

Dalhousie College

AND

University.

SESSION 1865-6.

HALIFAX, N. S.
PRINTED FOR THE UNIVERSITY,
AT THE "CITIZEN" OFFICE.
1865.

1865-66

Dalhousie College and
University.

SESSION 1865-6.

HALIFAX, N. S.
PRINTED FOR THE UNIVERSITY,
AT THE "CITIZEN" OFFICE.
1865.

Harvard College and
University.

SESSION 1863-4

HARVARD A. S.
PRINTED FOR THE UNIVERSITY
AT THE UNIVERSITY PRESS

BOARD OF GOVERNORS.

HON. WILLIAM YOUNG, Chief Justice of Nova Scotia,
Chairman.

HON. CHARLES TUPPER, M. D., Provincial Secretary.

HON. J. W. RITCHIE, M. E. C., Solicitor General.

HON. S. L. SHANNON, M. P. P.

HON. JOSEPH HOWE.

REV. GEORGE M. GRANT, M. A.

JAMES F. AVERY, M. D.

ANDREW MACKINLAY, ESQ.

CHARLES ROBSON, ESQ.

JAMES THOMSON, ESQ., *Secretary and Treasurer.*

Dalhousie College and University,

HALIFAX, NOVA SCOTIA.

PRINCIPAL,

Very Rev. JAMES ROSS, D. D.

SENATE.

VERY REV. PRINCIPAL ROSS, D. D., Professor of Logic, Ethics, and Political Economy.

REV. WILLIAM LYALL, LL.D., Professor of Metaphysics, Esthetics, and Belles Lettres.

CHARLES MACDONALD, M. A., Professor of Mathematics :
Secretary to Senate

JOHN JOHNSON, M. A., Professor of Classics.

GEORGE LAWSON, Ph. D., LL.D., Professor of Chemistry
and Mineralogy.

JAMES DEMILL, M. A., Professor of Rhetoric, and
History.

Faculty of Arts.

The Winter Session, 1865-6 will commence on Wednesday, October 18th, 1865, and end on April 4th, 1866.

The Summer Session will commence on Wednesday, April 11th, and end on Wednesday, June 27th.

Applicants for admission will present themselves at the College on the opening day of the Winter Session.

Students may enter either as Undergraduates, with the intention of applying for the degree of B. A. at the end of the course, or as Occasional Students.

Students entering as Undergraduates are required to pass the Matriculation Examination at the opening of the Winter Session, and to take the regular classes prescribed for the Arts' course. Occasional Students are not required to pass any preliminary examination, and may attend any classes which they prefer.

No person can be admitted as an Undergraduate after ten days from the opening of the Session. Occasional Students will be admitted at any time during the Session.

Students from other Colleges may be admitted as students of the second, third, or fourth year, according to their previous standing, on producing satisfactory certificates, if on examination they be found qualified to take the classes of such year.

To pass the Matriculation Examination, a Student must possess a competent acquaintance with English, Latin and Greek Grammar, and be able to translate and parse easy passages from one Latin and one Greek author, and to scan and apply the Rules of Prosody in Hexameter

Verse He must also be able to pass a satisfactory examination in Arithmetic, Geography, and English History.

GENERAL COURSE OF STUDY.

FOR THE DEGREE OF B. A.

The Curriculum extends over four winter sessions; but Undergraduates who attend the winter and summer sessions for three years, shall be considered to have completed their course.

I.—WINTER SESSION.

- 1st year—Classics, Mathematics, and Rhetoric.
 2nd “ Classics, Mathematics, and Logic.
 3rd “ Classics, Mathematics, Natural Philosophy, and Modern Languages; and Metaphysics with Esthetics and Elementary Chemistry, on different days.
 4th “ Chemistry, Modern Languages, Ethics and Political Economy, History, and either Classics or Mathematics.

II.—SUMMER SESSION.

In the Summer Term Classes will be opened for instruction in Classics, Mathematics, and the Modern Languages, and lectures will be given in such branches of science as may from time to time be thought most expedient, such as Classical and English Literature, Botany, Geology, Mineralogy, &c.

F E E S .

The Fees to each Professor whose Class or Classes a Student attends are six dollars for the Winter Session and four dollars for the Summer Session, or eight dollars for both. But any Student who has paid fees twice either to the Professor of Classics or of Mathematics may attend either or both of these classes during the remainder of the course without paying an additional fee.

Experimental Chemistry is an optional class, the fee for which is six dollars.

In addition to class fees there is a matriculation fee of two dollars, payable by Undergraduates. Occasional Students pay an annual registration fee of one dollar.

The fees of undergraduates who take the complete course in this College, are as follows:—

Classes of 1st year, and Matriculation.....	\$20
“ 2nd “	18
“ 3rd “	18
“ 4th “	6

SCHOLARSHIPS.

A Scholarship entitling to free attendance on all the classes of the Undergraduate course, provided the holder of it maintain throughout a First or Second Class position, is offered by the Professors for competition this year to Pupils from the Halifax Schools: the competition to take place at the Matriculation Examination.

A Scholarship of equal value, and to be held under the same conditions, is offered this year for competition to Pupils attending Prince of Wales College, Charlottetown; the award to be made, after examination, by the Principal of that College.

A Scholarship of equal value, and to be held under the same conditions, is offered this year for competition to Pupils attending the Normal and Model Schools at Truro: the award to be made, after examination, by the Principal of the Normal School

These Scholarships can be competed for only by Pupils who have attended the Seminaries from which they come for a period of not less than one year previous to the competition.

Pupils from the Halifax Schools must intimate to the Secretary of Senate their intention of competing, on the opening day of the Session. In all cases, successful competitors must be able to pass creditably the Matriculation Examination of the College.

It is intended to offer Scholarships for competition to the pupils of different Seminaries from year to year.

PRIZES.

PRIZES AND CERTIFICATES OF MERIT.

Prizes will be awarded to those matriculated students who have distinguished themselves in the study either of the Classics or of Mathematics, during the Session, and at the same time have made respectable proficiency in all the classes proper to their year.

Prizes are offered this year, by the Rev. G. M. Grant, M. A., under the same conditions, in the subjects of Logic, Metaphysics, and Ethics.

The Grant Prize of Five Pounds, open for competition to all Undergraduates, will be awarded to the best Essay on Hume's Argument on Miracles, containing the clearest statement of the argument and the most satisfactory refutation of it. The essays to be sent in before the 1st March, signed with mottoes.

Certificates of Merit will be given to Students who exhibit a high degree of proficiency and improvement in all the branches of study proper to the Term.

In publishing the Names of Students of the first and second years who obtain Prizes and Certificates of Merit, mention will be made of the Schools in which they received their preliminary education.

All Undergraduates and Students are required to observe "The Rules of Attendance and Conduct," a copy of which is affixed to the black board in the College Hall.

 GRADUATION IN ARTS.

DEGREE OF B. A.

The Degree of B. A. may be obtained by attending the prescribed Courses of Lectures, extending over four Winter Sessions, or three Winter and three Summer Sessions, and by passing the following Examinations, the candidate maintaining throughout the period of his studies a good moral character :—

(1.) Matriculation Examination at the beginning of the First Session.

(2.) Examination at the close of the First Session, in Classics, Mathematics, and Rhetoric.

(3.) Examination at the close of the Second Session in Classics, Mathematics, and Logic.

(4.) Examination at the close of the Third Session in Classics, Mathematics, Natural Philosophy, Modern Languages, Metaphysics, and Elementary Chemistry.

(5.) Final Examination for Degree at the close of the Fourth Session, or subsequently, in Chemistry, Modern Languages, Ethics and Political Economy, History, and either Classics or Mathematics at the option of the Candidate.

Every Undergraduate is further required to pass an Examination, at the beginning of the second session of his attendance, in Greek and Roman History, and, at the beginning of his third session, in English History, Literature and Composition.

In the event of failure at any of the preliminary Examinations at the close of sessions, an Undergraduate may recover his status by passing a satisfactory Examination at the commencement of the term next ensuing.

In no case shall a student be entitled to a Degree who has not passed in every subject of the course.

DEGREE OF M. A.

Bachelors of Arts of at least three years' standing, maintaining meantime a good reputation, shall be entitled to the Degree of M. A., on producing an approved Thesis on a literary, scientific, or professional subject.

Fee for Diploma—\$5, payable before Final Examination.

Course of Instruction.

For Winter Session, 1865-6.

CLASSICS.

JOHN JOHNSON, M. A. Professor.

LATIN.

First Year.—Cicero, Orations against Catiline I. III. IV.—Virgil, Æneid, Book VI. *Latin Prose Composition.*

Second Year.—Livy, Book XXI. Horace, Epistles. *Latin Prose Composition.*

Third Year.—Terence, Adelphi. Juvenal, Satires III. X. XIII. Horace, Ars Poetica. *Latin Prose Composition.*

Fourth Year.—Cicero, De Officiis, Book I. Tacitus, Annals, Book I. *Latin Prose Composition.*

GREEK.

First Year.—Xenophon, Anabasis, Book IV.—Homer, Iliad, Book IV. *Greek Prose Composition.*

Second Year.—Herodotus, Book I. *Greek Prose Composition.*

Third Year.—Euripides, Hecuba; Sophocles, Antigone. *Greek Prose Composition.*

Fourth Year.—Thucydides, Book II. *Greek Prose Composition.*

The Oxford Texts with notes are recommended as Class-Books.

MATHEMATICS.

CHARLES MACDONALD, M. A., Professor.

First Year.—Algebra—to the end of Progressions.
Geometry.—Six Books of Euclid with Deductions.
Trigonometry.—Solution of Plane Triangles.

Second Year.—Algebra.—Binomial Theorem, Logarithms, Life Annuities, Probabilities.
Geometry.—Eleventh Book of Euclid, 21 props.
Trigonometry.—Analytical Plane, and Spherical.

Third Year.—Angular Analysis, DeMoivre's Theorem.
Theory of Equations: Conic Sections, analytically;
Differential Calculus. Mechanics.

Fourth Year.—Differential and Integral Calculus, and Conic Sections
with applications to Mechanics. Mechanics.

Books Recommended.—*Young's Elementary Course of Mathematics
Cassell's, or Potts' Euclid. The books in Weale's Series on Trigonometry,
Conic Sections, and Calculus. Todhunter's Differential and
Integral Calculus: Galbraith and Haughton's Mechanics. †

ETHICS, AND POLITICAL ECONOMY.

Very Rev. Principal Ross, D. D., Professor.

Fourth Year.—Ethics. Text-Books: Stewart's Active and Moral
Powers of Man, Whewell's Elements of Morality.

Political Economy. Text-Books: Mill's Political Economy,
Wayland's Political Economy.

LOGIC, METAPHYSICS, AND ESTHETICS.

Rev. WILLIAM LYALL, LL.D. Professor.

Second Year.—Logic and Psychology.

Text-Books:—Sir Wm. Hamilton's Lectures on Logic, Prof.
Lyall's "Intellect, the Emotions, and the Moral Nature."

Third Year.—Metaphysics and Esthetics.

Text-Books:—Sir Wm. Hamilton's Lectures on Metaphysics,
Mansel's Metaphysics, Lewes' Biographical History of Philosophy,
Cousin on the Beautiful, Allison's Essay on the Nature and
Principles of Taste.

* Suffices for the course, except Geometry.

† For Students of the first year, the Mathematical Books used in the Schools
for the most part are sufficient.

CHEMISTRY AND MINERALOGY.

—GEORGE LAWSON, PH. D., LL.D., Professor.

Third Year.—(Elementary Chemistry).

Text-Book:—Chambers' Chemistry, by Macadam.

Fourth Year.—Text-Book: Fownes' Chemistry, (or Gregory's).

Laboratory Books:—Fresenius' Qualitative and Quantitative Analysis, and Bowman's Medical Chemistry.

For Mineralogy and Geology, Nichols' or Dana's Mineralogy, Page's Text Books, and Dawson's Acadian Geology.

NATURAL PHILOSOPHY.

EXPERIMENTAL PHYSICS: Very Rev. Principal ROSS, D. D.

MATHEMATICAL PHYSICS: Professor C. MACDONALD, M. A.

Laidner's Handbook:—Galbraith and Haughton's Mechanics.

RHETORIC AND HISTORY.

JAMES DEMILL, M. A., Professor.

First Year.—Rhetoric.—Campbell's Philosophy of Rhetoric, Whately's Elements of Rhetoric.

Fourth Year.—History.—Taylor's Modern History, Guizot's History of Civilization, Chambers' Cyclopædia of English Literature.

MODERN LANGUAGES.

JAMES LIECHTI, Esq., Tutor.

FRENCH.

Third Year.—Pujol's Grammar, (1st part). Peschier's Entretiens Familiars.

Fourth Year.—Pujol's Grammar, (2nd part). Peschier's Causeries Parisiennes.

GERMAN.

Third Year.—Ahn's Grammar, (Meissner). Adler's Reader.

Fourth Year.—Otto's Conversation Grammar. Adler's Reader. A Play of Schiller.

EXAMINATION PAPERS

FOR

WINTER SESSION, 1864-5.

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

MONDAY, MARCH 27TH, 9 A.M. TO 1 P.M.

LATIN { OICFRO :—CRAT. PRO LGEE MANILIA.
VIRGIL :—ÆNEID. LIB. III.

FIRST YEAR.

1. Translate:—Reliquum est ut de Q. Catuli auctoritate et sententia dicendum esse videatur. Qui quum ex vobis quææret, si in uno Cn. Pompeio omnia poneretis, si quid eo factum esset, in quo spem essetis habituri, cepit magnum suæ virtutis fructum ac dignitatis, quum omnes una prope voce “in ipso vos spem habituros esse” dixistis. Etenim talis est vir, ut nulla res tanta sit ac tam difficilis quam ille non et consilio regere et integritate tueri et virtute conficere possit. Sed in hoc ipso ab eo vehementissime dissentio, quod quo minus certa est hominum ac minus diuturna vita, hoc magis respublica, dum per immortales licet, frui debet summt viri vita et virtute.—At enim ne quid novi fiat contra exempla atque instituta majorum.—Non dicam hoc loco, majores nostros semper in pace consuetudini, in bello utilitati paruisse, semper ad novos casus temporum novorum consiliorum rationes accommodasse; non dicam duo bella maxima, Punicum atque Hispaniense, ab uno imperatore esse confecta, duasque urbes potentissimas, quæ huic imperio maxime minitabantur, Karthagineme atqæ Numantiam ab eodem Scipione esse deletas: non commemorabo nuper ita vobis patribusque vestris esse visum ut in uno C. Mario spes imperii poneretur, ut idem cum Jugurtha, idem cum Cimbris, idem cum Teutonis bellum administraret: in ipso Cn. Pompeio, in quo novi constitui nihil vult Q. Catulus, quam multa sint nova summa Q. Catuli voluntate constituta recordamini. *Pro Lege Manilia, cap. 20.*

2. a. Analyze the sentence “Qui. * * * * dixistis,” shewing the principal and subordinate clauses, and the relations expressed by the latter.

b. Explain the use of the moods and tenses in this and the next sentence.

c. Parse the nouns and verbs in the sentence “non dicam duo * * esse deletas.”

3. Write short notes with dates on the proper names mentioned in this chapter.

4. Translate :—

Postquam altum tenuere rates, nec jam amplius ullæ
Adparent terræ, cælum undique et undique pontus,
Tum mihi cæruleus supra caput adstitit imber,
Noctem hiememque ferens, et inhorruit unda tenebris.
Continuo venti volvunt mare magna que surgunt
Aequora ; dispersi jactamur gurgite vasto ;
Involvere diem nimbi, et nox humida cælum
Abstulit ; ingeminant abruptis nubibus ignes.
Excutum cursu, et cæcis erramus in undis
Ipse diem noctemquenegat discernere cælo,
Nec meminisse viæ media Palinurus in unda.
Tres adeo incertos cæca caligine soles
Erramus pelago, totidem sine sidere noctes.
Quarto terra die primum se attollere tandem
Visa, aperire procul montes, ac volvere fumum.
Vela cadunt, remis insturgimus, haud mora, natuæ
Adnixi torquent spumas et cærulea verrunt.

—ÆNEID. III. 192-208.

5. a. Parse and decline “cælum,” “caput,” “hiemem,” “tenebris,” “caligine,” “pelago,” “die,” “se.” Decline *ōs*, *ōs*, *pecus* (*n*,) *pecus* (*f*.)

b. Parse and give the principal parts of the verbs in the last ten lines of the preceding extract.

6. Mention the places successively touched at or seen by Æneas during his voyage from Troy to Carthage, with their modern names.

7. When and where was Cicero born? When was the Manilian Law proposed? What was its object? Was there any precedent for it? Give the substance of Cicero's speech in support of it.

8. Write a short description of slavery among the Romans.

9. a. What are the rules for the use of mood and tense in a dependent interrogative sentence?

b. Distinguish *promitto*, *polliceor* ; *mederi*, *sanare* ; *amare*, *diligere* ; *anima*, *animus*, *mens* ; *hostis*, *inimicus* ; *irasci*, *succensere* ; *murus*, *mœnia*, *paries*, *maceria*.

10. Translate into Latin :—

He told me that the Romans had conquered the Gauls. I fear that this is true. There is no doubt that Cæsar will soon return to Rome. What will prevent him from becoming master of the world? Cn. Pompeius will strive to provide for the interests of his country. The Senate will proclaim that no one leave the city.

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

MONDAY, MARCH 27TH, 9 A.M. TO 1 P.M.

LATIN.—HORACE:—EPISTLES.—TACITUS:—AGRICOLA.

SECOND YEAR.

1. *a.* Translate:—Epp. Lib. I, 6, vss. 36-65. *b.* Write short notes on “mancipiis,” “servum qui dictet,” “in Fabia,” “fasces,” “curule ebur.” Explain the construction of “Ne fueris hic tu,” “œris,” “tolleret,” “dictet.”

2. *a.* Translate:—Epp. Lib. II, 1, vss. 161-176. *b.* Derive *comœdia tragœdia*. How were Roman comedies and tragedies classified? Who was the first Roman poet? When did he live?

3. Wherever the construction of the following passages appears to you to require explanation, write short notes:—

- a.* Est quadam prodire tenus si non datur ultra. I. 1. 32.
- b.* Vina bibes iterum Tauro diffusa . . . I. 5. 4.
- c.* Est ubi divellat somnos minus invida cura? I. 10. 18.
- d.* Hæc tibi dictabam post fanum putre Vacunæ. I. 10. 49.
- e.* Nunc, et si quid abest Italis adjudicat armis. I. 18. 57.
- f.* Nunc Satyrum, nunc agrestem Cyclopa movetur. II. 2. 125.

4. Explain the allusions contained in the following lines:

- a.* Sirenum voces et Circœ pocula nosti.
- b.* Scripta Palatinus quœcunque recepit Apollo.
- c.* Sub duce qui templis Pathorum signa refixit.
- d.* Claustraque custodem pacis cohibertia Janum.
- e.* Si proprium est quod quis libra mercatur et œre.

5. Give a brief sketch of Horace's life. In what passage of the Epistles does he mention the year of his birth.

6. Translate:—Agricola, cap. XXXI. What other readings have been proposed for “annum in frumentum” “Brigantes,” and “in pantitentiam.” What objections are urged against these? What was the name of “colonia.”

7. *a.* What writers before Tacitus described Britain? Give the substance of his remarks on its geographical position, its inhabitants and its productions.

b. Where and when was Agricola born? What Emperors reigned during the life of Tacitus? In whose reign and in what year did he publish the *Vita Agricolæ*? Point out some peculiarities of his style.

8. Derive *provincia*. Which was the first Roman province? Describe the organization of the Provinces before and after the time of Augustus.

9. Write in Latin and Greek the principal forms of a Conditional proposition. How are questions asked in *oratio obliqua*? Turn Cap. XXXI, Neque enim.....to end into *oratio obliqua*.

10. Translate into Latin:—

But I may be told no commoner has been consul since the expulsion of the Kings. What then? Is no innovation to be introduced? In the reign of Romulus there were no pontiffs, no augurs; they were created by Numa Pompilius. There was no census in the state, nor any arrangement of classes and centuries. There never had been consuls; they were appointed on the expulsion of the Kings

DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

MONDAY, MARCH 27TH, 9 A.M. TO 1 P.M.

LATIN { JUVENAL. SATIRES III. VIII X. XIII.
HOBACE. SATIRES BK. 1, 6. BK II. 1, 3, 5, 7, 8. ARS POETICA.

THIRD YEAR.

1. Translate :—
 - a. Juv. Sat. III. 278-301.
 - b. " Sat. X. 114-132.
 - c. Hor. Satt. Lib. II. 3. 56-71.
 - d. " Ars Poetica, 46-59.
2. Explain and illustrate some unusual constructions that occur in the preceding passages.
3. What customs and historical facts are alluded to in the following lines.
 - a. Si pudor est, et de pulvino surgat equestri
Cujus res legi non sufficit.
 - b. Creditur olim
Velifactus Athos.
 - c. Cannarum vindex et tanti sanguinis ultor
Annulus.
 - d. (Pueri) Ibant octonis referentes Idibus æra.
 - e. Quisquis adhuc uno partam colit asse Minervam.
f quem ter vindicta quaterque
Imposita haud unquam misera formidine privet.
4. Quote from Horace's works, (a), imitations of Greek constructions (b) words which are not found elsewhere. (c.) What Greek proverbs and phrases correspond to these :—Rixari de lana caprina. Dimidium facti qui cœpit habet. Cœnoevellere plantam. Ampullari. Fabulam docere. Dominantia nomina. Parturiunt montes, nascetur ridiculus mus.
5. Give the meaning and derivation of these words :—Trechedipna, nicteria, aliptes, triscurria, endromis, sportula, abolla pinnirapus, epiredia, petorritum, cerdo.
6. Novus, integer, immensus, supellex, ignarus, prognatus, cœna, aratrum, planipes, superstes.—Analyze these words and give others cognate to them in Latin, Greek, and English.
7. What is the subject of the tenth satire of Juvenal? How does he treat it, and what illustrations does he employ? What English writer has imitated it?
8. How far may Roman satire be regarded as original? What is the derivation of the word *satira*. Who was the first Roman satirist? What writers did he take as models, according to Horace? Compare the satires of Horace and Juvenal.
9. Ignotum tragicæ genus juvenisse Camœnæ
Dicitur et plaustris vexisse poemata Thespis
Quæ canerent agerentque peruncti sæcibus ora.

HOR. A. P.

Criticise the statements contained in these lines.

10. Translate into Latin :—

The Oppian law to restrain the luxury of women had not then been passed; yet no Roman lady accepted these presents. What do you imagine was the reason? The reason was the same as that which our ancestors had for enacting no law on this point. There was no luxury to be restrained. As it is necessary that diseases be known before their remedies, so cupidity is born before the laws which are to govern it. What but the intense passion for adding estate to estate evoked the Licinian law concerning the five hundred acres?

DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

TUESDAY, MARCH 28TH, 9 A.M. TO 1 P.M.

GREEK:—XENOPHON; ANABASIS, BOOK II.—HOMER: ILIAD, BOOK III.

FIRST YEAR.

1. Translate the following passages:—

a. Ἐπεὶ δὲ ἀπήντησαν αὐτοῖς οἱ τῶν Ἑλλήνων στρατηγοί, ἔλεγε πρῶτος Τισσαφέρνης δι' ἑρμηνέως τοιάδε. Ἐγώ, ὦ ἄνδρες Ἕλληνες, γείτων οἰκῶ τῇ Ἑλλάδι, καὶ ἐπεὶ ὑμᾶς εἶδον εἰς πολλὰ κἀμήχανα πεπτωκότας, εὖρημα ἐποιήσαμην εἰ πως δυναίμην παρὰ βασιλέως αἰτήσασθαι δοῦναι ἐμοὶ ἀποσῶσαι ὑμᾶς εἰς τὴν Ἑλλάδα. οἶμαι γὰρ ἂν οὐκ ἀχαρίστως μοι ἔχειν οὔτε πρὸς ὑμῶν οὔτε πρὸς τῆς πάσης Ἑλλάδος. ταῦτα δὲ γνοὺς ἠτούμην βασιλεῖα, λέγων αὐτῷ ὅτι δικαίως ἂν μοι χαρίζοιτο, ὅτι αὐτῷ Κύρῳ τε ἐπιστρατεύοντα πρῶτος ἠγγεῖλα καὶ βοήθειαν ἔχων ἅμα τῇ ἀγγελίᾳ ἀφικόμην, καὶ μόνος τῶν κατὰ τοὺς Ἕλληνας τεταγμένων οὐκ ἔφυγον, ἀλλὰ διήλασα καὶ συνέμιξα βασιλεῖ ἐν τῷ ὑμετέρῳ στρατοπέδῳ, ἐνθα βασιλεὺς ἀφίκετο, ἐπεὶ Κύρον ἀπέκτεινε, καὶ τοὺς σὺν Κύρῳ βαρβάρους ἐδίωξα σὺν τοῖσδε τοῖς παρούσι νῦν μετ' ἐμοῦ, οἵπερ αὐτῷ εἰσι πιστότατοι.

Anab. II, 3.

b. Οὐ πολλῶν δὲ ὕστερον ἀπὸ τοῦ αὐτοῦ σημείου οἱ τ' ἔνδον συναλαμβάνοντο καὶ οἱ ἔξω κατεκόπησαν. μετὰ δὲ ταῦτα τῶν βαρβάρων τινὲς ἰππέων διὰ τοῦ πεδίου ἐλαύνοντες ᾧτινι ἐντυγχάνοιεν Ἕλλημι ἢ δούλῳ ἢ ἐλευθέρῳ πάντας ἔκτεινον. οἱ δὲ Ἕλληνες τὴν τε ἰππασίαν αὐτῶν ἐθαύμαζον ἐκ τοῦ στρατοπέδου ὄρωντες καὶ ὅτι ἐποιοῦν ἡμφεγνύουσι, πρὶν Νικαρχος Ἀρκὰς ἦκε φεύγων τετραμένος εἰς τὴν γαστέρα καὶ τὰ ἔντερα ἐν τοῖς χερσὶν ἔχων, καὶ εἶπε πάντα τὰ γεγεννημένα.

Anab. II, 5.

2. a. In the sentence (a) ταῦτα δὲ γνοὺς κ.τ.λ., which is the principal clause? What notions are expressed by the subordinate clauses, and with what words or clauses are they severally connected?

b. The speech beginning Ἐγώ, ὦ ἄνδρες Ἕλληνες, is reported in the *direct* form; write out the first sentence of it in the *indirect* form.

c. Explain the construction of Κύρῳ τε ἐπιστρατεύοντα; Two other constructions might have been used instead of this? How would these words be translated into Latin?

3. a. Parse and decline Τισσαφέρνης, ἑρμηνέως, ἄνδρες, γείτων, πολλά, ταῦτα, ἀγγελίᾳ, ᾧτινι, χερσίν.

b. Parse and give the principal tenses of:—εἶδον, πεπτωκότας, δοῦναι, ἔχειν, γνοὺς, ἀφικόμην, διήλασα, φεύγων. τετραμένος, γεγεννημένα.

c. Compare: πολὺς, πρῶτος, δικαίως,—ῥάδιος, ταχύς, ἐχθρός.

d. What is the signification of *Aorist*? In what Moods is the peculiar force of the *Aorist* most clearly seen? What is the difference of meaning between the Present, *Aorist*, and Perfect Imperative?

4. Where and when was Cyrus killed? How old probably was Xenophon then? What facts do we possess for fixing the date of his birth?

5. Translate the following passages:—

- a. ἀλλ' ὅτε δὴ Τρώεσσιν ἐν ἀγρομένοισιν ἔμιχθεν,
 στάντων μὲν Μενέλαος ὑπέιρεχεν εὐρέας ὤμους,
 ἄμφω δ' ἐξομένω, γεραιώτερος ἦεν Ὀδυσσεύς·
 ἀλλ' ὅτε δὴ μύθους καὶ μῆδεα πᾶσιν ὕφαινον,
 ἦτοι μὲν Μενέλαος ἐπιτροχάδην ἀγόρευεν,
 παῦρα μὲν, ἀλλὰ μάλα λιγύως· ἐπεὶ οὐ πολὺμυθος,
 οὐδ' ἀφαμαρτοεπής, ἣ καὶ γένει ὕστερος ἦεν.
 ἀλλ' ὅτε δὴ πολὺμητις ἀναΐξειεν Ὀδυσσεύς,
 στάσκειν, ὑπαὶ δὲ ἴδεσκε, κατὰ χθονὸς ὕμματα πῆξας,
 σκῆπτρον δ' οὐτ' ὀπίσω οὔτε προπρηγνὲς ἐνώμα,
 ἀλλ' ἀστεμφὲς ἔχεσκεν, ἀτδρεῖ φωτὶ εὐκίως·
 φαίης κε ζᾶκοτόν τε τιν' ἔμμεναι, ἄφρονά τ' αὐτῶς·
 ἀλλ' ὅτε δὴ β' ὕπα τε μεγάλην ἐκ στήθεος ἴει,
 καὶ ἔπεα νιφάδεσσιν εὐκίοντα χειμερήσιον,
 οὐκ ἂν ἔπειτ' Ὀδυσσῆϊ γ' ἐρίσσειε βροτὸς ἄλλος·
 οὐ τότε γ' ὦδ' Ὀδυσσῆος ἀγασσάμεθ' εἶδος ἰδόντες.

Il. III, 209-224.

- b. Δαιμονίη, τί με ταῦτα λιλαίεαι ἠπεροπεύειν;
 ἦ πῆ με προτέρω πολίων εὐναιομενάων
 ἄξεις ἢ Φρυγίης, ἢ Μηονίης, ἐρατεινῆς,
 εἴ τίς τοι καὶ κείθι φίλος μερόπων ἀνθρώπων;
 δύνεκα δὴ νῦν δῖον Ἀλέξανδρον Μενέλαος
 νικήσας ἐθέλει στυγερὴν ἐμὲ οἰκάδ' ἄγεσθαι,
 τοῦνεκα δὴ νῦν δεῦρο δολοφρονέουσα παρέστης;
 ἦσο παρ' αὐτὸν ἰούσα, θεῶν δ' ἀπέειπε κελεύθους·
 μηδ' ἔτι σοῖσι πόδεσσιν ὑποστρέφειας Ὀλυμπον,
 ἀλλ' αἰεὶ περὶ κείνον δίζυε, καὶ ἐ φύλασσε,
 εἰσόκε σ' ἢ ἄλοχον ποιήσεται, ἢ ὅγε δούλην.
 κείσε δ' ἐγὼν οὐκ εἶμι (νεμεσσητὸν δέ κεν εἶη)
 κείνου πορσυνέουσα λέχος· Τρωαὶ δέ μ' ὀπίσσω
 πᾶσαι μοιμήσονται· ἔχω δ' ἄχ' ἄκριτα θυμῷ.

Il. III, 399-412.

6. a. Decline *εὐρέας*, *ἄμφω*, *ἄφρονα*, *ἔπεα*, *νιφάδεσσιν*, *ὄπα*, *πολίων*, *κελευθον*, *πόδεσσιν*.

b. Parse *ἔμιχθεν*, *στάντων*, *ὑπέιρεχεν*, *ἦεν*, *ἀναΐξειεν*, *ἴδεσκε*, *εὐκίως*, *ἴει*, *ἦσο*.

7. Explain the Syntax of the nouns and pronouns in the following phrases:—*ἴσαν σιγῆν*. *ὄχρος τέ μιν εἶλε παρειάς*. *κέκλυτέ μιν μυθον*. *δια γυναικῶν*. *δαῆρ εμὸς ἔσκε κινώπιός*. *ἔξοχος Ἀργείων κεφαλῆν*.

8. a. Which are the four principal dialects of Greek? Which of them does the language of Homer most nearly resemble, and what are its characteristics?

b. Write the Attic forms of the following words:—*ἡελίος*. *αἶα*. *ἔμμεναι*. *δοιω*. *κέ*. *ἔνεκα*. *παλάμην*. *πόδεσσιν*. *πολέμοιο*. *ἔσκε*. *ἴδθαι*. *δεδμήατο*. *τραπείομεν*.

9. Give the meaning and derivation of *ἰππόδαμος*, *κορυθαίολος*, *νημερτές*, *ἀφαμαρτοεπής*, *τροφάλεια*, *ἠπεροπευτής*, *δολίχσοκκος*, *τηλῆγετος*, *κινώπις*, *μέροψ*.

10. When did Homer live according to Herodotus? What internal evidence has been brought forward in support of the statement that Homer's works were not originally written compositions?

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

TUESDAY, MARCH 28TH, 9 A.M. TO 1 P.M.

GREEK:—HERODOTUS, BOOK I, SEC. 1-100.

SECOND YEAR.

I. Translate Book I, sec. 33 and 34.

2. *a.* In the sentence *ταῦτα λέγων τῷ Κροίσῳ κ.τ.λ.* To whom do *μίν*, *δόξας*, *ἀμαθέα* respectively refer? To whom will they refer if *ταῦτα λέγοντι Κροίσος* be read? What grammatical difficulty is there in the passage with the former reading? What changes will the latter reading make in the translation?

3. Explain the grammatical construction of the following passages:—

a. Sec. 22. *ἡ τε διαλλαγή σφι ἐγένετο, ἐπ' ᾧ τε ξείνους ἀλλήλοισι εἶναι.*

b. Sec. 31. *αἱ δὲ Ἀργεῖαι (ἐμακάριζον) τὴν μέτερα, οἶον τέκνων ἐκύρησε.*

c. Sec. 56. *(ἐλπίζων) οὐδ' ὦν αὐτῶν, οὐδὲ οἱ ἐξ αὐτοῦ, πανσεσθαι κοτε τῆς ἀρχῆς.*

d. Sec. 68. *ἔκον νῦν οὕτως τυγχάνεις θῶμα ποιευμενος τὴν ἐργασίην τῶν σιδήρου.*

e. Sec. 78. *οὐδέν κω εἰδότες τῶν ἦν περὶ Σαρδεις τε καὶ αὐτὸν Κροισον.*

f. Sec. 80. *ὡς ὁσφραντο τάχιστα τῶν καμήλων δι' ἵπποι καὶ εἶδον αὐτὰς, ὀπίσω ἀνέστρεφον.*

g. Sec. 83. *καὶ σφι ἤδη παρεσκευασμένοισι, καὶ νεῶν ἐουσέων ἐτοίμων, ἦλθε ἀγγελίη ὡς ἠλώκοι τὸ τεῖχος τῶν Λυδῶν.*

4. *a.* What notions are expressed by the Greek Genitive case?

b. Under what conditions may the Participle be used with a predicative force (1) in the oblique cases, (2) in the nom.?

c. With what classes of verbs is the Participle generally so used? Distinguish *φαίνομαι ποιεῖν* and *φαίνομαι ποιῶν*.

d. Give the rule for the use of Moods in Final clauses.

5. Translate Sec. 65 and 83.

6. a. What are the objections to the accuracy of the account of Lycurgus as given by Herodotus?
 b. Explain fully the following terms:—Γερουσία. Ἐφοροί. περίοικοι. Ἐίλωτες. Κρυπτεία. Συσσιτία. Ἐνωμοσία.
7. a. Parse: ἐβουλεύατο, ἐώθεε, ἦϊα, ἐπίεσται, προηδέατο, ὀπώπεε, ἐνένωτο. προσθεοίτο, ἠνείκαντο, ἀλισθῆεν.
 b. Give the Present, Future, Perfect and Second Aorist of ἀνεύρηται, ἀνέγνωσε, ἀπικόμενος, συνεχώσα, ἐπυρθάνετο, ἔδραμον, ἠλώκοι, τυγχάνει, ἐπεπτοκεσαν, διαφέρουσι.
8. a. What words in the Attic dialect correspond to: ὦν, ἐών, κώς, κεινῆσι, ἐννωσας, ὠτίνη, πρήσων, μετεξέτεροι, οὐδαμοί, διφασίας, ἠνεικε.
 b. Give the Ionic forms of: ἐαντῶν, πρᾶγμα, στρατεία, ὄρος, ὄρος, ἔδειξε, ἐδέχοντο, ἱερόν.
9. What words are *Enclitics*? Accent the cases of σῶμα, χεῖρ, κριτής. Accent these verbal forms:—λειπονσι. φιλονσι. ἐφίλει. λαβειν. λιπων. ἔλθε. ποιησαι (opt.), ποιησαι (inf.), ποιησαι (imp.)

10. Translate into Greek :

I asked him what he was doing.—Whenever he took a city he used to kill all the citizens.—I will go away that I may not see the battle.—He said that all citizens ought to confer benefits on their country, when there is any occasion.—Let us not take away their money from them.

DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

TUESDAY, MARCH 28TH, 9 A.M. TO 1 P.M.

GREEK:—EURIPIDES, MEDEA—SOPHOCLES, ŒDIPUS REX.

THIRD YEAR.

1. Translate the following passages:—

α. IA. οὐ νῦν κατεῖδον πρῶτον, ἀλλὰ πολλάκις
*τραχεῖαν ὄργην ὡς ἀμήχανον κακόν.)
*σοὶ γὰρ παρὸν) γῆν τήνδε καὶ δόμους ἔχειν
κούφως φερούση κρείσσονων βουλεύματα,
λόγων ματαίων οὐνεκ' ἐκπεσεῖ χθονός.
κάμοι μὲν οὐδὲν πρᾶγμα· *μὴ παύση ποτὲ
λέγουσ') Ἰάσων ὡς κάκιστός ἐστ' ἀνὴρ·
ἃ δ' ἐς τυράννους ἐστὶ σοὶ λελεγμένα,
*πᾶν κέρδος ἡγοῦ ζημιουμένη φυγῆ.)
καγὼ μὲν ἀεὶ βασιλέων θυμουμένων
ὄργας ἀφῆρουν, καὶ σ' ἐβουλόμην μένειν·
σύ δ' οὐκ ἀνίης μωρίας, λέγουσ' ἀεὶ
κακῶς τυράννους· τοιγὰρ ἐκπεσεῖ χθονός.
θῶμος δὲ κάκ τῶνδ' οὐκ ἀπειρηκῶς φίλοις
ἦκω, τὸ σὸν γε προσκοπούμενος, γύναι.
ὡς μήτ' ἀχρήμων ξὺν τέκνοισιν ἐκπέσης
*μήτ' ἐνόσῃς του.) πόλλ' ἐφέλκεται φυγῆ
κακὰ ξὺν αὐτῇ· καὶ γὰρ εἰ σύ με στυγείς,
οὐκ ἂν δυναίμην σοὶ κακῶς φρονεῖν ποτε.

Med. 445-463.

β. MH. οὐκ εἰσὶ μὲν μοι παῖδες, οἶδα δὲ χθόνα
φεύγοντας ἡμᾶς καὶ σπανίζοντας φίλων·
ταῦτ' ἐννοήσασ' ἡσθόμην ἀβουλίαν
πολλὴν ἔχουσα καὶ μάτην θυμουμένη.
νῦν οὖν ἐπαινῶ, σωφρονεῖν τέ υιοὶ δοκεῖς
κῆδος τόδ' ἡμῖν προσλαβῶν, ἐγὼ δ' ἄφρων,
*ἢ χρῆν μετεῖναι τῶνδε τῶν βουλευμάτων)
καὶ ξυμπεραίνειν καὶ παρεστάναι λέχει,
νύμφην τε *κηθεύουσαν ἠδεσθαι σέθεν.)
ἀλλ' ἐσμὲν οἶόν ἐσμεν, οὐκ ἐρῶ κακόν,
γυναῖκες· οὐκουν χρή σ' ὁμοιοῦσθαι κακοῖς,
οὐδ' ἀντιτείνειν νῆπι' ἀντὶ νηπίων.
παριέμεσθα, καὶ φαίμεν κακῶς φρονεῖν
τότ', ἀλλ' ἄμεινον νῦν βεβούλευμαι τάδε.

ὦ τέκνα τέκνα, δεῦτε, λείπετε στέγας,
 ἐξέλθετ', ἀσπάσασθε καὶ προσείπατε
 πατέρα μεθ' ἡμῶν, καὶ διαλλάχθηθ' ἅμα
 τῆς πρόσθεν ἔχθρας ἐς φίλους μητρὸς μέτα·
 σπονδαὶ γὰρ ἡμῖν, καὶ μεθέστηκεν χόλος.
 *λάβεσθε χειρὸς δεξιᾶς. οἰμοὶ κακῶν')

Med. 880-899.

c. XO. εἰ δέ τις ὑπέροπτα χερσὶν ἢ λόγῳ πορεύεται,
 Δίκας ἀφόβητος, οὐδὲ
 δαιμόνων ἔδη σέβων,
 κακά νιν ἔλοιτο μοῖρα,
 δυσπότημον χάριν χλιδαῖς,
 εἰ μὴ τὸ κέρδος κερδανεῖ δικαίως
 καὶ τῶν ἀσέπτων ἐρξεται,
 ἢ τῶν ἀθίκτων ἔξεται ματάζων.
 *τίς ἐτι ποτ' ἐν τοῖσδ' ἀνὴρ θυμοῦ βέβη
 εὔξεται ψυχᾶς ἀμύνειν;))
 εἰ γὰρ αἱ τοιαῖδε πράξεις τίμαι,
 τί δεῖ με χορεύειν;
 οὐκ ἐτι τὸν ἀθικτον εἴμι γὰς ἐπ' ὀμφαλὸν σέβων.
 οὐδ' ἐς τὸν Ἄβαισι ναῶν,
 οὐδὲ τὰν Ὀλυμπίαν,
 εἰ μὴ τάδε χειρόδεικτα
 πᾶσιν ἀρμόσει βροτοῖς.
 ἀλλ', ὦ κρατύνων, εἰπερ ὄρθ' ἀκούεις,
 Ζεῦ, πάντ' ἀνάσσω, μὴ λάθοι
 σὲ τάν τε σὺν ἀθάνατον αἰὲν ἀρχάν.
 φθίνοντα γὰρ * * * Λαίου
 θέσφατ' ἐξαιροῦσιν ἠδῆ,
 κοῦδαμοῦ τιμαῖς Ἀπόλλων ἐμφανής·
 ἔρρει δὲ τὰ θεῖα.

Æd. R., 883-910.

d. EΞ. ἀποσπάσας γὰρ εἰμάτων χρυσηλάτους
 περόνας ἀπ' αὐτῆς, αἴσιν ἐξεστέλλετο,
 ἄρας ἔπαισεν ἄρθρα τῶν αὐτοῦ κυκλῶν,
 αὐδῶν τοιαῦθ', *ὀθούνεκ' οὐκ ὄψοιντό νιν)
 οὔθ' οἱ ἔπασχεν οὔθ' ὄποι' ἔδρα κακὰ,
 ἀλλ' ἐν σκότῳ τὸ λοιπὸν δυεῖς μὲν οὐκ ἔδει
 ὑψοῖσθ', οὓς δ' ἔχρηζεν οὐ γνωσοῖατο.
 τοιαῦτ' ἐφθμνῶν πολλάκις τε κοῦχ ἄπαξ
 ἤρασσ' ἐπαίρων βλέφαρα. φοίνια ὃ ὁμοῦ
 γλῆραι γένει' ἔτεγγον, οὐδ' ἀνίσσαν
 φόνον μυδώσας σταγόνας, ἀλλ' ὁμοῦ μέλας
 ὄμβρος χάλαζά θ' αἱματοῦσσι' ἐτέγγετο.

Æd. R., 1269-1279.

2. Explain the construction of the clauses in the preceding extracts which are marked thus *).

3. Point out the differences in use or meaning between the following constructions :

a. πρὶν ἦλθε, πρὶν ἔλθῃ, πρὶν ἔλθοι, πρὶν ἔλθειν. πρὶν δειπνεῖν, πρὶν δειπνῆσαι, πρὶν δεδειπνηκέναι.

b. ὥστε ἀρεῖσθαι, ὥστε ἀρεῖται. δέδια μὴ βουλεύης, δέδια μὴ βουλένης.

c. οὐ μὴ ποιήσεις, οὐ μὴ ποιήσης. μὴ κρύπτε, μὴ κρύψης.

4. καὶ ὅπως μὲν ἐκ τῶνδε οὐ ἔτι οἶδα ἀπολλυταί.

καὶ πού ἐστι ὁ χωρὸς οὗτος ὅν τοδε ἦν παθος :

a. Make the changes which are necessary to prevent *Hiatus* in these verses.

b. Scan them, marking the quantity of each syllable.

c. Accent them.

d. Resolve the following examples of *Crisis*:—κάν. κᾶτα. τοῦπος. χῶ. αὐτός. ἴσθονεκα. θάτερον. ἐγῶμαι.

5. How were the three Athenian dramatists connected with the battle of Salamis ?

6. In what dialect is extract (c) written ? Account for its use in the Attic drama.

7. Two novelties introduced by Euripides into his tragedies shew the weakness of their plots : what are they ?

8. Explain the following terms:—τετραλογία. χορηγός. κορυφαῖος. ἐκκύκλημα. Was the ἐκκυκλημα used in the *Medea* ?

9. In what respects did the representation of a Greek play differ from that of a modern one ?

10. Translate into Greek :

He says that the boys do not wish to go away.—I asked the boy himself whether the rivers were flowing with milk and money.—Speaking fast is a different thing from speaking well.—The masters are too wise to be deceived by their pupils.—More arms were taken from them than could have been expected from the number of the dead.—Nothing was done because that villain gave us trouble.

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

WEDNESDAY, MARCH 29TH, 3 TO 5½ P. M.

FIRST YEAR.—MATHEMATICS.

1. State the rule for the multiplication of Vulgar Fractions, and prove it by operating on an example.

2. Find whether $\frac{431}{4080}$ is a finite Decimal, and shew that in a circulating Decimal, the number of figures in the circle must, at the most, be one less than the denominator of the Vulgar Fraction expressed in its lowest terms.

3. Find the square root of 3 to four decimal places.

4. Find the cube root of 157464.

5. Shew that Algebraic Involution enables you to find a rule for the extraction of any root.

6. Express in its simplest form $\frac{2x^2-2ax}{a^2-x^2} - \frac{a+b}{a-x} + \frac{a-b}{a+x}$.

7. Simplify $\frac{\sqrt{3}+\sqrt{2}}{2\sqrt{2}+3\sqrt{2}}$

8. Given $\frac{2}{5-x} = \frac{1}{5-x} + \frac{1}{8-x}$ to find x .

9. $\left. \begin{array}{l} x^2 + 2xy + 3y^2 = 67 \\ x - y = 1 \end{array} \right\}$ to find x and y .

10. $\left. \begin{array}{l} x^2 + xy + y^2 = 37 \\ \frac{1}{2}x^2y^2 = 72 \end{array} \right\}$ to find x and y .

11. Solve the general Equation $x^2 + px + q = 0$, and find the conditions that both values of x may be *real* and *positive*.

12. Two travellers, A and B, set out in opposite directions. A proceeded 2 miles the 1st day, 4 the 2nd, 6 the 3rd, &c; B went 50 the 1st day, 47 the 2nd, 44 the 3rd, &c. After how many days will they be 250 miles apart?

13. Find the sum of a Geometric series.

14. Find by Algebra the value of $\cdot 68\bar{1}$, and deduce the Arithmetical rule from what you have done.

15. If the equations $x^2 + px + q = 0$ and $x^2 + mx + n = 0$ have a common root a , prove that the other roots are

$$b = \frac{(m-p)q}{q-n} \text{ and } b' = \frac{(m-p)n}{q-n}$$

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

WEDNESDAY, MARCH 20TH, 10 A. M., TO 12½ P. M.

SECOND YEAR.—MATHEMATICS.

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

II. Similar triangles are to one another in the duplicate ratio of their homologous sides.

III. If three straight lines meet at a point, and a straight line stand at right angles to each of them at that point; these three straight lines are in the same plane.

IV. If a solid angle be contained by three plane angles, any two of them are greater than the third.

V. If the vertical angle and likewise the adjacent exterior angle of a triangle be bisected by straight lines which meet the base, the base shall be divided harmonically.

VI. If from the middle point of an arc of a circle straight lines be drawn cutting its chord and meeting the circumference, the rectangles of these lines and their respective segments between the point and the chord shall be constant.

VII. If a tangent to a circle meet two others drawn at the extremities of a diameter, the square of the former exceeds the squares of the latter by twice the square of the radius.

VIII. A circular arc of $22^{\circ} 30'$ is 20 feet. Find the radius of the circle and the circular measure of the arc.

IX. The radius of the base of a cone is $1\frac{1}{2}$ times that of the base of a hemisphere. What must be the height of the cone that it may equal the hemisphere in volume?

X. A pyramid, weighing l pounds, and of height h , is cut by a plane parallel to its base, at a distance $\frac{h}{3}$ from it, and the upper portion is removed: find the weight of the remainder.

XI. Find the length of a degree of longitude in the parallel of Halifax ($l=44^{\circ} 39' N.$) the Earth being supposed a sphere.

I. Prove that the arithmetical mean between two quantities a and b is greater than the Geometric.

II. $5x + 11y = 254$: find the integer values of x and y .

III. Prove the Binomial Theorem for negative indices,

with 5 terms of the expansion of $(a^2 + b^2x^2)^{\frac{1}{4}}$

IV. In the expansion of $(a+b)^n$, n being integer, prove that the number of the term is $n+1$, and that coefficients of terms equidistant from the extremes are equal.

V. Prove $\log N = \frac{1}{10} \frac{\log N}{\log 10} = \frac{1}{e} \log_e N$: and knowing $M = .4343 -$

find $\log_{10} 11$ from the logarithmic series.

VI. In a lottery, there were 25 tickets, 2 only being prizes, of £100 and £50 respectively. A speculator bought 5 of them. Find the numerical value of his chance of holding at least one prize, and the money he ought to have paid for the tickets.

VII. In any plane triangle, prove $\frac{a+b}{a-b} = \frac{\tan \frac{1}{2}(A+B)}{\tan \frac{1}{2}(A-B)}$.

VIII. Prove also $\tan A + \tan B + \tan C = \tan A \tan B \tan C$ and $\sin A + \sin B + \sin C = 4 \cos \frac{A}{2} \cos \frac{B}{2} \cos \frac{C}{2}$

IX. Prove $(a+b) \cos C + (b+c) \cos A + (a+c) \cos B = a+b+c$.

X. Given $\sin(x+a) + \cos(x+a) = \sin(x-a) + \cos(x-a)$, to find x .

XI. Prove $2 \tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{7} = 45^\circ$

XII. In a level plain, how would you, with nothing but a measuring line, find the distance of any inaccessible object.

XIII. Prove that $r r' r'' r''' = S^2$: and if the sides of a triangle are 3, 5, 6; find R and r .

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

WEDNESDAY, MARCH 20TH, 10 A. M., TO 12½ P. M.

THIRD YEAR.—MATHEMATICS.

1. Write Napier's Rules of the five circular parts, and shew how they are applied.

2. From $\cos c = \cos a \cos b$, and $\cos A = \cos a \sin B$, deduce some conclusions with respect to the sides and angles of a right angled spherical triangle.

3. Assuming DeMoivre's Theorem for m a positive integer,, prove it for m a negative integer.

4. Find the exponential values of $\sin x$ and $\cos x$.

5. Resolve $\sin x$ into a product of Quadratic factors.

6. If $A + B\sqrt{-1} = \log(m + n\sqrt{-1})$, prove $\tan B = \frac{n}{m}$

7. Sum $\cos x + \cos 2x + \cos 3x + \&c.$, to n terms.

8. Prove $\cos y - \frac{1}{2} \cos 2y + \frac{1}{3} \cos 3y - \&c = \log(2 \cos \frac{y}{2})$

9. If in any function $f(x)$, the substitution of a and b severally give results, the one positive, the other negative; an odd number of roots of the equation $f(x) = 0$ lies between a and b .

10. Imaginary roots enter an equation in pairs.

11. Given that $x^3 - 3x^2 - 9x + 27 = 0$ has equal roots: find all the roots.

12. Prove, by Horner's method, that one of the roots of the Equation $x^3 + 3x^2 - 2x - 5 = 0$, is $1.33+$

13. In the last Equation, find the sum of the reciprocals of the roots, and the sum of the squares of the roots.

14. Find, by Newton's method a superior limit to the positive roots of the Equation $x^4 - 5x^2 + 6x + 1 = 0$.

1. The general Equation of the first degree $Ax + By + C = 0$ represents a straight line.
2. Find the Equation to the straight line which passes through the point $(a, -b)$ and is perpendicular to the line $ay + bx = ab$.
3. Determine and draw the circle $x^2 - y^2 + 6x - 3y - 1 = 0$.
4. A point moves so that the sum of the squares of its distances from the sides of a square is constant. Prove that its locus is a circle.
5. Find the Equation to the chord of contact in a parabola, and prove that if it pass through a fixed point in the axis of X, the locus of the intersection of the tangents is a straight line parallel to the axis of Y.
6. A tangent is drawn to a parabola at a point at which the ordinate = the latus rectum: find the angle it makes with the axis of X, the subtangent, and the length of the perpendicular from the focus.
7. If lines touch a parabola, so that the sum of the tangents of the angles which they make with the axis of X is constant, they intersect always in a straight line.
8. Differentiate $x^m \cos nx$, $\tan \sqrt{1-x}$ and $\log^2(a-bx)$.
9. Find geometrically the differentials of $\sin x$ and $\cos x$, and from these deduce those of the other circular functions.
10. Assuming Maclaurin's Theorem, find the series in x for $\sin x$ and $\log(1+x)$.
11. If $u = f(u)$ be a maximum, prove $\frac{du}{dx} = 0$, and $\frac{d^2u}{dx^2}$ negative. Prove also the conditions, when u is a minimum.
12. Cut the greatest rectangle from a given triangle.
13. Show that a cylinder of given volume has the least surface when the diameter of the base = the height.
14. Find the general equation to the tangent to any curve, and prove that the curve $y = a \tan \frac{-1}{a} x$ passes through the origin, making an angle of 45° with the axis of X.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

FRIDAY, MARCH 31ST, FROM 10 A.M., TO 1 P.M.

LOGIC.

EXAMINER.....THE VERY REV. THE PRINCIPAL.

1. Explain the difference between the "Extension" and the "Intension" of a conception; and the ratio in which they stand to each other.

2. When is a term said to be distributed?

3. State the rules which should be observed in *Division*.

4. What are the characteristics of *Intuitive Judgment*?

5. What is the *quantity* and *quality* of the proposition: "All men are not orators?"

6. What propositions distribute the predicate?

7. Enumerate the parts of a *Hypothetical* proposition.

8. State and explain the *Dictum* on which the validity of the Syllogism depends.

9. Give the rules of the Syllogism.

10. Give the Figure and Mood of the following Syllogism:—

"An upright man will not equivocate;

But A B has equivocated;

Therefore A B is not an upright man."

11. What logical rule is violated in the following Syllogism:

"If the Koran be true, Solomon was a wise man.

But the Koran is not true:

Therefore Soloman*was not a wise man."

12. Express at full length the following Enthymeme:

"Therefore doth my Father love me, because I lay down my life for my sheep."

13. What is the difference between "Deductive" and "Inductive" reasoning?

14. For what purposes is inductive reasoning generally employed?

15. What are we to understand by the "cause" of any given fact or thing?

16. When is an incomplete enumeration of particulars sufficient to establish a general law?

17. How are causes to be ascertained amidst a number of concomitant phenomena.

18. A. B. sailed for New Zealand in a fleet of twelve ships, three of which were lost in a storm. Of the crews of the nine ships that escaped the storm, three-fourths perished from exposure. What is the probability that A. B. has survived both calamities?

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

THURSDAY, MARCH 30TH, FROM 10 A.M., TO 1 P.M.

METAPHYSICS, ESTHETICS, AND BELLES LETTRES.

- 1st.—What was the prevailing character of ancient speculation?
- 2nd.—What is the import of Plato's distinction between "noumena" and "phenomena," and how did he account for the latter?
- 3rd.—What modern question did this virtually involve? How may this be regarded as the insoluble problem?
- 4th.—What was Aristotle's distribution of Mind? How does it differ from Kant's?
- 5th.—State the more complete distribution of Sir Wm. Hamilton as founded upon Kant's?
- 6th.—What is Sir Wm. Hamilton's classification of the faculties of Mind?
- 7th.—Upon what other principle may the Mind be regarded as distinguished from that of possessing faculties?
- 8th.—How may the mental phenomena be classified accordingly?
- 9th.—Specify the intellectual intuitions. How else are these denominated?
- 10th.—What is Locke's account of the Idea of Substance? How does Mansel derive the idea?
- 11th.—What is involved in the intuition of personality? What may be contended, from this, against the materialist?
- 12th.—How do we obtain the knowledge of the Non-Ego? What is the amount of this knowledge? Does it involve the whole of perception?
- 13th.—For what does Sir Wm. Hamilton contend, as implied in perception?
- 14th.—How may the theories on the subject of Causation be classified?
- 15th.—State Sir Wm. Hamilton's theory. In what does it differ from other theories, and how is it not a theory properly of *causation*?
- 16th.—What are the laws of mind? What are the strictly logical, and what the esthetic, laws?
- 17th.—What is the process in the formation of general concepts?
- 18th.—What is the generalizing process as distinguished from classification simply?

19th.—What two different forms of reasoning may be grounded on the two different quantities in concepts, and which of them is reasoning proper?

20th.—Define the law of Analogy. Give a classification of the different analogies. Which of these affords analogical reasoning?

21st.—Into what may Imagination be analyzed? What law of mind is peculiarly concerned in the working of imagination? How may imagination be defined, viewed on the emotional side, and how on the intellectual?

22nd.—Under what twofold character have the emotions been regarded?

23rd.—What is the division we have adopted?

24th. Enumerate the specific emotions under the generic states?

25th. To which class is the emotion of the Beautiful and the Sublime to be referred?

26th. Define the principal theories of the Beautiful and the Sublime?

27th. What is the idea implied in Art? Distinguish Poetry from Art? In what respect is it an Art?

28th. What is Cousin's estimate of the Arts in point of expressiveness?

29th. In what respects may Sculpture be regarded as entitled to take the precedence of Painting?

30th. Classify the styles of Painting and Poetry according to the subjects of them respectively.

31st. Into what two great schools may Poets and Poetry be divided? Which of these predominates in modern times?

32nd. Give the names of the more distinguished painters, with the order to which they belong in respect of subject. Give the names of the more distinguished poets according to the same distribution.

33rd. State the nature of metaphor, of comparison, of prosopœia, of antithesis, of climax, of hyperbole. Define allegory.

DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

FRIDAY, MARCH 31ST, FROM 10 A.M., TO 1 P.M.

FIRST YEAR.—ELEMENTARY CHEMISTRY.

1. Explain what is meant by, (1) the law of constant proportion, (2) the law of reciprocal proportion, (3) the law of multiple proportion, and (4) the law of compound proportion.

2. What is the chemical constitution of the atmosphere? Describe minutely its chief constituents?

3. Explain the theory of Spectrum Analysis? Give details of the method of applying it, and mention some of the results recently obtained.

4. What are the essential characters respectively of (1) an Element, (2) an Oxide, (3) a Base, (4) an Alkali, (5) an Acid, (6) a Salt, (7) a Metal, (8) an Alloy, (9) an Amalgam? Give an example of each and point out their relations to each other.

5. Does a symbol signify more or less than the mere name of an element? Explain very precisely the object sought in using symbols. What are the rules for the construction of chemical formulæ. Illustrate by a few examples of complicated compounds.

6. What is the law of combination by volume? To what bodies, and in what state, does it apply? The specific gravity of a gas or vapour is 2.470; its equivalent number 35.5; what is its equivalent volume? What are the chief features of Gerhardt's system of notation as regards inorganic compounds.

7. Give the equivalent numbers of the following elements:—

O, H, N, C, Cl, S, P, K, Ca, Fe, Hg.

8. What is meant by the terms monobasic, bibasic, and tribasic, and to what class of compounds are they applied?

PRACTICAL CHEMISTRY.

1. Give an outline of the general method employed by Fresenius for separating the bases belonging to different groups.

2. Give satisfactory tests for Salts in solution of

CuO , PbO , SbO_3 , Fe_2O_3 , HgO , BaO , NH_4O .

3. Describe minutely Marsh's process for the detection of Arsenic. Give likewise a quantitative method, and the calculations required.

4. What is the most satisfactory test or tests for Strychnia?

5. How are metals classified with respect to the action of Nitric Acid upon them?

6. Give tests for Sulphuric, Nitric, Hydrochloric, and Carbonic Acids.

7. When Potash is thrown down with Pt Cl_2 , what is the formula of the compound thus formed, and what is the calculation required to give the amount of KO. Calculate the amount on the supposition that you have 6 grains of the precipitate.

8. Ascertain what Base and Acid are present in the solution placed before you for analysis.

9. In 25 grains of CaO , CO_2 , how much lime?

