of the following matters, giving chief dates and facts—

- (a) The political actions of Solon.
- (b) The confederacy of Delos.
- (c) Events connected with Naupactus, Chæro-  
nea, Artemisium, Deceleia, Arginusæ.
- (d) The functions of Boulê and Ecclesia.

4. Comment on the syntax in—

- (i) ἔραμαι οἴου σοῦ ἀνδρός.
- (ii) οὐ γέγονεν, οὐδὲ μὴ γένηται.
- (iii) ἀλλὰ μὴ οὐ τοῦτο χαλεπὸν ᾔ.
- (iv) ὀλίγου δεῖν ἀπέθανε.
- (v) ἀπώλεσαν αὐτὸν τὸ ἐπὶ σφᾶς εἶναι.

5. Turn into the normal Attic passive form—

ἀπεκτόνασιν αὐτόν—κακῶς με λέγει—ἐξέβαλες  
αὐτὸν ἐκ τῆς πόλεως—τεθήκαμεν τὸν νόμον.

## LATIN.

## SECOND PAPER.

*The Board of Examiners.*

## 1. Translate into Latin—

But before he would assemble them in arms, or urge them to any attempt which, if unfortunate, might in their present despondency prove fatal, he resolved to inspect himself the situation of the enemy, and to judge of the probability of success. For this purpose he entered their camp under the disguise of a harper and passed unsuspected through every quarter. He so entertained them with his music and facetious humours, that he met with a welcome reception and was even introduced to the tent of Guthrum, their prince, where he remained some days. He remarked the supine security of the Danes, their contempt of the English, their negligence in foraging and plundering, and their dissolute wasting of what they gained by rapine and violence. Encouraged by these favourable appearances, he secretly sent emissaries to the most considerable of his subjects, and summoned them to a rendezvous, attended by their warlike followers, at Brixton. The English, who had hoped to put an end to their calamities by servile submission, now found the insolence and rapine of the conqueror more intolerable than all past fatigues and dangers; and at the appointed day they joyfully resorted to their prince.

## 2. Translate—

Haec effatus equum in medios, moriturus et ipse,  
 concitat et Venulo adversum se turbidus infert,  
 dereptumque ab equo dextra complectitur hostem  
 et gremium ante suum multa vi concitus aufert.  
 Tollitur in caelum clamor, cunctique Latini  
 convertere oculos. Volat igneus aequore Tarchon  
 arma virumque ferens; tum summa ipsius ab  
 hasta

defringit ferrum et partes rimatur apertas,  
 qua vulnus letale ferat; contra ille repugnans  
 sustinet a iugulo dextram et vim viribus exit.

Utque volans alte raptum cum fulva draconem  
 fert aquila implicuitque pedes atque unguibus  
 haesit,

saucius at serpens sinuosa volumina versat  
 arrectisque horret squamis et sibilat ore,  
 arduus insurgens; illa haud minus urget  
 obunco

luctantem rostro, simul aethera verberat alis:  
 haud aliter praedam Tiburtum ex agmine  
 Tarchon  
 portat ovans.

## 3. Translate—

Tribuni reclamantibus consulibus refecti.  
 Patres quoque, ne quid cederent plebi, et ipsi L.  
 Quinctium consulem reficiebant. Nulla toto  
 anno vehementior actio consulis fuit. "Mirer"  
 inquit, "si vana vestra, patres conscripti,  
 auctoritas ad plebem est? Vos elevatis eam;  
 quippe, quia plebs senatus consultum continu-  
 andis magistratibus solvit, ipsi quoque solutum  
 vultis, ne temeritati multitudinis cedatis, tan-  
 quam id sit plus posse in civitate, plus levitatis

ac licentiae habere. Levius enim vaniusque profecto est sua decreta et consulta tollere quam aliorum. Imitamini, patres conscripti, turbam inconsultam, et, qui exemplo aliis esse debetis, aliorum exemplo peccate potius, quam alii vestro recte faciant, dum ego ne imiter tribunos nec me contra senatus consultum consulem renuntiari patiar. Te vero, C. Claudii, adhortor, ut et ipse populum Romanum hac licentia arceas et de hoc tibi persuadeas, me ita accepturum, ut non honorem meum a te impeditum, sed gloriam sprete honoris auctam invidiamque, quae ex continuato eo impenderet, levatam putem."

4. Show in tabular form the names and dates of the wars in which Rome was engaged—(a) between 350 and 250 B.C.; (b) between 200 and 150.
5. Give some account of the two Triumvirates.
6. Construct and translate sentences illustrating the use of *haud scio an*, *prae* (owing to), *erga*, *abhinc*, *quis* (any one), *quisquam*, *ecquis*, *quin* with the Indicative, and distinguish between *dum* with the Present Indicative and *dum* with the Imperfect Indicative.

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## ENGLISH.

### SECOND PAPER

#### *The Board of Examiners.*

1. Describe the four chief "Cycles of Romance." At what period were they popular in England?

2. By what Italian writers was Chaucer influenced? Mention the names of some of his poems written during his "Italian Period."
3. Describe the Elizabethan theatre.
4. Explain the following terms:—(a) blank verse; (b) sonnet; (c) Spenserian stanza.
5. Give a concise account of *one* work by each of the following:—Marlowe, Lyly, Dryden, Hume, Cowper, Shelley. Give in each case the (approximate) date of publication.
6. Explain Trench's statement that "Wamba, the Saxon jester in *Ivanhoe*, plays the philologer."
7. Give an account, in your own words, of the first day's proceedings at the Passage of Arms at Ashby.
8. Compare the lives and characters of Rowena and Rebecca.
9. Explain the following words as used by Tennyson:—Tinct, scaur, boon, rathe, tarriance, dole, soilure.
10. Who is referred to in each of the following passages?—
  - (a) . . . an old, dumb, myriad-wrinkled man.
  - (b) . . . I never saw his like: there lives  
No greater leader.
  - (c) A moral child without the craft to rule.
  - (d) . . . A good knight, but therewithal  
Sir Modred's brother, and the child of Lot,  
Nor often loyal to his word.
11. What was the chief addition made by Tennyson to the story of Elaine as told by Malory?

## BRITISH HISTORY.

*The Board of Examiners.*

1. Give an account of each of the following:—The Danelagh; The Salisbury Gemot; The Grand Remonstrance; The Humble Petition and Advice; The Seven Men of Moidart; The Holy Alliance.
2. Show the importance of the English wool trade in the Middle Ages.
3. Trace the influence of "The New Learning" in England to the close of the reign of Henry the Eighth.
4. What were the aims of the ecclesiastical policy of Elizabeth? What was her attitude towards the toleration of differences in religion?
5. Trace the leading causes of the downfall of the House of Stuart.
6. Show the importance of each of the following battles:—Camperdown; Cape St. Vincent; Navarino; The Nile; Quebec; Wandewash.
7. Trace the history of legislation regarding the Crown lands of any one of the Australian Colonies.
8. Give an account of the public career of Benjamin Disraeli.

## FRENCH.

## FIRST PAPER.

*The Board of Examiners.*

Candidates must satisfy the examiners in EACH part of the paper.

## A.

## TRADUCTION.

1. Traduisez en anglais idiomatique :

- (a) Boileau a dit que : “ Le français, né malin, créa le vaudeville.” Cette malice perçait déjà dans les *fabliaux* qui eurent tant de vogue en France, durant tout le XIII<sup>e</sup> Siècle.

Les *fabliaux* ou romans se distinguent déjà par des qualités toutes françaises ; le bon sens, la saillie, la méchanceté naïve, la bonhomie mordante. Dès cette époque reculée, la nation présente une alliance de qualités ou de défauts qui sembleraient devoir s'exclure : une raison éclairée, un cœur croyant, un esprit sceptique. Bien des légèretés—comme on les appelle—si souvent reprochées au peuple français, tiennent à cette réunion ancienne de contrastes qui étonnent, mais qui plaisent, et qui n'ont point été sans exercer une heureuse influence sur le développement de l'histoire.—BARRÈRE.

- (b) Il fallut que le maire, la commune de Paris, poussés, forcés par l'exemple et les prières des

autres villes, vissent demander à l'Assemblée une fédération générale. Il fallut que l'Assemblée, bon gré, mal gré l'accordât. On fit ce qu'on put du moins pour réduire le nombre de ceux qui voulaient venir. La chose fut décidée fort tard, de sorte que ceux qui venaient à pied des extrémités du royaume n'avaient guère moyen d'arriver à temps. La dépense fut à la charge des localités, obstacle peut-être insurmontable pour les pays plus pauvres.

Mais, dans un si grand mouvement, y avait-il des obstacles ? On se cotisa, comme on put ; comme on put, on habilla ceux qui faisaient le voyage ; plusieurs vinrent sans uniformes. L'hospitalité fut immense, admirable, sur toute la route ; on arrêtait, on se disputait les pèlerins de la grande fête. On les forçait de faire halte, de loger, manger, tout au moins boire au passage. Point d'étranger, point d'inconnu : tous parents. Gardes nationaux, soldats, marins ; tous allaient ensemble. Ces bandes qui traversaient les villages offraient un touchant spectacle. C'étaient les plus anciens de l'armée, de la marine qu'on appelait à Paris. Pauvres soldats tout courbés de la guerre de sept ans, sous-officiers en cheveux blancs, braves officiers de fortune, qui avaient percé le granit avec leur front, vieux pilotes usés à la mer, toutes ces ruines vivantes de l'ancien régime, avaient voulu pourtant venir. C'était leur jour, c'était leur fête. On vit au 14 juillet des marins de quatre-vingts ans qui marchèrent douze heures de suite ; ils avaient retrouvé leurs forces, ils se sentaient, au moment de la mort, participer à la jeunesse de la France, à l'éternité de la patrie.

—MICHELET.



- (c) D'où viens-tu?—Du pays de misère et de honte.

Qu'as-tu fait?—J'ai péché : je me sens avili.

Où vas-tu?—Je gravis le sentier qui remonte.

Que veux-tu?—Du travail. Qu'espères-tu?—

L'oubli.

Crois-tu qu'il est un Dieu, pauvre âme encore obscure?

Que ta bonté le prouve et j'y croirai demain.

Crois-tu que le regret peut laver la souillure?

Je n'en douterai plus si tu me tends la main.

—E. MANUEL.

## B.

### VERSION ET GRAMMAIRE.

#### 2. Traduisez en français :

- (a) But all this was sixty years ago. Nowadays the children are supposed to go, at least sometimes and when possible, to the nearest village school (for education is compulsory in France); the young men are obliged to serve their time in the regiment; the girls enter domestic service. And so difficult is it to find recruits for the woodman's free but rough and lonely life, that the lack of woodcutters is becoming a grave question among foresters in France.

When March is well out, and the trees are felled, when the wood is piled in stacks, the woodman consults the sky, and, on the first mild and growing morning, he begins to bark (écorcer) his oaks or at least such of them as are devoted to that tragic end. It is a nice and delicate business, which must be undertaken before the leaves are green.

(b) The Nile was deified by the old inhabitants. It was a god to the mass, and at least one of the manifestations of deity to the priestly (des prêtres) class. As it was the immediate cause of all they had, and all they hoped for, it was to them the good power, and the desert was the evil one.

3. Montrez au moyen d'exemples la préposition que l'on doit employer après chacun des verbes suivants ; *s'approcher, punir, jouer, triompher, ressembler, succéder, manquer, se moquer.*
4. Donnez d'autres noms liés par l'étymologie aux noms suivants : *le poirier, le cerisier, la banane, la pêche, le fruit, le prunier, la campagne, le village, le pays, le roi.*
5. Traduisez :

Less rich than formerly ; the least details ; prouder than ever ; all men are equal before the law ; they cast a glance at each other ; they do not agree ; do not trust her ; look at that large dog, it is his.

6. Corrigez les phrases suivantes et expliquez brièvement vos corrections :
 

L'assemblée, étant réuni, commencèrent leurs délibérations.

L'assemblée finie, chacun rentrèrent chez eux.

Il ne croit pas l'histoire qu'on viennent de raconter.

7. Complétez les phrases suivantes, en mettant en français et dans leurs propres modes ou temps, les verbes anglais suivants en italique :

J'ai peur qu' *to rain*.

Il l'a fait pour que vous *to be happy*.

Nous attendrons jusqu'à ce que tu *to come*.

Lorsqu' *il to arrive*, nous nous *to sit down to table*.

8. Traduisez :

The *next* meeting will take place *next* day in the *next* village.

Here is a *nice* child, who lives in a *nice* house, and who has taste for *nice* things.

According to the order of departure, they started in *good* order and in *good* time.

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## GERMAN.

### FIRST PAPER.

#### *The Board of Examiners.*

Candidates must satisfy the Examiners in **EACH** part of the Paper.

#### A.—TRANSLATION.

1. Translate into English—

Mein Grossvater hat mir öfters erzählt: sie waren nur ein kleiner Haufen Leute, kaum hundert an der Zahl; er selbst ein Junge von fünfzehn Jahren. Sechs Tage seien

sie herumgezogen, kreuz und quer, bis sich von fern auf einem blanken klaren See etwas Dunkles gezeiget, recht wie ein steinernes Wundergewächs anzusehen. Als aber einige von ihnen auf der schmalen Landzunge vordrangen, die dort wie eine Brücke hinüberführt über den See, da war es eine ganze Stadt mit gewaltigen Mauern, Zinnen und Türmen. Da erschrakten sie anfangs und meinten man käme übel an; sie lagen auch die ganze Nacht, wo es in einem fort regnete, unter den Felsen vor den Mauern. Nun es aber nach und nach tagte, kam sie beinahe noch ein ärgeres Grauen (*terror*) an. Es krächten keine Hähne, kein Wagen liess sich hören, kein Bäcker schlug den Laden auf, es stieg kein Rauch von den Dächern. Endlich traten sie sacht in die Wölbung der offenen Tore und sahen sich in den breiten Strassen um. Man vernahm keinen Laut als den eigenen Fusstritt und den Regen, der noch von den Dächern abtropfte. Nichts rührte sich in dem Innern der Häuser.

## 2. Translate into English—

Sie haben wohlgetan, dass Sie, um Deutsch zu lernen, zu uns herübergekommen sind, wo Sie nicht allein die Sprache schnell und leicht gewinnen, sondern auch die Elemente, worauf sie ruht, unsern Boden, Klima, Lebensart, Sitten, gesellschaftlichen Verkehr, Verfassung und dergleichen mit sich nach England nehmen. Und dann verdient es auch nicht allein unsere eigene Litteratur an sich, sondern es ist auch nicht zu leugnen, dass wenn Einer jetzt das Deutsche gut versteht, er viele andere Sprachen entbehren kann. Von der

französischen rede ich nicht, sie ist die Sprache des Umgangs und ganz besonders auf Reisen unentbehrlich, weil sie jeder versteht und man sich in allen Ländern mit ihr statt eines guten Dolmetschers (*interpreter*) aushelfen kann. Was aber die anderen anbetrifft, so können wir die vorzüglichsten Werke aller Nationen in so guten deutschen Uebersetzungen lesen, dass wir ohne ganz besondere Zwecke nicht Ursache haben, auf ihre mühsame Erlernung viel Zeit zu verwenden. Es liegt in der deutschen Natur, alles Ausländische in seiner Art zu würdigen, und dieses zusammen mit der grossen Fügsamkeit (*pliancy*) unsrer Sprache macht die deutschen Uebersetzungen durchaus treu und vollkommen.

#### B.—COMPOSITION AND GRAMMAR.

##### 3. Translate into German—

I was not surprised, when I ran down into the hall, to see that a brilliant June morning had succeeded to the tempest of the night; and to feel, through the open glass door, the breathing of a fresh and fragrant breeze. Nature must be glad when I was so happy. A beggar woman and her little boy, pale, ragged objects both, were coming up the walk, and I ran down and gave them all the money I happened to have in my purse, some three or four shillings; good or bad, they must partake of my delight. All around me the birds were chirping and singing, but nothing was so merry or so musical as my own rejoicing heart.

Fragrant=*duftend*; walk=*Pfad*; to chirp=*zitschern*.

## 4. Translate into German—

My first visit was to my friend, Major Ponto. The Major, in his little phaeton, was in waiting to take me up at the station. The vehicle certainly was not splendid, but such a carriage as would accommodate a plain man (as Ponto said he was) and a numerous family. We drove by beautiful fresh fields and green hedges, through a cheerful English landscape; the road was as smooth and trim as the way in a nobleman's park. Children, with cheeks as red as the apples in the orchards, curtsied to us at the cottage doors. Blue church spires rose here and there in the distance; and as the gardener's wife opened the white gate at the Major's little lodge, and we drove up to the house, my heart felt a joy which I thought it was impossible to experience in the smoky atmosphere of a town.

Phaeton = *Phaethon* m.; vehicle = *Gefährt*: to accommodate = *passen für*; to curtsy = *knicksen vor*; lodge = *Villa* f.; to experience = *empfinden*.

5. Give the first person singular of the present, imperfect, and perfect indicative of the following verbs occurring in Questions Nos. 1 and 2:—

*Verschlagen, ausgestorben, herumgezogen, vordringen, erschrecken, wohlgetan, entbehren, aushelfen, verwenden.*

6. Re-write the first two sentences of Question No. 2, turning them into "indirect speech" (from "*Sie haben*" to "*entbehren kann*"; thus: "*Ich sagte zu dem jungen Engländer, er hätte wohlgetan,*" &c.)

7. Translate the following sentences, and re-write them in German, changing the present tense of the verbs into the perfect:—

*Er kann nicht ausgehen; Ich möchte gern wissen, ob das wahr ist; sie darf nicht zu uns kommen; er muss abreisen; muss er das wirklich? Was soll aus ihm werden?*

8. Beantworten Sie auf deutsch die folgenden Fragen. (Die Antwort muss einen vollständigen Satz bilden; das Verbum darf nicht fehlen):

*Welches sind Ihre täglichen Mahlzeiten?*

*Woran erkennt man, dass es Frühling wird?*

*Was haben Sie alles auf der Schule gelernt?*

*Welche öffentlichen Gebäude findet man in jeder grösseren Stadt?*

*Nennen Sie fünf der Hauptstaaten Europas und die Namen der Völker, die darin wohnen.*

*Welche Beförderungsmittel (means of locomotion) kennen Sie?*

## CHEMISTRY.

*The Board of Examiners.*

SECOND HONOURS PAPER.

**Candidates should write equations, where possible, as well as verbal descriptions of Chemical reactions.**

1. How may the atomic weight of an element be determined, and what data are required?

2. Describe the preparation, chemical properties, and industrial and chemical uses of hydrogen peroxide and one of its metallic derivatives.
3. Describe one process of manufacturing soap, indicating the chief chemical reactions which occur. To what causes may the "hardness" of a water be due and what methods of overcoming the difficulty of obtaining a "lather" are available?
4. Shew how the physical properties of the halogens and the formation and stability of their hydrides illustrate the gradual transition of properties with increase of atomic weight.
5. What is meant by a reversible action? Discuss the precipitation of cadmium and zinc sulphides in acid and neutral solutions.

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## PHYSICS.

### *The Board of Examiners.*

1. Describe the construction, and give the mathematical theory of the constant volume air thermometer.  
Explain fully how you would use it to determine the errors of a mercurial thermometer.
2. Give a full account of Regnault's investigation of the relation between the boiling point of water and the external pressure. What was the general character of his results?



3. Describe the construction of the Dip Circle, and give a full account of the mode of using it, pointing out the purposes served by the different experiments, and explaining how they achieve them.

4. Describe, in full detail, the construction of an astatic mirror galvanometer.

A galvanometer with a 100 ohm shunt across its terminals, joined up in circuit with a 2,000 ohm coil and a battery of negligible resistance, gave a certain deflection; on removing the shunt and inserting an additional resistance of 20,000 ohms in the circuit the same deflection was obtained. Find the resistance of the galvanometer.

5. Describe the construction of the copper voltameter and the experiments which must be made with it in order to measure the electro-chemical equivalent of copper, giving all necessary calculations.

6. Explain the terms Longitudinal Vibration, Wave Motion, Wave Length.

Draw to scale a diagram representing one complete wave length of a simple harmonic wave.

7. An object is placed on the axis of a concave mirror at a distance of 20 centimetres; the real image formed is half the size of the object. Find the radius of the mirror.

8. Describe and explain a method of determining the velocity of sound by experiments carried out in an ordinary-sized room.

## ANATOMY AND PHYSIOLOGY.

*The Board of Directors.*

**FIVE Questions only to be attempted.**

1. What are the essential histological features of epithelial tissue? Enumerate the organs in which this tissue is found.
2. What differences are to be found between blood entering and blood leaving each of the following organs :—Lung, kidney, liver, bowel ?
3. What evidence is there that accommodation is effected by changes in the lens? Describe these changes, and state how you think they are brought about.
4. What factors are concerned in the coagulation of blood? By what means may coagulation be prevented ?
5. What are the functions, origin, and composition of lymph, and how may variations in its amount be produced ?
6. What are the essential structural differences between the brain of a frog and a mammal ?

## MECHANICS.

*The Board of Examiners.*

1. State and prove the polygon law of composition of relative velocities and accelerations.

A railway carriage is travelling at 60 km./hr. on a straight track. A small heavy body is thrown out horizontally with a velocity relative to the carriage of 10 m./sec. at right angles to its length. Neglecting the resistance of the air, find where the body reaches the level ground 3 m. below the point of projection.

2. State Newton's laws of motion, and explain carefully the reason for the statement that the tension of a cord by which a mass of  $m$  gms. is suspended is about  $980 m$  dynes.

A rough mass can slide along the upper horizontal surface of a straight bar which has a simple harmonic oscillation of 1 sec. period and 10 cm. amplitude in the direction of its length. The mass is placed on the bar when the latter is instantaneously at rest at one end of its range. Taking a coefficient of friction  $1/6$ , sketch the velocity-time graphs of the bar and the mass and shew how to find the motion of the latter completely.

3. Find the range of an unresisted projectile on an inclined plane through the point of projection.

Projectiles are discharged with a maximum velocity of 60 ft./sec., from a point  $O$  on a horizontal plane, at a boy who shelters himself

behind a wall 10 feet high at a horizontal distance of 60 feet from  $O$ . Shew that of the projectiles which get over the wall, those get nearest the boy which are discharged with the highest elevation, and find the safe distance from the wall 5 feet above the ground.

4. Find the acceleration of a particle moving with a speed of  $v$  cm./sec. in a circle of radius  $r$  cm. and find in gms. wt. the force per gm. required to maintain the motion.

A mass  $P$  on a smooth horizontal plane is attached to a fixed point  $A$  in the plane by an inextensible cord of length  $r$  and moves with velocity  $v$  in its circular path. A point  $B$  of the cord, distant  $a$  from  $A$  is suddenly seized and held fixed and then the string is allowed to run out from  $B$  until  $P$  is again describing a circle of radius  $r$ . Find the new velocity of  $P$ .

5. A mass of  $M$  lbs. is moving with a velocity of  $V$  ft./sec. and is brought to rest by a constant resistance in  $T$  secs. Find the work done by the resistance in ft. lbs. and its initial rate of work in H.P.

If the same mass is brought to rest by a buffer spring which gives a thrust of  $P$  lbs. wt. per foot of compression, find the greatest compression of the spring and the time in which the mass is brought to rest.

6. Shew that the work in ft. lbs. of a constant couple on a rigid body is equal to the product of its moment in ft. lbs. and the angle turned through by the body in radians.

A fly-wheel makes each revolution in a second, and has a mean kinetic energy of 20 ft. ton. The wheel is driven by a constant force acting on a pin  $A$  fixed in it at a distance of 2 ft. from its centre  $C$ . This force is always parallel to a fixed direction but changes its sense so as to be always driving. The resistance on the wheel is a constant couple of moment  $\frac{1}{2}$  ft. ton. Find the magnitude of the driving force, and the H.P.

Shew that the fractional variation of the angular velocity is about  $\cdot 008$ .

[Take  $\theta = \cdot 881$  rad. for the smallest positive root of  $\cos \theta = 2/\pi$ .]

7.  $AOB$  is a straight horizontal lever,  $O$  the fulcrum,  $OA = a$ ,  $OB = b$ .  $C$ ,  $D$  are fixed pulleys at equal distances  $h$  above and below  $O$  respectively. A cord attached to the lever at  $A$  runs in turn around the pulleys  $C$ ,  $D$  and a third pulley fixed to the lever at  $B$ . The driving force is a vertical pull on the cord hanging from  $B$ . The resistance is a vertical force at  $A$ . Find the mechanical advantage of the lever.
8.  $ABCD$  is a plane quadrilateral area,  $CM$ ,  $DN$  are perpendiculars from  $C$ ,  $D$  to  $AB$ .  $CM = 1$ ,  $DN = 2$ ,  $AM = 4$ ,  $AN = 3$ ,  $AB = 6$ . Find the distance of the centroid  $G$  of the quadrilateral from  $A$  and the  $\sphericalangle GAB$ .
9. Shew that if a body is in equilibrium under three forces in one plane, they are either all parallel or they meet at a point. State the further conditions of equilibrium.

The points  $A, B$  of a body and its centroid are in a vertical plane perpendicular to a wall. A wheel in the same plane is pivoted in the body with its centre at  $A$ . The body is in rough contact at  $B$  with a horizontal floor  $BO$  and the wheel is in contact at  $C$  with the wall  $OC$ .  $M$  is the foot of the perpendicular from the centroid  $G$  of the body and wheel to  $AB$  and  $AM = a, BM = b, GM = c, \angle ABO = \theta$ . Find the reactions at the two points of support  $B, C$  in terms of the total weight  $W$ .

10. Two light bars  $AO, BO$  in a vertical plane are jointed to fixed points at  $A, B$  and are also jointed together at  $O$ . A weight  $W$  is carried by  $AO$  at a point  $C$ . Sketch the figures for the graphical determination of the reactions at the joints.

Shew that the reaction at  $O$  is

$$W \frac{AC \sin \theta}{AO \sin \phi},$$

where  $\theta, \phi$  are the inclinations of  $AO$  to the vertical and  $OB$  respectively, and find an expression for the reaction at  $A$ .

## ALGEBRA.

*The Board of Examiners.*

1. Enunciate and prove the remainder theorem.

Resolve

$$A^2 + B^2 + C^2 - 2BC - 2CA - 2AB$$

into factors, having given that

$$A = a^3(b-c)^2, B = b^3(c-a)^2, C = c^3(a-b)^2.$$

2. Find the conditions that, for real values of  $x$ , a fraction whose numerator and denominator are given quadratic functions of  $x$  may be capable of all real values.

If  $A, B, C$  are positive, and  $a, b, c$  are real, the equation

$$\frac{A}{x-a} + \frac{B}{x-b} + \frac{C}{x-c} = 0$$

cannot have equal roots unless  $a = b = c$ .

3. State and prove the relations between the roots and coefficients of a rational integral equation.

If  $a, b, c$  are the roots of  $x^3 - px^2 + qx - r = 0$ , shew that

$$(a-b)^2(a-c)^2 + (b-c)^2(b-a)^2 + (c-a)^2(c-b)^2 = (p^2 - 3q)^2.$$

4. Shew that the elimination of  $y$  from two equations of the second order in  $x$  and  $y$  leads in general to an equation of the fourth order in  $x$ , and explain how the values of  $y$  are to be found when those of  $x$  have been found.

Solve

$$(x-a)(y-a) + (x-b)(y-b) = 0.$$

$$\frac{x}{a+x} + \frac{y}{b+y} = 1.$$

5. Define a determinant of the third order, and shew from the definition that the determinant changes sign if two rows are interchanged.

Eliminate  $x, y, z$  from

$$(b-c)x + (c-a)y + (a-b)z = 0.$$

$$(b+c)x + (c+a)y + (a+b)z = 0.$$

$$x + y + z = 0.$$

6. Express a proper fraction whose denominator is the product of different simple factors as a sum of partial fractions.

If there are  $n$  letters  $a, b, c, \&c.$ , and  $k$  is a positive integer less than  $n - 1$ , shew that

$$\Sigma \frac{a^k}{(a-b)(a-c)(a-d)\dots} = 0.$$

Find the value of the first member when  $k$  has the values  $n - 1, n$ .

7. Find, without using the permutation formula, the number of combinations of  $n$  different things  $r$  at a time.

If there are  $m$  sorts of things and  $n$  of each sort, find the number of ways in which a selection of one or more things can be made from them.

8. Define a convergent series, and shew that a series is convergent if from and after some fixed term the ratio of each term to the preceding is numerically less than some quantity which is itself numerically less than unity.

Shew that the series

$$1^2x + 2^2x^2 + 3^2x^3 + \dots + n^2x^n + \dots$$

is convergent if  $x$  is numerically less than unity, and find the term at which the series begins to converge if  $x = .999$ .

9. State the principal steps in the proof of the binomial theorem for a fractional or negative exponent.



If  $a$ ,  $b$  are two numbers whose difference is small compared with one of them, shew that, neglecting cubes of small quantities, the  $n^{\text{th}}$  root of  $a/b$  is

$$\frac{(n+1)a + (n-1)b}{(n+1)b + (n-1)a}.$$

10. Define a logarithm, and find the relation between the logarithms of the same number to different bases.

Eliminate  $x$ ,  $y$ ,  $z$  from

$$\log_{yz} x = a, \log_{zx} y = b, \log_{xy} z = c.$$

## GEOMETRY.

### *The Board of Examiners.*

- Define the radical axis of two circles, and show that if there be three circles, their three radical axes—taking the circles in pairs—are concurrent.  
Two points are taken on each side of a triangle— $D_1$  and  $D_2$  on  $BC$ ,  $E_1$  and  $E_2$  on  $CA$ ,  $F_1$  and  $F_2$  on  $AB$ —such that  $E_1E_2F_1F_2$ ,  $F_1F_2D_1D_2$ ,  $D_1D_2E_1E_2$  are three sets of concyclic points. Prove that all six points lie on the same circle.
- $POQ$  is any chord of a circle, and  $RS$  is the polar of  $O$ . If  $OS$  be parallel to  $QR$ , then  $PR$  will bisect  $OS$ .
- The rectangle contained by the diagonals of a quadrilateral is less than the sum of the rectangles contained by its opposite sides unless it be a cyclic quadrilateral.

$AB$ ,  $CD$  are the diagonals of a cyclic quadrilateral, and  $E$ ,  $F$  are their middle points. If  $CD$  bisects the angle  $AFB$ , then will  $AB$  bisect the angle  $CED$ .

4. Of three plane angles which form a trihedral angle any two are together greater than the third.
5. Define a parallelepiped. Prove that its four diagonals are concurrent, and that they are all bisected at their common intersection.  
Show also that the sum of the squares on its four diagonals is equal to the sum of the squares on its twelve edges.
6. If two small circles on a sphere have equal radii their planes are equidistant from the centre of the sphere.
7. Prove by pure geometry that the tangents drawn from any point to a parabola subtend equal angles at the focus, and have equal projections on the directrix.
8. Find the condition that the straight lines

$$\begin{aligned} ax + by + c &= 0, \\ a'x + b'y + c' &= 0, \end{aligned}$$

may be at right angles.

Prove that the straight line which passes through the intersection of

$$x \cos(\alpha + \beta) + y \sin(\alpha + \beta) = c(\cos \beta + \sin \beta),$$

$$x \cos(\alpha - \beta) + y \sin(\alpha - \beta) = c(\cos \beta - \sin \beta),$$

and is perpendicular to

$$x \cos \gamma + y \sin \gamma = p,$$

has for equation

$$-x \sin \gamma + y \cos \gamma = c \{ \sin(\alpha - \gamma) + \cos(\alpha - \gamma) \}.$$

9. Investigate the equation to the tangent to the circle  $x^2 + y^2 = c^2$  at the point  $(h, k)$ .

Prove that  $y = x \tan \theta + c \sec \theta$  touches this circle for all values of  $\theta$ ; and find in terms of  $\theta$  the co-ordinates of the point of contact.

10. Find the co-ordinates of the points  $P, Q$ , wherein the straight line  $(m + n)y - 2x = 2amn$  cuts the parabola  $y^2 = 4ax$ .

If  $PQ$  cut the axis in a fixed point whose abscissa is  $c$ , prove that the normals at  $P$  and  $Q$  meet on a fixed parabola whose latus rectum is  $\frac{c^2}{a}$ .

11. In the ellipse  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ , prove that the locus of the middle points of chords parallel to the line  $y = mx$ , is the line  $ma^2y + b^2x = 0$ .

Shew also that if chords through any point on the ellipse be drawn parallel to these two lines they will cut the ellipse again at the extremities of a diameter.

## TRIGONOMETRY.

*The Board of Examiners.*

1. Solve the equations

(a)  $8 \cos 2\theta + \tan^2 \theta = 7.$

(b)  $\tan \theta + \tan \phi = 2.$

$$\left. \begin{aligned} \tan 2\theta + \tan 2\phi &= -\frac{2\sqrt{3}}{3} \end{aligned} \right\}.$$

2. Prove that  $\sin \frac{\alpha}{2} = \pm \sqrt{\frac{1}{2} \left( 1 \pm \frac{1}{\sqrt{1 + \tan^2 \alpha}} \right)}$ .

Shew that the ambiguous signs are both positive if  $\alpha$  lies between  $(8m + 1) \frac{\pi}{2}$  and  $(8m + 3) \frac{\pi}{2}$ , and find the limits for  $\alpha$  when the signs are both negative.

3. If  $\sin \alpha + \sin \beta = a$ ,  
and  $\cos \alpha + \cos \beta = b$ ,

find the value of  $\tan \alpha + \tan \beta$ .

4. If  $\theta_1, \theta_2, \theta_3$ , are different solutions of

$$\tan(\theta + \alpha) + \tan(\theta + \beta) + \tan(\theta + \gamma) = 0,$$

no two of which differ by a multiple of two right angles, prove that

$$\theta_1 + \theta_2 + \theta_3 + \alpha + \beta + \gamma = n\pi.$$

5. A pole on a horizontal plane is of length  $l$ , and leans to the south at an angle  $\delta$  with the horizontal. The sun is at an elevation  $\theta$ , and the vertical plane containing the sun makes an angle  $\alpha$  with the meridian. Find the length and direction of the shadow.

6. Shew that in general the change in the cotangent of an angle is proportional to the change in the angle itself. For what values of the angle does this cease to be true?

The area of a triangle is determined from measurements of the three sides. If there are small errors  $x, y, z$ , in these, prove that the error in the area is  $\frac{1}{2}(ax \cot A + by \cot B + cz \cot C)$ .

7. Prove that  $(\cos \theta + i \sin \theta)^n = \cos n\theta + i \sin n\theta$  for real values of  $n$ .

Deduce the value of  $\cos 9\theta$  in terms of  $\cos \theta$ .

8. Prove that  $\tan^{-1}x = x - \frac{x^3}{3} + \frac{x^5}{5} - \dots$   
if  $1 > x > -1$ .

Hence deduce a useful series for calculating  $\pi$ .

9. Find the sum to  $n$  terms of  
 $\sin^2 \alpha + \sin^2 (\alpha + \beta) + \sin^2 (\alpha + 2\beta) + \dots$   
and to infinity (when convergent) of  
 $x \sin \theta + \frac{x^3}{3} \sin 3\theta + \frac{x^5}{5} \sin 5\theta + \dots$

10. Explain carefully what is meant by a spherical triangle and its polar triangle, and state the relations between the sides and angles of the triangle and its polar.

Prove that in any spherical triangle

$$\cos a = \cos b \cos c + \sin b \sin c \cos A.$$

## BOTANY.

### *The Board of Examiners.*

**Illustrate your answers by figures wherever possible.]**

1. Explain fully the influence of the following factors upon the distribution of plants:—(a) calcium, (b) common salt, (c) ants, (d) wind.
2. Describe the structure of the ovule of a typical Dicotyledon, and trace its development after pollination until the cotyledons of the embryo are formed.
3. Give an account of the structure, reproduction, and life history of a typical member of the Uredineæ.

4. Give an account of the chief forms of tactic response shewn by freely motile plant organisms, giving instances of each.
  5. Write a brief synopsis of the Natural Order Ranunculaceæ, mentioning six genera included in it, and giving the floral diagram of two dissimilar flowers belonging to the order.
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### DRAWING.

#### 5. DRAWING PLANT FORMS FROM NATURE.

*The Board of Examiners.*

*Time allowed : One hour.*

For this examination select a branch of *Pittosporum* bearing ten or twelve leaves.

Arrange the branch in front of, *but without pressing it against*, a plain white background, and with the light on the Candidate's left.

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Before the examination begins, the following Instructions must be read to the Candidates:—

1. You are to make a drawing in outline of the *branch* in front of you and to the scale or nature.
2. Your drawing may be executed in lead pencil, in pen and ink, or with the brush and water colour, as you choose.
3. One hour is allowed for your work.





































































