

CALENDAR

DALHOUSIE COLLEGE

AND

UNIVERSITY;

HALIFAX, NOVA SCOTIA.

SESSION 1876-7.

HALIFAX:

PRINTED FOR THE UNIVERSITY, BY NOVA SCOTIA PRINTING COMPANY.

1876.

NOTE.

The University Calendar for the Year 1876-7, does not differ in any marked respect from the Calendars of recent years. The minor changes introduced into the Calendar from year to year, are believed by the Governors and Senate to tend to the development and increased educational efficiency of the Curriculum; and the present Calendar has no more than an ordinary share of such changes. The attention of Students, however, especially of such as intend to enter College, is drawn to the fact that, in consequence of the Act passed by the Legislature last Session, providing for the creation of a new Examining and Degree-Confering Body to be called "the University of Illinois," the Curriculum as set forth in this Calendar may hereafter be modified. Whatever changes may be introduced, the interests of Students that have entered College under existing arrangements will be carefully guarded.

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University Calendar,

1876-7.

WINTER SESSION.

1876.		
Oct. 20.	Fr.	Meeting of Board of Governors.
25.	W.	Winter Session begins. Matriculation Examinations in Classics and Mathematics at 10 A. M. Examination for Scholarships.
26.	Tu.	Matriculation Examinations continued, (English), Supplementary Examinations, at 10 A. M.
27.	Fr.	Meeting of Senate at 10 A. M. Matriculation, Registration, and Library Examinations at 11 A. M. Convocation at 3 P. M.
30.	Mo.	Arts Classes opened. Class Tickets issued. Entrance Examinations in Ancient History and Geography for Second and Third Years at 3 P. M.
Nov. 5.	W.	Anniversary of opening of the College in 1828. Final Matriculation and Supplementary Examinations at 3 P. M.
9.	Tu.	Meeting of Senate at 4 P. M.
Dec. 5.	Tu.	Meeting of Senate at 1 P. M.
22.	Fr.	Christmas Vacation begins.
1877.		
Jan. 4.	Tu.	Class lectures resumed.
5.	Fr.	Supplementary Examinations in Ancient History and Geography at 1 P. M.
9.	Tu.	Meeting of Senate at 1 P. M.
16.	Tu.	College established, 1828.
20.	Fr.	Meeting of Board of Governors.
Feb. 6.	Tu.	Meeting of Senate at 1 P. M.
14.	W.	Asa Wednesday. No Lectures.
Mar. 6.	Tu.	Meeting of Senate at 1 P. M.
21.	W.	George Hamner, Earl of Dalhousie, founder of the College, died 1838.
23.	Fr.	Last day for receiving Essays in competition for "Lauris" Prize.
26.	Tu.	Good Friday. No Lectures.
Apr. 3.	Tu.	Meeting of Senate at 1 P. M.
6.	Fr.	Last day of Class lectures. Last day for returning Library Books.
11.	W.	Examinations in Latin, 9 A. M. Honor Examinations in Classics, English, Mathematics, and Extra Latin, 3 P. M.
12.	Tu.	Examinations in Greek and Mathematics Physics, 4th year, 9 A. M. Honor Classics, Extra Greek, 1st and 2nd years, 3 P. M.
13.	Fr.	Examinations in Logic and Metaphysics, 1 A. M.
16.	Mo.	Examinations in Mathematics and Mathematical Physics, 3rd year, Honor Classics, Honor Mathematics, Honor English, 3 A. M. Examinations in Mathematics, and Honor Examinations continued, 9 A. M.
17.	Tu.	Examinations in Bible and Experimental Physics, 9 A. M. Honor Classics, 3 P. M.
23.	W.	Examinations in Rhetoric and History, 9 A. M. Examinations in Early English History and Anglo-Saxon, 3 P. M.
24.	Tu.	Examinations in Chemistry, Constitutional History, and English Language, 1 A. M. Honor Classics, Honor Mathematics, and Extra Mathematics, 3rd year, 3 P. M.
26.	Fr.	Examinations in French and German, 9 A. M.
27.	Sat.	Competitors for "Young's" Election Prize, 10 A. M.
28.	Mo.	Meeting of Senate, 10 A. M.
31.	Tu.	Results of Examinations declared.
25.	W.	Meeting of Convocation, 1 P. M.

SUMMER SESSION.

April 26.	Mo.	Summer Session opens. Registrations, 10 A. M. Meeting of Senate at 11 A. M.
May 1.	Tu.	Lectures begin.
23.	W.	Formation Stone of College laid, 1829.
24.	Th.	Queen's Birthday. No Lectures.
June 6.	Th.	Meeting of Senate at 1 P. M.
20.	W.	Accession of Queen Victoria.
21.	Th.	Notice served, 1169.
22.	Fr.	Lectures close.
28.	Mo.	Examinations.
29.	Tu.	Examinations. Session ends.

Dalhousie College and University.

BOARD OF GOVERNORS.

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Junior—JOHN WILSON.

Faculty of Arts.

§ I.—WINTER SESSION.

The Winter Session of 1876-77 will commence on Wednesday, Oct. 25th, 1876, and end on Wednesday, April 25th, 1877.

§ II.—ADMISSION OF STUDENTS.

Students may enter the College,

1. As Undergraduates, with the intention of applying for a University degree at the end of their course; or
2. As General Students who do not look forward to a University Degree.

The usual Course for Undergraduates extends over Four Winter Sessions. Students taking this Course are required to pass the Matriculation Examination of the First Year (see § III), and take the classes prescribed for their respective Courses.

But students may shorten their attendance by one year, by passing the Matriculation Examination of the Second Year (see § III), and taking the usual Undergraduate Course for the Second, Third, and Fourth Years.

The Matriculation Examinations this year will begin on Oct. 25th, at 10 o'clock, A. M. Candidates are expected to bring their own writing materials, except paper.

General Students are not required to pass preliminary Examination, and may attend such classes as they choose.

No person can be admitted as an Undergraduate after ten days from the opening of the classes, without the special permission of the Senate.

Undergraduates from other Universities will, on producing satisfactory certificates, be admitted to similar standing in this University, if, on Examination, they be found qualified to enter the classes proper to their year.

§ III.—MATRICULATION EXAMINATIONS.

FOR THE FIRST YEAR. (*Four Years' Course.*)

The Subjects of Examination for entrance into the First Year of the Course are:

- I. IN CLASSICS.—Latin Grammar, Greek Grammar, one Latin, one Greek Author.
Latin.—Caesar, one book; Virgil, one book; Cicero, two Orations; Homer, one book of Odes.
Greek.—Xenophon, one book; Homer, one book; Lucian's Select Dialogues; New Testament, one Gospel.

The Books in which Candidates for Professors' Scholarships will be examined, will be prescribed from year to year. For session 1874-77, they are in Latin, OMMAN'S COMMENTARII, Book V., in Greek, NEWTON'S ARITHMETIC, Book I.

- II. IN MATHEMATICS.—Arithmetic; BOBILLI'S ELEMENTS of Geometry, Book I.; Algebra, Simple Rules, and Simple Equations of one unknown quantity, not involving Surds.
- III. IN KNOWLEDGE.—Grammar; History of England; Geography; Composition.

Special stress will be laid upon accuracy in Latin and Greek Grammar.

FOR THE SECOND YEAR. (*Three Years' Course.*)

In order to Matriculate for the Three Years' Course, a Student must pass an Examination,—

1. In the *Classics* of the first year as specified in § XIV, or their equivalents.
2. In the *Mathematics* of the first year as specified in § XIV.
3. In *English Grammar, English History, Geography* and *Composition*.
4. In *Roman History and Ancient Geography*, as specified in § XIV.

§ IV.—COURSE OF STUDY.

COURSE FOR DEGREE OF B. A.

First Year.—(1) Latin. (2) Greek. (3) Mathematics. (4) English Language and Rhetoric.

For First or Second Class in Latin or Greek, extra work is prescribed, and special stress is laid upon accuracy in Grammar. (See § XIV.)

For First or Second class in Rhetoric extra work is required.

Second Year.—(1) Latin. (2) Greek. (3) Mathematics. (4) Chemistry. (5) Logic and Psychology.

For First or Second Class in Latin or Greek, extra work is prescribed, and for First or Second Class in Mathematics an additional hour a week is required. (See § XIV.)

Undergraduates of the Second Year are required to pass an Examination in Roman History and Ancient Geography, on the first Monday of the Winter Session. (See § XIV.)

Third Year.—(1) Latin. (2) Mathematical Physics. (3) Experimental Physics. (4) Metaphysics. (5) French or German. (6) Greek or Chemistry.

Undergraduates of the Third Year are required to pass an Examination in Greek History and Ancient Geography on the first Monday of the Winter Session. (See § XIV.)

Fourth Year.—(1) Latin. (2) Ethics and Political Economy. (3) History. (4) French or German. (5) Mathematical Physics or Greek.

A Student must take the same Modern Language as part of his Undergraduate Course in the Third and Fourth Years.

For First or Second Class in History, extra work is required.

§ V.—HONOUR COURSES.

Honour Courses are intended for those Students whose tastes and ability lead them to prosecute special subjects of the Curriculum, and remissions of classes are granted to Students studying such Course or Courses.

Honour Courses are provided in the following groups of subjects:—(1) Classics; (2) Mathematics and Physics; (3) Mental and Moral Philosophy; (4) History, Political Economy, and English Literature and Language. Instruction of an advanced kind is provided in these subjects during the third and fourth years of the Curriculum.

Examinations in these Courses are held at the final Examinations for the Degree of B. A.; and a Student passing First or Second Class in any of the above groups of subjects obtains the Degree of B. A. with Honours in such subjects. But first Class Honours shall not be awarded to any one who has not passed First Class in the corresponding subjects of the Ordinary Course of the Fourth Year; nor Second Class Honours to one who has not passed Second Class in the Ordinary.

No Student will be allowed to enter on an Honour Course who has not stood in the First or Second Class at the previous Examination in the relative part of the Ordinary Course.

A Student taking an Honour Course, but failing to obtain Honours, will receive the Ordinary Degree, if his Examination in the Course be approved of.

A Student of the Third Year, for Honours, (see § XV).—

In *Classics*, may omit the Mathematical Physics of the year; In *Mathematics and Physics*, in *Mental and Moral Philosophy*, in *History, Political Economy, &c.*, may omit the sixth subject of the Ordinary Course, (see § IV).

A Student of the Fourth Year studying for Honours,

In *Classics*, may omit Mathematical Physics, and either Ethics and Political Economy or History;

In *Mathematics*, may omit either *Latin* or *Ethics* and *Political Economy*;

In *Mental and Moral Philosophy*, or in *History, Political Economy, &c.*, may omit the fifth (*selective*) subject of the Ordinary Course, (see § IV).

§ VI.—SUMMER SESSION.

The Summer Session will commence on Tuesday, 1st May, 1877, and close at the end of June.

Classes will be open for instruction in the following subjects.

Classics.	Optics.
Theory of Equations.	Chemistry.
Applied Logic.	English Literature.
Modern Languages.	

§ VII.—FEES.

The Fee to each Professor, whose class or classes a Student enters, is *six dollars* for the Session.

An Undergraduate, who has completed two years of his course, may attend the Classics and Mathematics during the remainder of his Undergraduate Course without the payment of additional Fees.

Mathematical and Experimental Physics constitute a separate class.

General Students pay a fee for every class they attend.

Practical Chemistry, three months' course (optional), *fee, six dollars*. Students taking this class are required to provide their own materials. The use of the larger articles of apparatus will be given in the Laboratory free of expense.

In addition to Class Fees, there is a Matriculation Fee of *two dollars*, payable by Undergraduates at their first entrance. General Students pay an annual Registration Fee of *one dollar*.

Both Undergraduates and General Students are also required, at the beginning of each Session, to pay a Library Fee of *one dollar*, which entitles to the use of the Library for the year.

Matriculation or Registration Tickets and Class Tickets must be taken out on the first day of Lectures; no Student being allowed to attend a Class without them.

The total fee of Undergraduates, who take the Ordinary B. A. Course in Arts, are as follows:—

Classes of First Year, with Library and Matriculation Fee.....	\$21 00
Second Year, with Library Fee.....	22 00
Third " ".....	12 00
Fourth " ".....	15 00

§ VIII.—GRADUATION.

DEGREE OF B. A.

The Degree of B. A. may be obtained by passing the proper Matriculation Examinations, attending the prescribed Courses of Lectures, and passing the Sessional Examinations at the close of the several years.

Undergraduates have also to pass entrance Examinations, as set forth in § IV.

The fee for Diploma, payable before the final Sessional Examinations, is *five dollars*. Fee returned in case of failure at the Examinations.

DEGREE OF M. A.

A Bachelor of Arts, of at least three years' standing, maintaining meanwhile a good reputation, shall be entitled to the Degree of M. A., on producing an approved Thesis: subject to be first submitted to the Senate.

Fee for diploma, which must accompany the Thesis, *twenty dollars*, except in case of those who entered as Undergraduates prior to 1869, who pay *five dollars*. Thesis to be handed in before the 30th of March.

§ IX.—REGULATIONS FOR EXAMINATIONS.

1. If an Undergraduate absent himself from any University Examination, except for such cause as may be held good by the Senate, he will lose his year.

2. If an Undergraduate fail to pass in any subject at the Sessional Examinations, he will be allowed a Supplementary Examination on the first Thursday of the following Winter Session, or of a subsequent Winter Session by the permission of the Senate, on giving notice to the Secretary of the Senate at or before the opening of the Winter Session; but failure in more than two subjects will involve the loss of the year. N. B.—In the application of this Rule, Mathematics will be reckoned as *two* subjects, and Latin and Greek each *one* subject.

3. In all cases, a Student who presents himself for Supplementary Examination on any day except that specified in the Rule, will be required to pay an extra fee of *two dollars*.

4. Undergraduates of the Second and Third Years who fail to present themselves for the Entrance Examinations in History and Ancient Geography on the day named in the Calendar, may, on payment of a fine of *two dollars*, have another day appointed them for such Examinations.

5. Students are forbidden to bring any book or manuscript into the Examination Hall, unless by direction of the Examiners, or to give or receive assistance, or to hold any com-

munication at the Examinations. If a Student violate this rule, he will lose his Seasonal Examinations for the year; and it shall be at the discretion of the Senate whether he be allowed Supplementary Examinations.

d. Students who pass the Examinations in the several subjects of the respective years, are arranged in three classes, First Class, Second Class, and Pass, according to the merit of their answers in these subjects.

IX.—PROFESSORS' SCHOLARSHIPS.

Two Scholarships, entitling to free attendance on all the classes of the Undergraduate course so long as the holders maintain a First or Second Rank at the Seasonal Examinations, are offered by the Professors for competition this year; the competition to take place at the Matriculation Examinations. For subjects of Examination, see § III.

XI.—PRIZES, CERTIFICATES OF MERIT, AND MEDALS.

THE UNIVERSITY PRIZES.

These Prizes are awarded to those Undergraduates who stand first in the several subjects at the Seasonal Examinations, provided they occupy positions in the First or Second Class, and have passed in all the other subjects proper to their year.

THE ST. ANDREW'S PRIZE.

This Prize will be awarded this year to the Student who stands first in Classics at the Seasonal Examinations of the Second Year.

YOUNG PRIZES.

Two Elocutions Prizes of \$20 and \$10 respectively, are this year offered by the HON. SIR WM. YOUNG, Knt, Chief Justice of Nova Scotia, and are open for competition to all Arts Students. These prizes will be competed for at the close of the Winter Session. A Student to whom one of these Prizes has been awarded is disqualified for subsequent competition.

LAURIE PRIZE.

A Prize of \$20 is offered by Colonel Laurie, Oakfield, for the best Essay on "Public Roads in Nova Scotia; on what system can their construction and maintenance be best provided for in the public interest?"

Essays to be sent in not later than the 16th March, 1877, each signed with a motto, and accompanied with a sealed envelope, bearing the motto and containing the name of the writer.

THE WAVELBY BURSARY.

This Bursary, of the value of \$60 annually for two years, has been founded by an unknown Benefactor, whose object in so doing is to encourage the studies of the Curriculum, especially Mathematics. As announced in the Calendar of last year, it will hereafter alternate with the North British Society Bursary, and be competed for at the Seasonal Examinations of the Second Year. The next competition will take place in April, 1877, when the Bursary will be awarded to the Student who stands highest at the Examinations. The scale of reckoning will be Mathematics, 300; Classics, Chemistry, each 150; Logic, 100.

THE ALUMNI ASSOCIATION PRIZES.

The Alumni Association, with increased liberality, have this year provided Four Prizes: two for students of the first year, and two for those of the third year. The First prizes are each \$30; the Second, each \$20. These Prizes will be awarded to the two students in these years who stand highest at the Seasonal Examinations; the marks being reckoned according to a scale defined by the Association, which will be published at the beginning of the Session, and of which an important feature is that values will be counted for Class Essays in the subjects of Rhetoric and Metaphysics.

GOVERNOR GENERAL'S MEDALS.

His Excellency, Earl Dufferin, Governor General of Canada has been pleased to offer a gold and silver medal for competition during his tenancy of office. These Medals will be awarded to the two Students of the Fourth Year who stand highest at the Final Examinations for the Degree of B. A.

GRADUATES PRIZE.

This Prize, of the value of \$30, given by a Graduate, is continued for this year; and will be awarded to the Student of the Graduating Class who, not studying for honors, obtains the highest total of marks at the Seasonal Examinations in the subjects proper to the year.

CERTIFICATES OF MERIT.

Certificates of merit of the First or Second Rank will be given to Undergraduates who have respectively obtained a First or Second Class standing in the aggregate of the branches of study proper to their year.

§ XII.—ATTENDANCE AND CONDUCT.

1. All Undergraduates, and General Students attending more classes than one, are required to provide themselves with cap and gown, and wear them in going to and from College. Gowns are to be worn at Lectures, and at all meetings of the University.

2. Attendance upon all classes of the year, except those announced as optional, shall be imperative on all Undergraduates.

3. A Class Book will be kept by each Professor, in which the presence or absence of Students will be carefully noted.

4. Professors will mark the presence or absence of Students immediately before commencing the work of the class, and will note as absent those who enter thereafter, unless satisfactory reasons be assigned.

5. Absence without sufficient excuse, or lateness, or inattention or disorder in the Class Room, if persisted in after due admonition by the Professor or the discipline proper to the class, will be reported to the Senate.

6. The amount of absence which shall disqualify for the keeping of a Session will be determined by the Senate.

7. Injuries to the building or furniture will be repaired at the expense of the person or persons by whom they have been caused; and such other penalty will be imposed as the Senate may think proper.

8. While in the College, or going to or from it, Students must conduct themselves in an orderly manner. Any Professor observing any improper conduct in a Student will admonish him, and, if necessary, report to the Principal.

9. When a Student is brought before the Senate and convicted of a violation of any of these rules, the Senate may reprimand privately or in the presence of the Students, or report to the parents or guardians, or disqualify for competing for Prizes or Certificates of Merit, or report to the Governors for suspension or expulsion.

10. Students not residing with parents or guardians must report to the Principal their places of residence within one week after their entering College, and the Principal may disallow such residence if he see good cause. Any change of residence must also be reported.

11. It is expected that every Student will attend Divine worship regularly, in one of the city churches or chapels.

§ XIII.—THE LIBRARY.

The Library consists of a careful selection of the most useful books in each department of study embraced in the University course. There are likewise a few works in general literature. The Library embraces in all upwards of 1600 volumes. All

Students are entitled to the use of the Books, on payment of the annual fee of *one dollar*.

§ XIV.—ALUMNI ASSOCIATION.

This Association, now incorporated by Act of the Legislature, has now entered upon the sixth year of its existence, and gives satisfactory promise of future prosperity. The ends it has in view are, to strengthen the bonds of fellowship among the Alumni, to unite them in the endeavor to promote Higher Education in these Provinces, and specially to extend the influence and usefulness of their *Alma Mater*.

Hitherto the only assistance they have lent the University has been the furnishing of Prizes for competition to Undergraduates at the Sessional Examinations, (see § XI.), but it is expected that the time is not distant when the Association shall have developed into an important adjunct to the University. Since the recent enlargement of the Board of Governors the Association is represented on the Board by their President, and thus has some direct share in the University management. The present Executive Committee is meantime empowered to take such steps as shall seem fitted to promote the purposes of the Association.

Undergraduates of more than two years' standing, and General Students who have attended Classes for at least two years, are qualified for admission to the Association; and it is hoped that before long every Graduate at least will have been enrolled in the List of Members.

The annual meeting of the Association takes place on the evening of Convocation Day, at the close of the Winter Session.

Office-bearers for the present year:

President.....	R. SEDGWICK, B. A.
Vice-President.....	J. McC. STEWART, B. A.
Secretary.....	F. H. BEAL, B. A.
Treasurer.....	JAS. FORBENT, M. A.
C. D. McDONALD, B. A.	} <i>To compose the Executive Committee together with the officers</i>
W. S. DUELL, B. A.	
L. H. JORDAN, B. A.	

§ XV.—ORDINARY COURSE FOR B. A.

CLASSICS.

LATIN.

FIRST YEAR.

Caeser: First Philippic.
*Third Oration against Catiline.
Virgil: Aeneid, Book VI.
Composition: Principia Latina, Part IV.

SECOND YEAR.

Livy: Book I., chaps. 1-30. * Book I., chaps. 30-60.
Horace: Odes, Book I.
Composition: Principia Latina, Part IV.

† THIRD AND FOURTH YEARS.

Horace: Satires, Book I., 3, 4, 5, 6, 7; Book II., 6, 7, 8.
Terence: Andria.
Composition: Principia Latina, Part V.
Philology: Outline of Comparative Philology.

GREEK.

FIRST YEAR.

Lucian: Select Dialogues.
*Demosthenes: First Olynthiac.

SECOND YEAR.

Herodotus: Book I., secs. 90-120. * Book II., secs. 14-55 and 65-90.
Homer: Odysseey, Book IX.
Composition: Initia Graeca, Part III.

† THIRD AND FOURTH YEARS.

Euripides: Alcestea.
Aeschylus: Prometheus Vinceta.
Composition: Initia Graeca, Part III.

‡ ANCIENT HISTORY AND GEOGRAPHY.

SECOND YEAR.—History of Rome, to R. C. III. Geography, Italia, Sicilia, Gallia, Britannia.

THIRD YEAR.—History of Greece to the Roman Conquest. Geography of Graecia, Africa, Asia.
Books recommended: Liddell's History of Rome; Smith's History of Greece; Millar's Classical Geography.

MATHEMATICS AND PHYSICS.

FIRST YEAR.

ARITHMETIC.—Revision of the Theory of Proportion, Vulgar and Decimal Fractions.

* Students seeking a First or Second Class at the Sessional Examinations are examined in this additional work, which is not read in class.

† Passages taken from works not read in the course will be set for translation, to Students seeking a First or Second Class at the Sessional Examination in these years.

‡ The Examinations in these subjects will be held at the beginning of the Winter Session. (See § IV.)

ALGEBRA.—Common Measure, Involution, Evolution, the Arithmetical Extraction of Roots, Fractions, Equations of the First and Second Degree, Proportion, Inequalities, Variation, Progressions.

GEOMETRY.—First Book of Euclid revised; Second, Third, and Fourth Books; Definitions of Fifth, and Sixth Book to the Eighth Proposition, with Geometrical Exercises and Practical applications.
PLANE TRIGONOMETRY.—Solution of Triangles.

SECOND YEAR.

GEOMETRY.—Sixth Book of Euclid finished; Geometrical Exercises continued; Geometrical Drawing.

PLANE TRIGONOMETRY.—Circular and Gradual Measure; Functions of sine and Cosines of angles, &c.; Distance of the sun and angles of triangles; Measurement of Heights and Distances; Elementary Problems in Navigation; Use of Logarithms.

ALGEBRA.—Simple Indeterminate Equations; Binomial Theorem; Properties of Logarithms; Compound Interest; Annuities.

EXTRA.

GEOMETRY.—21 Propositions of the Eleventh Book of Euclid; Geometrical Exercises.

TRIGONOMETRY.—Extension of Ordinary Course.

ALGEBRA.—Permutations, Combinations, Probabilities, Life Assurance, Investigation of Binomial Theorem and Theory of Logarithms, Indeterminate Coefficients, spherical Trigonometry, with applications to Astronomy.

EXPERIMENTAL PHYSICS.

(Third Year.)—Text Book: Galvani's Physics.

MATHEMATICAL PHYSICS.

(Third Year.)—Text Book: Galvani and Haughton's Manual of Mechanics.

(Fourth Year.)—Text Books: Galvani and Haughton's Manuals of Astronomy and Optics; Treatise Hydrostatics (for Galvani and Haughton's.)

ETHICS.

(Fourth Year.)—Text Books: Stewart's Active and Moral Powers of Man. Whewell's Elements of Morality.

POLITICAL ECONOMY.

(Fourth Year.)—Text Books: Mill's Political Economy; Senior's Political Economy.

LOGIC AND PSYCHOLOGY.

(Second Year.)—Text Books: Sir William Hamilton's Lectures on Logic. Prof. Lyell's "Intellect, the Emotions, and the Moral Nature."

METAPHYSICS AND AESTHETICS.

(Third Year.)—Text Books: Sir William Hamilton's Lectures on Metaphysics. Huxley's Metaphysics. Lever's Biographical History of Philosophy. Cousin on The Beautiful. Alison's Essays on the Nature and Principles of Taste.

CHEMISTRY.

(Second Year.)—Text Book: Fownes' Manual of Chemistry, the whole of the Inorganic part (excepting Phosphorus), and a portion of the Organic.

(Third Year.)—Same Text Book, including whole of the Organic chemistry.

ANALYTICAL CHEMISTRY.

Marquand's Practical Chemistry; Fresenius's Qualitative and Quantitative Analysis.

RHETORIC.

FIRST YEAR.

RHETORIC.—Text Books: Quintilian's Institutes of Oratory. Whately's Elements of Rhetoric. Campbell's Philosophy of Rhetoric. Essays and exercises on the principles of Rhetoric, weekly.
EXERCISES.—Exercises every week after the Christmas holidays. Books recommended: Porter's Analysis of the principles of Rhetorical delivery. Russell's Elocution. Sargent's Standard Speaker. Dunsinon Elocutionist. Nova Scotia Readers No. 6 and No. 7.

ENGLISH LANGUAGE.

FIRST YEAR.

ANGLO-SAXON.—Text Books: Comparative Grammar of the Anglo Saxon Language, F. A. Marsh, LL.D. Anglo-Saxon Reader, by F. A. Marsh, LL.D. **ENGLISH.**—Text Books: Specimens of Early English, by R. Morris, LL.D., and W. W. Skeat, M. A. Part Second. The Philology of the English Tongue, by John Earle, M. A.

HISTORY.

FOURTH YEAR.

Text Books: Gibbon's Decline and Fall of the Roman Empire. Malmán's History of Latin Christianity. Green's History of the English People. History of France. Mease's History of Germany. Sumner's Italian Republics. Hallam's Middle Ages. Taylor's Modern History.

CONSTITUTIONAL HISTORY.

FOURTH YEAR.

Text Books: Stubbs's Constitutional History. Hallam's Middle Ages. (Chapters on the English Constitution). Holme's Constitutional History.

MODERN LANGUAGES.

FRENCH.—(Third Year.)—Pérol's Grammar, (first part).—Scribe's "Valérie."
GERMAN.—(Third Year.)—Otto's German Conversation Grammar.—Adler's Reader.—Schiller's "Wilhelm Tell."
FRENCH.—(Fourth Year.)—Fénel's Grammar—(fourth part).—Molère's "Le Bourgeois Gentilhomme."
GERMAN.—(Fourth Year.)—Otto's German Conversation Grammar.—Adler's Reader.—Schiller's "Wilhelm Tell" continued.

XVI.—HONOUR COURSE.

CLASSICS.

The following course, in addition to the ordinary, is prescribed for Classical Honours in the fourth year.)

LATIN.—Plautus: Miles Gloriosus.
Terence: Heautontimorumenos.

Virgil: Georgics, Books I, IV.
Horace: Epistles, Books I, II. Ars Poetica.
Juvenal: Satires, III, X, XIII
Cicero: Tusculan Questions, Book I.

GREK.—Aeschylus: Prometheus Bound.
Sophocles: Oedipus Rex.
Homer: Iliad XVIII, XXIV.
Theophrastus: Book II.
Plato: Phaedo.

Demosthenes: De Corona.

COMPOSITION.—Latin Verse.

LITERATURE.—Müller and Donaldson's History of Ancient Greek Literature; Roman Classical Literature (Browne's); Theatre of the Greeks (Donaldson's).

PHILOLOGY.—Miller's Science of Language, Vols. I, II; Clark's Comparative Philology; Donaldson's Varroianus, chaps. VI, VII, VIII, IX, XI, XIV; Donaldson's Cratylus, Book I, chap. 3, Book III, chap. 2, Book IV., chap. 1; Lewis's Essay on the Romance Languages.

MATHEMATICS AND MATHEMATICAL PHYSICS.

TRIGONOMETRY.—DeMoivre's Theorem and Angular Analysis. Theory of Equations, with Horner's Method of Solution, and Sturm's Theorem.

ANALYTICAL GEOMETRY.—The Straight Line, the Circle, Parabola, Ellipse, Hyperbola. The Locus of the General Equation of the Second Degree between two Variables.

DIFFERENTIAL CALCULUS.—Differentiation: Theorems of Leibnitz, MacLaurin, and Taylor; Maxima and Minima of Functions of one Variable; Expansion of Functions of Two Variables; Maxima and Minima of such Functions; Radius of Curvature. Osculating Circle; Envelopes; the tracing of Curves by means of their Equations.

INTEGRAL CALCULUS.—Integration of Simple Powers; Integration by Parts, and Formulae of Reduction. Integration by Substitution, &c. Applications to determine Lengths of Curves, Surfaces, Volumes, &c.; Differential Equations. (Selected course.) Application to Physical Investigations: e. g., Centre of Gravity, Attraction Central Force, &c.

BOOKS RECOMMENDED.—(In order of Preference.)

Todhunter's Spherical Trigonometry.
Todhunter's Plane Trigonometry or Colognes (2nd part.)
Todhunter's, Puckle's, or Salmon's Conic Sections.
Hall's, Hirst's or Todhunter's Differential and Integral Calculus.
Todhunter's or Young's Theory of Equations.
Boole's Differential Equations.

EXPERIMENTAL PHYSICS.

Heat a Mode of Motion, by Tyndall.
Optics, by Sir David Brewster.
The Student's Text Book of Electricity; (Nov.)
Nichol's Physical Science (Artide, Magnetism.)

MENTAL AND MORAL PHILOSOPHY.

LOGIC.

* Sir William Hamilton's Lectures on Logic. Whately's Logic, Books II., III., IV. Mill's Logic, I, II.

METAPHYSICS AND SCIENCE.

Descartes' Principles of Philosophy. Reid's Essays, VI. Sir William Hamilton's Lectures on Metaphysics. Sir Wm. Hamilton's Philosophy of Perception and Philosophy of the Unperceptible. James Eschscholm's History of Philosophy. Combe's Philosophy of the Intellectual. Adam's Essays on the Principles of Taste. Burke on the Sublime and Beautiful.

ETHICS.

Macintosh's Dissertation on the Progress of Ethical Philosophy.
Sittler's Sermons on Human Nature, with the Preface and the Dissertation on the Nature of Virtue.
Smith's Theory of Moral Sentiments.
Toomson's Christian Theology.
Aristotle's Ethics, Book I., II., VI., X. (in English.)

HISTORY, ENGLISH LANGUAGE AND LITERATURE, AND POLITICAL ECONOMY.

HISTORY.

Bede's Ecclesiastical History of England.
Froissart's History of the Norman Conquest.
Froissart's English Conclusions.
Smith's Select Charters.
Macaulay's History of England.
Beyers's Holy Roman Empire.
Gibbon's History of Civilization.
Murray's History of France.
Mansel's History of Germany.
Malte's Northern Antiquities.

ENGLISH LANGUAGE.

ANGLO-SAXON.

Thorpe's Analacta Anglo-Saxonia.
Poems of Beowulf, the Scop or German's tale, and the Fight of Finnesburg. Bonjorn's Thorpe.
Life of St. Guthlac. Chasles Wycliffe Goodwin, M. A.
King Alfred's Anglo-Saxon Version of Orosius. Rev. Dr. Dewarath.

ENGLISH.

Specimens of Early English. Morris & Stone, part first.
Specimens of English Literature.—W. W. Elliot, M. A.
The Vision of William concerning Piers the Plowman, by William Longland.—W. W. Scott, M. A.
Canonic, Part First.—The Prologue, The Knight's Tale, The Nunne Priest's Tale, Edited by R. Morris, Editor for the R. E. T. S. Part Second: The Prologue's Tale, etc., edited by Rev. W. W. Scott, M. A.
Spenser's Faerie Queene, Books First and Second, by G. W. Kitchin, M. A.
Shakespeare's Select Plays, edited by W. G. Clark, M. A., and W. A. D. Wright, M. A. I. The Merchant of Venice; II. Richard the Second; III. Macbeth; IV. Hamlet; V. The Tempest.
Bacon, Advancement of Learning.—W. Ains Wright, M. A.
Milton, Poems.—R. G. Brown, M. A.
Dryden, Selections by W. D. Christie, M. A.
Pope, Essay on Man, Satires, and Epistles, by Mack Patison, L. D.

Degrees Conferred, April, 1876.

MASTER OF ARTS.

JOHN HEING ALLEN.

BACHELOR OF ARTS.

FRANCIS HUGH BELL,	JOHN WILSON McLEOD,
GEORGE HERBERT FULTON,	JENNIE SCOTT MONTGOMERY,
ISAAC McDONNELL,	JOHN MUNRO,
JAMES ALEXANDER MURDOCH,	JAMES McCRIGOR STEWART.

Honours, Medals, Prizes and Certificates of Merit, 1876.

B. A. HONOURS.

MATHEMATICS.

Second Rank—JAMES McG. STEWART, Cape Breton.

CLASSICS.

Second Rank—FRANCIS H. BELL, Halifax.

THE GOVERNOR GENERAL'S MEDALS.

THE GOLD MEDAL.....	Francis H. Bell, Halifax.
THE SILVER MEDAL.....	James McG. Stewart, Cape Breton.

UNIVERSITY PRIZES.

FOURTH YEAR.

CLASSICS.....	J. W. McLeod.
PHYSICS.....	J. McG. Stewart.
ETHICS.....	J. McG. Stewart.
HISTORY.....	J. McG. Stewart.
MODERN LANGUAGES.....	J. McG. Stewart.

THIRD YEAR.

CLASSICS	J. McD. Scott.
NATURAL PHILOSOPHY	1. J. Waddell.
.....	2. J. McD. Scott.
METAPHYSICS	J. H. Sinclair.
CHEMISTRY	J. H. Sinclair.
MODERN LANGUAGE	And. W. Hardman.
CHEMISTRY, (Special Prize)	W. M. Fraser.

Note.—NAT. PHILOSOPHY. W. S. Whittear, was first in point of marks, but was disqualified as a general student.

SECOND YEAR.

CLASSICS	T. A. LePage.
MATHEMATICS	T. A. LePage.
ZOOLOGY	T. A. LePage.
CHEMISTRY	T. A. LePage.

FIRST YEAR.

CLASSICS	G. McQueen, 1.
MATHEMATICS	1. Robt. McKay.
.....	2. Is. M. McLean.
HISTORIC	1. Robt. McKay.
.....	2. Is. M. McLean.
.....	3. G. W. McQueen.

CERTIFICATES OF MERIT.

FIRST CLASS:—Fourth Year—Francis H. Bell, John W. McLeod, James McD. Stewart. Third Year—John Waddell. Second Year—Robert H. Humphrey, Thomas A. LePage. First Year—Hedrick McKay, Isaac M. McLean, George W. McQueen.

SECOND CLASS:—Third Year—John M. Scott. Second Year—John H. Cameron. First Year—Bolin Crowell.

SPECIAL PRIZES.

THE SIR WM. YOUNG PRIZES for Education, were won by: 1st (\$20), Francis H. Bell, Halifax. 2nd (\$10), Colin Pittblado, Truro.

THE ST. ANDREW'S PRIZE, for the best Examination in the Mathematics of the Second Year, was won by THOMAS A. LEPAGE, Charlottetown; P. E. I.

THE WATKINS PRIZE of \$60, for highest total of marks made at the Examinations of the Third Year, was won by JOHN WADDILL, Halifax.

THE ALUMNI ASSOCIATION PRIZES of \$25 each, for the best student in the First and Third Year respectively, were won by: 1st year, JOHN WADDILL, (who, having won the Watkies Prize was disqualified by the rules of the Association for holding this Prize also. It therefore devolved to) J. H. SINCLAIR, Guysborough Co. 1st year, HEDRICK MCKAY, Pictou Co.

THE NORTH BRITISH SOCIETY'S BURSARY of \$60, ANNUALLY for Two Years, to be awarded to the best student of the Second Year, who is qualified to become a member of the Society at the proper age, was won by JOHN W. CAMERON, Antigonish.

THE MELBOURNE PRIZE of \$25, to be awarded to the student of the First Year, who obtains the second highest total of marks, was won by GEORGE WM. McQUEEN, Pictou Co.

THE GRADUATES' PRIZE of \$30, to be awarded to the student of the Fourth Year not holding for Honours, who makes the highest total of marks at the Final Examination for the degree of B.A., was won by JOHN WILSON McLEOD, Colechester Co.

Examinations, 1875-6.

SCHOLARSHIP EXAMINATION, OCT. 1875.

The Professor's Scholarships, offered for competition to Students entering as First Year's Undergraduates, were gained by

1. GEORGE McQUEEN, New Glasgow Academy.
2. ISAAC M. McLEAN, Private Study.

UNIVERSITY EXAMINATIONS.

The following Undergraduates have passed the University Examinations hereinafter mentioned:—

SUPPLEMENTARY EXAMINATIONS, OCT., 1875.

- SECOND YEAR.—Greek: Fred. Archibald, Isaac Archibald.
Mathematics: Richmond Logan.
Psychology: Wm. E. Grant.
Chemistry: St. T. McMurtry, Colin Pittblado.
- THIRD YEAR.—Metaphysics: G. H. Fulton, Jos. S. Morton.

ENTRANCE EXAMINATIONS IN ANCIENT HISTORY AND GEOGRAPHY, NOV. 1876.

THIRD YEAR.—Class 1.—Howard H. Hamilton. Class 2.—W. E. Grant, Richmond Logan, John Waddell, Colin Pittblado, J. H. Sinclair. Passed.—W. A. Mason, St. T. McMurtry, F. W. Archibald, J. McD. Scott, Is. L. Archibald.

SECOND YEAR.—Class 1.—E. R. Humphrey, E. L. Newcomb, G. W. Munro. Class 2.—J. L. George, W. S. Stewart.) equal, Robt. C. McEae, J. H. Cameron. Passed.—J. A. Cairns, J. B. Law, T. A. LePage, S. J. McKnight, R. D. Ross, All Whitman.

SUPPLEMENTARY EXAMINATIONS IN ANCIENT HISTORY AND GEOGRAPHY, JAN. 1876.

THIRD YEAR.—Passed.—R. E. Chambers, J. S. Murray.

SESSIONAL EXAMINATIONS, APRIL, 1876.

PASS LIST.

(The names are arranged alphabetically.)

FOURTH YEAR.—FINAL EXAMINATIONS FOR DEGREE OF B. A.—F. H. Bell, G. H. Fulton, Is. McDowny, J. A. McLean, J. W. McLeod, J. S. Morton, J. Munro, J. McD. Stewart.

THIRD YEAR.—Is. L. Archibald, F. W. Archibald, R. E. Chambers, Wm. Grant, H. H. Hamilton, A. W. Hardman, C. A. Laird, St. McMurtry, J. S. Murray, G. Pittblado, J. M. Scott, J. H. Sinclair, J. Waddell.

SECOND YEAR.—J. A. Cairns, J. H. Cameron, R. H. Humphrey, J. B. Law, T. A. LePage, J. A. McKean, R. C. McEae, E. L. Newcomb, W. S. Stewart, A. Whitman.

FIRST YEAR.—C. S. Cameron, Ed. Crowell, Ae. Diddle, E. Emmerson, R. M. Hunt, D. McIntyre, Robt. McKay, Is. M. McLean, An. McLeod, G. McQueen, W. P. Scott.

CLASS LISTS.

(The names are arranged in the order of merit.)

LATIN.

FOURTH YEAR.—(Final Examination for Degree of B. A.)—Class 1.—J. W. McLeod, F. H. Bell. *Passed*.—J. Munro, J. S. Munro, J. McDowell, G. H. Fulton, L. A. McLean.

THIRD YEAR.—Class 1.—Norm. Class 2.—J. McO. Scott, J. Waddell, A. W. Hamilton, J. H. Sinclair, *equal*. *Passed*.—H. H. Hamilton, Colin Fitchak, W. R. Grant, G. A. Laird, W. A. Mason, F. Archibald, E. McCurdy, (A. Archibald, J. S. Murray,) *equal*, R. B. Chambers, R. Logan.

SECOND YEAR.—Class 1.—T. A. LaPage, J. I. George, R. H. Humphrey, Class 2.—J. H. Cameron, G. W. Munro, F. S. Stewart. *Passed*.—J. Cairns, J. K. Law, E. L. Newcomb, A. Whitman, J. McKenzie, R. McKee, C. Mitchell.

FIRST YEAR.—Class 1.—G. McQueen, L. McLean. Class 2.—A. McLeod, R. McKee. *Passed*.—R. Emerson, E. Cruvell, D. McIntyre, C. S. Cameron, E. Hunt, (E. Torry, A. Dickie,) *equal*, F. Chambers, W. Scott, F. Rossiter, A. Thompson.

GREEK.

FOURTH YEAR.—(Final Examination for Degree of B. A.)—Class 1.—(F. H. Bell, J. W. McLeod,) *equal*. *Passed*.—John Munro, J. A. McLean.

THIRD YEAR.—Class 1.—J. McO. Scott. Class 2.—J. Waddell, Colin Fitchak, H. H. Hamilton. *Passed*.—(A. Laird, J. E. Murray, S. McCurdy, W. A. Mason.

SECOND YEAR.—Class 1.—J. I. George, T. A. LaPage, R. H. Humphrey, Class 2.—J. H. Cameron. *Passed*.—E. L. Newcomb, W. Stewart, R. C. McKee, J. Cairns, G. W. Munro, A. Whitman, J. McKenzie, J. K. Law.

FIRST YEAR.—Class 1.—S. McQueen, L. McLean. Class 2.—R. McKee, A. McLeod. *Passed*.—E. Cruvell, D. McIntyre, F. Chambers, Ch. S. Cameron, R. Emerson, A. Dickie, W. Scott, S. Hunt.

MATHEMATICS.

SECOND YEAR.—Class 1.—Thomas LaPage, Robert H. Humphrey, Robert C. McKee. Class 2.—John R. K. Law, John H. Cameron. *Passed*.—William Stewart, Howard Newcomb, John A. Cairns, Howard Chambers, Alfred Whitman, James W. McKenzie.

FIRST YEAR.—Class 1.—Robert McKee, Isaac M. McLean, Edwin Crowell. Class 2.—Geo. W. McQueen, Alfred Dickie, Edgar Torry, Donald McIntyre, William F. Scott. *Passed*.—Ralph M. Hunt, Charles S. Cameron, Fred. R. Chambers, Thomas Stewart, Angus McLeod, Robert B. Emerson.

NATURAL PHILOSOPHY.

FOURTH YEAR.—Class 1.—J. McO. Stewart. Class 2.—G. H. Fulton. *Passed*.—L. McDowell, J. A. Munro.

THIRD YEAR.—Class 1.—W. S. Whitman, John Waddell. Class 2.—J. M. Scott. *Passed*.—J. H. Sinclair, R. E. Cameron, R. H. Hamilton, A. W. Hamilton, W. R. Grant, G. A. Laird, T. L. Archibald, F. W. Archibald, S. T. McCurdy, J. S. Murray, C. Fitchak.

EXPERIMENTAL PHYSICS.

Passed.—W. M. Fraser.

METAPHYSICS AND ESTHETICS.

THIRD YEAR.—Class 1.—J. H. Sinclair, J. Waddell, F. W. Archibald, Is. L. Archibald. Class 2.—G. A. Laird, J. M. D. Scott, E. H. Hamilton, A. W. Hamilton, W. R. Grant, W. A. Mason, Richmond Logan. *Passed*.—R. E. Chambers, St. T. McCurdy, J. S. Murray, Colin Fitchak.

PSYCHOLOGY.

SECOND YEAR.—Class 1.—T. A. LaPage, (R. H. Humphrey, E. L. Newcomb, *equal*, J. H. Cameron, J. L. George, G. W. Munro,) *equal*. Class 2.—J. A. McKenzie, (J. R. K. Law, W. S. Stewart,) *equal*, J. A. Cairns. *Passed*.—Rud. C. McKee, All. Whitman.

ETHICS AND POLITICAL ECONOMY.

Class 1.—James McO. Stewart, John Munro. Class 2.—Isaac McDowell, James A. McLean, Joseph S. Norton, John W. McLeod, George H. Fulton. *Passed*.—Duncan McKenzie.

CHEMISTRY (SENIOR).

THIRD YEAR.—Class 1.—William M. Fraser, J. H. Sinclair, R. E. Chambers, A. W. Hamilton. Class 2.—William R. Grant, Fred. W. Archibald, Isaac L. Archibald, Richmond Logan.

CHEMISTRY JUNIOR.

SECOND YEAR.—Class 1.—T. A. LaPage, Hugh D. Cameron, E. L. Newcomb, John A. Cairns, John R. K. Law, Robert H. Humphrey. Class 2.—John I. George, G. W. Munro, Alfred Whitman, Rud. C. McKee. *Passed*.—James McKenzie, W. S. Stewart.

HISTORY.

FOURTH YEAR.—Class 1.—J. McO. Stewart, John Munro, J. W. McLeod, F. H. Bell. Class 2.—J. S. Norton, Isaac M. McDowell. *Passed*.—Jan. A. McLean, Geo. H. Fulton, D. McKenzie.

CONSTITUTIONAL HISTORY.

J. McO. Stewart, (F. H. Bell, J. W. McLeod,) *equal*.

HERETIC.

FIRST YEAR.—Class 1.—Rud. McKee, Isaac M. McLean, G. W. McQueen, E. Cruvell. Class 2.—D. McIntyre, C. S. Cameron, K. J. Torry. *Passed*.—R. Emerson, Wm. F. Scott, Alfred Dickie, Abt. Thomson, Ralph M. Hunt, M. W. LeNair, Angus McLeod, Thomas Stewart, F. W. D. Rossiter, J. W. Sinclair, W. J. G. Thomson.

MODERN LANGUAGES.

FRENCH.

FOURTH YEAR.—Class 1.—Francis H. Bell, James McO. Stewart. Class 2.—John Munro, John W. McLeod. *Passed*.—George L. Fulton, Is. McDowell, James A. McLean, Joseph S. Norton.

THIRD YEAR.—Class 1.—Andrew W. Hamilton. Class 2.—Robert R. Chambers, Howard H. Hamilton. *Passed*.—Fred. W. Archibald, Is. L. Archibald, W. R. Grant, George A. Laird, Wm. A. Mason, Smaley T. McCurdy, John S. Murray, Colin Fitchak.

THIRD YEAR.—Class 1.—John Waddell. Class 2.—R. Logan, John McE. Scott, John H. Sinclair.

**GENERAL LIST OF HONOURS, MEDALS, SCHOLARSHIPS,
SPECIAL PRIZES &c., 1855-75.**

B. A. HONOURS.

- 1873.—MATHEMATICS AND PHYSICS.—Second Rank.—Alex. H. McKay.
1874.—CLASSICS.—Second Rank.—James Chalmers Herdman.
 MENTAL AND MORAL PHILOSOPHY.—Second Rank.—James McDonald
 Osley.
1875.—MATHEMATICS AND PHYSICS.—Second Rank.—James McE. Stewart.
CLASSICS.—Second Rank.—Francis H. Bell.

GOVERNOR GENERAL'S MEDALS.

- 1873.—Gold Medal.—Louis H. Jordan. Silver Medal.—George McMillan.
1875.—Gold Medal.—Francis H. Bell. Silver Medal.—James McE. Stewart.

PROFESSORS' SCHOLARSHIPS.

- 1866.—1. A. P. Silver, Halifax Grammar School; 2. A. W. H. Lindsay,
 Pictou Academy.
1867.—1. James G. McGregor, Private Study; 2. James M. Inglis, Prince of
 Wales College, Charlottetown, P.E.I.
1868.—1. Alex. W. Follok; 2. W. F. Archibald, Halifax Schools.
1869.—1. Charles D. McDonald, Pictou Academy; 2. Bruce A. Lawson; 3.
 Henry Macdonald, Halifax Schools.
1870.—1. Andrew C. Herdman, Pictou Academy; 2. Alex. C. Paterson,
 Fort M'Henry Academy.
1871.—1. William Howarrig, Pictou Academy; 2. George McMillan, Private
 Study.
1872.—1. Francis H. Bell, Private Study; 2. Fred. W. O'Brien, Pictou
 Academy.
1873.—1. James McLean, Private Study; 2. John Waddell, Pictou Academy.
1874.—1. J. L. George, Pictou Academy; 2. John Stewart.
1875.—1. George W. McQueen, New Glasgow Academy; 2. Isaac M. McLean,
 Private Study.

GRANT PRIZE.

For Essay.—1855—Joseph H. Chase. 1867—Ashley Lippincott. 1868—
Arthur P. Fraser. 1869—Herbert A. Bays. 1870—Hugh M. Scott.
1871—Duncan C. Fraser. 1872—Alex. H. McKay.

THE YOUNG PRIZES.

General Prize, voted by Students. 1867—1. John Gow, 3rd and 4th years;
2. Alex. C. McKenzie, 1st and 2nd years. 1868—1. George Murray,
3rd and 4th years; 2. Wentworth E. Rossie, 1st and 2nd years. 1869
—1. John J. McKenzie, 3rd and 4th years; 2. Biram Logan, 1st
and 2nd years. 1870—*For Essay*: Walter M. Theobald; *For Education*:
Duncan C. Fraser. 1871—*For Essay*: James G. McGregor; *For Educa-*
tion: Robert G. Sinclair. 1872—*For Essay*: Ephraim B.-41; *For*
Education: Wm. A. Mills. 1873—*For Education*: Fred. W. Archibald.
1874—Richard A. Logan. 1875—S. J. MacKnight. 1876—1. Francis
H. Bell; 2. Colin Phillips.

ROY PRIZES.

For Education: 1858—1. Alex. G. Russel; 2. James G. McGregor. 1860—1.
Albert R. Quinn; 2. Wm. M. Doull.

NORTH BRITISH SOCIETY BURSARY.

1854—Hugh M. Scott. 1870—Ephraim Scott. 1872—James C. Herdman.
1874—James McE. Stewart. 1876—John H. Cameron.

LAURIE PRIZE.

1871—Hugh M. Scott, B.A. 1872—Duncan C. Fraser. 1873—David F.
Creehman. 1874—Archibald Gunn. 1875—Alex. McLeod. 1876—No
competition.

ST. ANDREW'S PRIZE.

1873.—*For Classics*.—First Year.—John W. McLeod.
1874.—*For Mathematics*.—Second Year.—John W. McLeod.
1875.—*For Classics*.—Second Year.—James McLean.
1876.—*For Mathematics*.—Second Year.—T. A. McE. Page.

ALUMNI PRIZES.

1873—James McE. Stewart. 1874—1. James McLean; 2. John H. Sinclair.
1875—1. J. H. Cameron, Private Study; 2. R. H. Humphrey, Halifax
Grammar School. 1876—Third Year.—John Waddell (who resigned in
order to hold the Waverley Prize), J. H. Sinclair, First Year.—
Eoderic McKay, Private Study.

"UNKNOWN" PRIZE

1873—James McLean.

GRADUATES PRIZE.

1876—John Wilson McLeod.

WAVERLEY PRIZE.

1873—Wm. Bealrto, Wm. R. Ross, equal. 1874—James Fitzpatrick. 1875
—James McLean. 1876—John Waddell.

MELBOURNE PRIZES.

1875—1. John W. McLeod; 2. James McE. Stewart. 1876—George W.
McQueen.

BACHELORS OF ARTS.

1866.		
Chase, J. Henry	.....	Cornwallis.
Shaw, Robert	.....	New Perth, P. E. Island.
1867.		
Burgess, Joshua C.	.....	Cornwallis.
Cameron, J. J.	.....	Georgetown, P. E. Island.
Lippincott, Ashby	.....	New Glasgow.
McDonald, John H.	.....	Cornwallis.
McNoughton, Samuel.	.....	Road River, Pictou.
Rose, Alexander	.....	Roger's Hill, Pictou.
Sedgewick, Robert	.....	St. Elizabeth's Hospital.
Smith, David H.	.....	Truro.
Smith, Edwin	.....	Truro.
1868.		
Carr, Arthur F.	.....	St. Edward's, P. E. Island.
Charlie, Thomas M.	.....	Yarmouth.
Crolyton, James G. A.	.....	Halifax.
Forrest, James	.....	Halifax.
McKay, Kenneth	.....	Hardwood Hill, Pictou.
Simpson, Isaac	.....	Marionville, Pictou.
1869.		
Anand, Joseph	.....	Gay's River, Hants.
Bayne, Herbert A.	.....	Pictou.
Miller, Ebenezer D.	.....	Rogers' Hill, Pictou.
McKenzie, John F.	.....	Green Hill, Pictou.
Sutherland, John M.	.....	West River.
1870.		
Lindsay, Andrew W. H.	.....	Halifax.
Scott, Hugh M.	.....	Shelbrooke.
Thompson, Walter M.	.....	Berwick.
Wallace, John	.....	Statenville.
1871.		
Bayne, Ernest S.	.....	Pictou.
McGregor, James G.	.....	Halifax.
Hussel, Alex. G.	.....	Truro.
1872.		
Archbold, Wm. F.	.....	Halifax.
Brace, Wm. T.	.....	St. Elizabeth's Hospital.
Carmichael, James	.....	New Glasgow.
Craikbank, Wm.	.....	Lower Musquodobit.
Fraser, Duncan C.	.....	New Glasgow.
Guns, Adam	.....	East River, St. Mary's.
McKenzie, Hugh	.....	Elfriston.
Pelkie, Alex. W.	.....	French River, Pictou.
Scott, Ephraim	.....	Douglas, Gona.
Trevisan, Arthur I.	.....	Point Delisle, N. B.
1873.		
Allen, John M.	.....	Newfoundland.
Byrdin, Ch. W.	.....	Tatamagoghe.
Cameron Wm.	.....	Saint-Jacques River.
Croftman, D. P.	.....	St. John's.
Duff, Kenneth	.....	Leedsburg.
Hunter, John	.....	New Glasgow.
Logan, Melville	.....	Halifax.
McDonald, Chas. D.	.....	Pictou.
McKay, Alex. H.	.....	Bathurst, Pictou.
McKewen, James A.	.....	Tatamagoghe.
Robinson, J. Milton	.....	Bathurst, N. B.
Ross, Wm.	.....	East River, Pictou.

*Graduates and Undergraduates of the University, and
General Students in Arts.*

GRADUATES.

MASTERS OF ARTS.

1869.		
Chase, Joseph Henry	.....	Cornwallis.
1870.		
McNaughton, Samuel	.....	Gayborough.
MacDonald, John H.	.....	Kentville.
1871.		
Cameron, J. J.	.....	Georgetown, P. E. Island.
Carr, Arthur F.	.....	St. Edward's, P. E. Island.
Smith, David H.	.....	Truro.
1872.		
Anand, Joseph	.....	Pictou.
Bayne, Herbert A.	.....	Pictou.
Forrest, James	.....	Halifax.
McKenzie, John J.	.....	Pictou.
1874.		
McGregor, James G.	.....	Halifax.
1875.		
McKenzie, Hugh	.....	Earleown.
Scott, Ephraim	.....	Douglas, Gona.
1876.		
Allen, John M.	.....	Newfoundland.

DOCTORS OF MEDICINE AND MASTERS OF SURGERY.

1872.		
DeWolf, George H. H.	.....	Dartmouth, N. S.
Hiltz, Charles W.	.....	Bridgetown, Annapolis.
McMillan, Finlay	.....	Pictou Co.
McEae, William	.....	Richmond, C. B.
Sutherland, Isidor	.....	River John, Pictou.
1874.		
Campbell, Don. A.	.....	Truro.
Chabolin, Donald	.....	Longpoint.
Moore, Edmund	.....	Londonderry.
1875.		
Cox, Robinson	.....	Stowicks.
Becham, J. L.	.....	Halifax.
Lindsay, A. W. H.	.....	Truro.
Muir, W. S.	.....	Arichat.
Casimir, Robt.	.....	Arichat.

1874.		
Deall, Walter S.	Halifax	
Fraser, D. Stiles	Durham, Pictou	
Hedeman, James C.	Pictou	
Hedeman, Wm. C.	Pictou	
McGregor, Daniel	Jarvisburg, C. B.	
McLeod, Donald	Strathalbyn, P. E. I.	
Osley, James Meli	Halifax	
1875.		
Fitzpatrick, James	Bogert Hill, Pictou	
Jordan, Louis H.	Halifax	
McLeod, Alex.	Ormsby, Colchester	
McMillan, George	Scott Hill, Pictou	
Stamberg, Hector H.	Cape John, Pictou	
1876.		
Bell, Francis H.	Halifax	
Fulton, George H.	Bas River, Colchester	
McDowall, Isaac	Tatamagouche	
McLean, James Alex.	Pictou	
McLeod, John W.	N. River, Colchester	
Morton, Jos. S.	New Glasgow	
Munro, John	Valleyfield, P. E. I.	
Stewart, J. Meli	Whycocomagh, P. E. I.	

UNDERGRADUATES, 1875-8.

FOURTH YEAR

Bell, Francis H.	Halifax
Fulton, George	Bas River, Colchester
McDowall, Isaac	Tatamagouche
McLean, James Alex.	Pictou
McLeod, John W.	N. River, Colchester
Morton, Joseph S.	New Glasgow
Munro, John	Valleyfield, P. E. I.
Stewart, James McG.	Whycocomagh

THIRD YEAR

Archibald, F. W.	Truro
Archibald, D. L.	Truro
Chambers, Robt. E.	Truro
Grant, W. R.	Spragville, Pictou
Hamilton, Howard H.	Pictou
Harrison, A. W.	Pictou
Laird, George A.	Covendish
Logan, Richmond	Stewiack
Mason, Wm. A.	Bas River
McLusky, Stanley T.	New Glasgow
Murray, J. S.	Cavendish, P. E. I.
Phillips, Colin	Truro
Scott, John Meli	Gore Falls
Simular, John H.	Castan, Guysborough
Waddell, John	Sheet Harbor

SECOND YEAR

Calens, J. A.	Upper Freetown, P. E. I.
Cameron, J. H.	South River, Antigonish
George, J. L.	Falton
Humphrey, E. H.	Halifax
Lav, J. E. R.	Kingston, N. B.
LeFrag, T. A.	Charlottetown, P. E. I.
McIntosh, J. A.	Green Hill, Pictou
McKnight, S. J.	Dartmouth

McRae, Rod. C.	Bedford, P. E. I.
Miller, Wm.	Stellarton
Munro, G. W.	New York
Newcomb, E. L.	Cornwallis
Rees, B. D.	Bas River, Pictou
Stewart, W. S.	St. Peter's Road, P. E. I.
Whitman, Alf.	Antigonish

FIRST YEAR

Brommer, Fred. W.	Halifax
Cameron, Ch. S.	Bedford, C. B.
Crowell, Edwin	Barrington
Dickie, Alf.	Stewiack
Everson, R. R. J.	Halifax
Hess, Ralph. M.	Dartmouth
McCraty, Dan.	Dalhousie, N. B.
McKay, Robt.	Dalhousie, Pictou
McLean, Is. M.	Bedford, P. E. I.
McLeod, Angus	Valleyfield, P. E. I.
McQueen, George Wm.	Southbrook's Hor, Pictou
Reid, Wm. P.	Limousing
Thornton, Alb. Ed.	Halifax
Torrey, Edgar J.	GuySBorough

*Left ill at the beginning of the Session.

BACHELORS OF ARTS.

Dool, W. S.	Halifax	History
Jordan, Louis H.	Halifax	German, Rhetoric

GENERAL STUDENTS.

FOURTH YEAR OF ATTENDANCE

NAME	RESIDENCE	CLASSES ATTENDED
Foxley, Jas. Alf.	Dalhousie, Pictou	Class, Nat Phil, Metaph.
Gordon, G. L.	Sutherlandshire, G. B.	Latin, History, Ethics
Gunn, Arch.	Pictou	Latin, Ethics, History
McConnell, Duncan	Lois Leonard	History
Ross, J. T.	Barrow, Colch.	

THIRD YEAR

Fraser, Wm. M.	Dartmouth	Chemistry, Rhetoric
Whitehead, W. S.	Upper Kasten, Hants	Nat. Phil., Metaph., Ger.

SECOND YEAR

Dunn, H. W.	Halifax	History
Chambers, Howard	Truro	Math., Logic, Chemistry
Gandy, Arthur	Halifax	Mathematics
Judson, Wilbert	Bas River, Colch.	Classics, Logic
McGregor, Monahan	Lake Umbagog, C. B.	Class., Logic, Metaphysics
McMillan, Angus	St. Ann's, C. B.	Latin, Math., Logic
Mitchell, Ch.	Halifax	Latin, Rhetoric, French
Mosley, Fred.	Dartmouth	Class. Rhetoric
Torpe, Edward	Cornwallis	Class. Rhetoric

FIRST YEAR.

Archibald, W. E.	Edinburgh.	Classics, Math., Rhetoric.
High, Fred.	Halifax.	Rhetoric.
Osborne, Hugh D.	Antigonish.	Chemistry.
Campbell, Malcolm	Big Glass Bay, C. B.	Mathematics, Rhetoric.
Chamberlain, Fred.	Terra.	Classics, Math., Rhetoric.
Cashell, Don. F.	Antigonish.	Chemistry.
Chastagnay, N. F.	Halifax.	"
Deans, J. D.	Shabenaodie.	"
Henry, Seidoy	Musquodoboit.	Math., Rhetoric, French.
Jack, Clifford	Halifax.	Chemistry.
Jahoon, D. E.	"	"
Lindsay, John A.	"	Latin, Math., Rhetoric.
Louise, Melina N.	"	Chemistry.
Malcom, Thomas	Tatamogouche.	Practical Chemistry.
McCallum, J. A.	Halifax.	Classics, Math., Rhetoric.
McClure, James K.	Terra.	Practical Chemistry.
McKay, Alex.	Dartmouth.	Classics.
Nicholson, John	Halifax.	Chemistry.
McKenzie, W. D.	Sydny, C. B.	Classics, Math., Rhetoric.
McLellan, W. E.	Durham, Victoria.	Chemistry.
McLeod, A. E.	Stobie Mountain, C. B.	Rhetoric, French.
Mor, James F.	Halifax.	Practical Chemistry.
Oppen, John E.	Aylesford.	Classics, Math., Rhetoric.
Robb, Wm. E.	Amherst.	Practical Chemistry.
Smith, Freeman F.	Brookfield, Queen's Co.	Classics, Math., Rhetoric.
Stewart, Th.	Whycecough, C. B.	Mathematics, Rhetoric.
Thomson, W. J. G.	Halifax.	Chemistry.
Tyler, Wm. E.	"	Chemistry, Mathematics.
Welling, Fred. N.	Shediac, N. B.	Chemistry.
Woodill, W. N.	Halifax.	Rhetoric, History.
Zwickler, Geo. W.	Malbone Bay.	

Undergraduates in Arts	22
General Students in Arts	37
Graduates continuing their Studies.....	2
Total number of Students.....	101

ALHO SIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

FIRST YEAR—LATIN.

CICERO: FIRST ORATION AGAINST CATHLINE.
VIRGIL: AENEID, BOOK V.

PROFESSOR JOHNSON, M.A., Examiner.

1. Translate:

(a) *Castra sunt in Italia contra respublikam in Etruria facilebus collocata; crevit in dies singulos hostium numerus: corum antea imperatorem castrorum ducentos hominum intra monia atque adeo in senatu vilem, insuetum aliquam quotidie periculum respublikae nobiscum. Si te iam, Catiline, comprehendi, si interfici jussero, credo, erit excusatum mihi, ne non hoc potius eases bene scirus a me, quam quicumque crudelibus factum esse dicat. Verum ego hoc, quod insperatum factum esse oportet, certa de causa nosdam adducor, ut faciam. Tum denique interdicam te, quam jam nemo tam improbus, tam perditus, tam tui simile inveniri poterit, qui id non jure factum esse fateatur. Quamvis quisquam erit, qui se defendere audeat, vires: et vires ita, at nemo viris, pulvis meo et firmis passidibus obsecutus, ne somnare te contra respublikam possis: malarum te citam oculi et sacre non sententia, sicut adhuc fecerant, speculabuntur atque custodient.*

(b) *Est pascua in pelago saxum, spumantis contra Littora, quod tumidis submersum tandem olim Floetibus, liberali condunt ubi sidera Cori: Tranquilla sibi, hincaque attollitur inlata Campae, et apicis statio gradissima mergis. Hic videtur Aeneas frondenti ex ilice nectam Constabat, signum natis, pater: unde reverti Scirent, et longae ubi circumstitero carae. Tum loca sorte legunt; ipsique in papibus auro Ductores longe effulgent ostroque doceri: Cetera populeis velatar fronde juvenum, Nudatasque humeros alio perosa nitenti.*

(c) *At matres primo anepitris, oculisque malignis Ambigua, spectare matas, miscrum inter anorem Præsertim terro fisticque vocanda regas; Quam Dea se paribus per cultum insulit alba, Ignotentemque fugi secus sub nubibus æcum, Tum vero attenta monstris æneique furere, Conclamant, rapiantque locis penetralibus ignem: Pars spoliant aras, frondem ac virgulas facoste Conjiciunt: sunt immenso V'sicinus habens Transtra per et ramos et pictas abiete yappes.*

2. Analyse the sentence 'Si te jam, Catiline, dicat' (supplying ellipses) so as to show the connection of clauses.

3. Give the rules of Syntax for cases and moods of the following words: 'a' 'comprehendi,' 'mihi,' 'dicat,' 'hoc, quod,' 'tul.—(t)' 'tranquilla,' 'virant,' 'humeros.—(c)' 'spontane,' 'regas,' 'habens,' 'abiete.'

4. Decline and mark quantities of: *hastilia, interitus, senes, pelago viros.*

5. Write the forms in the other degrees of comparison corresponding to: *ulcimus, ucior, plus, pius, summis, motus (adv.), petiosus, clara, imis.*

6. Parse, give principal parts and mark quantities of: *scindis, obdijpore, cont, scunt, perissum est, apsectum, proficiscere, obtulisse, hauris, possant.*

7. Write the 2nd pl. fut. ind. act. and pass. forms (if used) of: *confido, perfere, it, velle, secant, jussu, xeruit, petivit, emensa, ausus.*

8. What verbs are followed by (a) two accusatives, (b) two datives, (c) accusative and genitive?

9. Scan the first five lines of last extract.

10. Write a sketch of Virgil's life.

11. Translate into Latin: His father's friend pities me.—Come hither, my dear son.—Setting out from Rome he remained a good while at Capua.—If you and Tullia are well, Clero and I are well.—You have a leader mindful of you, forgetful of himself.—Your treaty will cost you dear.—What difference does it make to you?

ADDITIONAL FOR FIRST AND SECOND CLASS.

CICERO: THIRD ORATION AGAINST CATHLINE.

1. Translate Chap. IX.

2. Decline: *irum, fuscibus, Idibus, natu, Berse, herom.*

3. What nouns of the 3rd decl. form the gen. pl. in *-ium*? Give exceptions.

4. What adjectives lack (a) the positive only, (b) the comparative only, (c) the superlative only.

5. Write in Latin $\frac{1}{2}$; $\frac{3}{4}$; 25,768; Nov. sch.

6. Distinguish the meanings of: *quotidie*, in *dies*—*promitto*, *polliceor*—*colitum*, *colitum*—*romitium comitum*—*consulere tibi*, *consulere in te*—*summus*, *supremus*—*accusari*, with *dat.* and with *acc.*—*sumibus*, *sumibus*.

7. Translate these passages, and write grammatical or explanatory notes on the words in italics:

(a) *Tixi*.... eadem te optumatum contulisse in eade dies F.Kuf. Nov.

(b) *Mull*.... non tam sui consensum quon tuorum consilium repemendorum causa profugerunt.

(c) *Ad eosdem palatium supplicatis*.... decreta est.

(d) *Dixerunt Lentulum sibi confirmasse ex fide Silglinis hoc apicisque responsis* ac esse tertium illum Cornelium.

(e) *Quid tandem te impedit?* Momen majorem.... An loqur, quae de ceteris Romatorum supplicio regere sunt.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

MONDAY, APRIL 11. — 9 A.M. TO 1 P.M.

MATHEMATICS — FIRST YEAR.

SIXTYMIN.

PROFESSOR MACDONALD,..... *Examiner.*

1. Prove the *part* of the 10th Proposition of the First Book, which is dismissed in your Euclid by the words "In the same manner," &c.

2. If the square of one side of a triangle is equal to the sum of the squares of the other two sides, the angle contained by those is a right angle. When you have proved it, point out a common error of the unvary in dealing with this Proposition.

3. If a straight line be divided into two equal and also into two unequal parts, the rectangle contained by the unequal parts together with the square of the line between the points of section, is equal to the square of half the line. (By the division of the straight line only, if you can.)

4. BCD is a triangle, F being the middle point of BD. Prove

$$BC^2 + CD^2 = 2BF^2 + 2FC^2.$$

5. The 6th Proposition of the Second Book is really a case of the 5th. Show this, and exact your criticism to some other Propositions in the same Book. Also, write the algebraic equation which represents any one of them you choose.

6. Draw the longest and also the shortest line to the circumference of a circle from a point in a diameter produced.

7. The angle at the centre is double the angle at the circumference, standing on the same arc. Hence, by the *postulate of continuity*, prove the 31st Proposition of this Book.

8. On a given straight line to describe a segment of a circle containing an angle equal to a given angle.

9. About a given circle to describe a triangle equilateral to a given triangle.

10. On a given straight line describe a regular octagon.

11. Divide a straight line into two parts so that the difference of their squares may be equal to a given square. Point out when the problem is impossible.

12. If two chords in a circle cut at right angles, the sum of the squares of their segments is equal to the square of the diameter.

13. If a quadrilateral be described about a circle, the sum of the angles at the centre subtended by two opposite sides is constant.

14. O is the middle point of the arc ACB, and CDE is drawn cutting the chord AB, either internally or externally, in D and the circle in F. Prove $FC \cdot CD = AC^2$.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

MONDAY, APRIL 17.—10³⁰ A. M.

MATHEMATICS—FIRST YEAR.

PROFESSOR MACDONALD.....Examiner.

1. Prove the rule for the division of Vulgar Fractions, by working and explaining the example $\frac{1}{2} \div \frac{3}{4}$.

2. Show, by reasoning on the matter, that $a + (b - c) = a + b - c$; and that $a - (b - c) = a - b + c$. Also simplify

$$a - \{ a + b - (a + b + c - (a + b + c + d)) \}$$

3. Resolve into factors (one of which is $x \pm y$), when possible,

$$x^3 \pm y^3, x^2 \pm y^2, x^{2m} \pm y^{2m}, x^{2m-1} \pm y^{2m-1}, x^2 \pm y^2$$

4. Find the greatest common measure of $6x^3 - 6x^2y - 2xy^2 - 2y^3$ and $15x^2 - 11xy + 3y^2$, and the least common multiple of $2(x-1)$, $3x-6$, x^2-1 , x^2-4 .

5. Show that $\sqrt{x} \pm \sqrt{y} = a$, a rational quantity, is impossible, when \sqrt{x} and \sqrt{y} are true and different surds. Show also that

$$(12 + \sqrt{13})(12 - \sqrt{13}) = 5, \text{ and } \frac{8 - 2\sqrt{2}}{3 - 2\sqrt{3}} = 4 + \sqrt{2}$$

6. Solve the equation $\frac{x-a}{b} - \frac{9x-14}{5} = \frac{a-x}{2} = 10x + 11; a$.

7. Describe 3 methods for solving Simultaneous Equations of two unknown quantities; and employ two of them successively to solve the following: $4x - 4y = 8$, and $13x + 7y = 101$.

8. Find the two values of x in the equation, $3x^2 - 7x = 40$.

9. Given that $x = 9$ is one of the roots of the cubic equation, $x^3 + 7x^2 + 2x - 40 = 0$; find the other roots, by considering the relations of the roots to the coefficients.

10. A company of 20 men had \$28.80 to pay; but three of them having slunk away before the bill was settled, the others had to pay 80 cents a piece more than their fair share. How many did the company consist of?

11. In an A.P. the sum of terms equidistant from the extremes is constant. Also, state and prove the analogous property in a Geometrical series.

12. If a, b, c, d are in G.P., prove $a:d :: a^2:b^2$, and if a is greatest, shew that $x + d > b + c$.

13. The limit of the sums of the series, $a + ar + ar^2 + \dots$ is $\frac{a}{1-r}$.

Prove this and apply it to find the value of $\frac{1}{1-\frac{1}{2}}$

14. x varies as $x + y$, and y varies as x^2 , when $x = \frac{1}{2}$, $y = \frac{1}{2}$, and $x = \frac{1}{4}$; find the equation, between x and y .

15. Solve the equation $9x - 3x^2 + 4\sqrt{x^2} - 3x + 3 = 11$.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1873.

WEDNESDAY, APRIL 23.—9 A.M. TO 1 P.M.

REHETORIC—FIRST YEAR.

PROFESSOR DE MEZE, M. A. Examiner.

(Only one question is to be answered out of each group.)

1. Explain what is meant by Purity of Style, and show how it is most frequently violated. Give examples of new words which entered into the language during the 16th and 17th centuries.

2. What is Unity? Explain the proper and improper use of the Parenthesis. Give the general law for the arrangement of words.

3. Show the relative importance of Strength of Expression. Write out a paragraph on any subject, so as to introduce the following figures.—Conspicuous, Allusion, Metaphor, Antithesis.

4. Explain Harmony in Style, and show its relative importance in different kinds of composition. Define Onomatopoeia, and illustrate its use in prose and poetry.

5. There are various kinds of Description. Explain Concurrent Streams, Retrospect, and Summary, in Narrative. In Discussion, explain Example, Illustration, Details.

6. Explain what is meant by Matters of Fact, and Matters of Opinion. Define and illustrate Arguments from (a) Negative Testimony; (b) Undisputed Testimony; (c) Testimony of adversaries.

7. Distinguish between Invention and Method in Arguments, and give illustrations from Narratives and Exposition. Explain the difference between the Subject and the Question. Show the different arrangement of arguments in Proof and Refutation.

8. Enumerate the chief sources of (a) the Beautiful and (b) the Sublime. What is meant by the Three Unities of Dramatic Composition?

9. Criticise the following passage:—

With our senses in general, with men of right feeling anywhere, we are not required to plead for Basso. In plying administration, he lies embosomed in all our hearts, is far nobler molecule than that one of marble; soldier will his Werks, even as they are, pass away from the memory of man. While the Shakespeares and Miltons roll on like mighty rivers through the country of Thought, bearing fleets of traffickers and assiduous partisans on their waves, this little Valséna Fountain will also arrest our eyes: for this also is of Nature's own and most cunning contrivance, leaved from the depths of the earth, with a full pushing current, into the light of day; and affix will the trajector turn aside to drink of its clear waters, and muse among its rocks and places!

10. Write an original example of Narrative Composition upon any well known subject; e.g.—Alfred the Great, Oliver Cromwell, Napoleon Bonaparte,—the Indian Mutiny, the Southern War, the Franco Prussian War. Write an original example of Expository Composition upon any familiar subject;—e.g.—War, Religion, Temperance, Literature, Education, The Press.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

WEDNESDAY, APRIL 12.—2 to 5 P.M.

ANGLO SAXON—FIRST YEAR.

PROFESSOR DUMELL, M.A.,.....*Examiner.*

1 Translate

The organ seo abhuflice clyppan and lufan tha Godes gifis in tham meo, and heo lene tha meode and herde, thar he weoroldad feretes and muneclade eotunge; and he thast wal thafote; and heo hine in thast zynster eotung mid his godum, and hine getheode to grammege thara Godes theowa, and het hine laeran thast geseal thase halgan steres and spelles, and he eal tha he in godessece geborsian mihte mid hine geunyg-ode, and swa swa clare nyten eodorende in thast sweoteste looth gehwyrde, and his song and his sooth waeron so wysum to ghyrnanne, thast tha selfan his lareowas set his mutha writen and hoordodon.

2 Parse organ, eotunge, let, halgan, to ghyrnanne, selfan.

3 Give as many examples as you can of words of Latin or Greek origin in the Anglo Saxon language, and show why they were introduced.

4 Give the modern English forms of the following words, and explain the euphonic changes that have taken place: gifis, weoroldhad, godum, laeran, clare, nyten.

5 Show the euphonic changes that have taken place in the passage of the following words into modern English: geodorende, meohte, arn, axian, gescy, wrecan, betwux, climan.

6 Write out forms of the definite and indefinite declensions of any adjective.

7 Write out the forms of the Indicative mood active of the verb laetan.

8 Translate

Gewat tha neowan sohdthan silta becom
leas huses, ha hit Heing Dene
sefter leas-thege guban laeston;
fand tha tharicne seoldinga gedriht
swetan sefter symble: sorge ne cahton,
wonscaft wera. Wilt unbaelo
grim and graedig gearo sona wæs,
reoc and rothe, and on raeste geam
thring thega; thaxon eft gewat
herbe hreting so ham faran,
mid thære wad file wra necean.
Tha wæs on uhtas mid aer-dæge
Grendles gudh-craeft gumum andyrne:
tha wæs sefter wiste wop up-ahædon,
micol morgen sweg.

9 Parse gewat, becom, wera, wæs, necean, gumum.

10 Give the modern English forms of the following words, and explain the euphonic changes that have taken place: huses, wonscaft, graedig, aer-dæge, wop, up-ahædon.

11 Explain the nature of Anglo-Saxon versification.

12 Give a brief account of the Anglo-Saxon language, its origin, its chief dialectic divisions, and the chief differences between it and modern English.

13 Give a brief account of Anglo-Saxon literature.

14 Give the Anglo-Saxon forms of the following modern English words, their derivations and euphonic changes: minister, church, priest, monk, lord, lady.

15 Give the Anglo-Saxon equivalents of the following words, with remarks on Anglo-Saxon compound words: orthodox, pious, compasses, disciples, Pharisee, Saviour, Sabbath.

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

THURSDAY, APRIL 26.—9 AM. to 1 P.M.

EARLY ENGLISH—FIRST YEAR.

PROFESSOR DeMILL, M. A. Examiner.

1. Translate:—

The King William, soote wite the worth of his lande,
Let enygeri strecliche thors at Englonde,
Hou moui pios-lane, and hou moui hidden also,
Were in eserich sein & wat hi wou worth tho-to;
& the rentes of ech man, & of the waters eschose,
That worth, & of wodes ek that they se biloude sose,
That he name wat hi were worth of al Englonde,
& wite al clene that worth fier-of, ich unkeponde,
& let it write clene rour, & that wert diule beris
In the treasure at Westmynstre, there as it yat is;
So that we kinges sulthe wanne hi ransoun toke,
Jrely wat folc myne yuns hi founde there in bor hole.—*Robert of Gloucester.*

2. Give a short account of the nature of the poem from which the above extract is taken, and the probable date of its publication.

3. Parse *eserich*, *hidden*, *hit*, *that*, *wite*, *kinges*, *hou*.

4. State the dialectic divisions of Early English, and give the chief characteristics of each.

5. Explain the versification in the above passage.

6. Translate:—

Leetan ye come with love to count,
With blossoms & with biddes rowan,
That al this blisse bryngth;
Deyes—eyes in this dale,
Notes suete of nightcades,
Ych foul song singeth,
The threstlice him threith so,
Away is hure wyner wo,
When waderce springsh;
This houles singth fely fele,
Ant flyeth on hure wynter wole,
That al the wode ryngth.—*Early English Lyric Poetry.*

7. Translate:—

Ye telles also John Gildenmuth
Of a folk fer and first south,
Womand be the ost ocean,
That beyond tham ar womand men,
Among squik was broght a writte,
O Such the same was lald on it;
O smilk a stern the writt it spak,
And of thir offende to mak,
This writte was gett fra kin to kin,
That best it cith to haf in min,
That at the last thal ordind twine
The thosufulest among tham sose,
And did tham in a moustain dre,
Bisid to wait the stern.—*Cursor Mundi.*

8. Show by the grammatical and orthographical forms of the above two passages, to which of the Early English dialects they respectively belong.

9. Translate:

Thesme layten they lete this lordynge at Maude.
With that ther come Clerkes to cunfesse the same:
"We biddeth the be blithe for we beoth this owne,
Forre worche thi wil wile vr yf darch,"
Hendeliche thesme hec belideth hem the same,
To loose hem lilly and lordes to makas,
And in Conseric at Court to collen beore names.
"Schal so lordyngeas hem lette the knowen that I lose,
That le ne worch avraunt; for Icham I-knowe
Ther unnyng Clerkes schal couche behynde."
—*The Vision of William concerning Piers the Plowman.*

10. Give a brief account of the poem from which the above is taken.

11. Explain the versification.

12. State to which dialect of early English the above belongs; and give corresponding forms in another dialect, of the following words: *biddeth*, *both*, *leo*, *hen*, *loose*, *hoore*, *Icham*, *I-knowe*, *schal*.

13. Translate:

O soleya wo! that our art successour
To worldly blisse, spreyned with bitteresse
Thende of the ieye of our worldly labour;
We accepteth the fyn of our gadasson,
Herke his conseil for thy sikennesse,
Yp-on thy glade daye here in thy runde.
The vnwar wo er harm the counth blyyde.
For shortly for is tellen at a word,
The Sowdan and the christen exercicoun
Ben at tohure and stiked at the bord.
But it were ony dame Constante allowe,
This olde sowdounse, this cursed crose,
Hath with her frende doon this cursed dede,
For she herself wode of the couthe lode.
—*Geoffrey Chaucer: The Men of Launce Tril.*

14. Give examples of Southern dialectic forms in the above passage.

15. Scan the first four lines.

16. Explain the various forms of words ending in "e" as used by Chaucer.

17. Give examples from the above passage (a), of Anglo-Saxon grammatical forms; (b), of Norman French words; and (c), of cases where the "e" final is added.

18. Show by a comparison with the foregoing extracts in what way Chaucer improved English versification.

19. Give examples from the above passage (a), of obsolete words and meanings; (b), of archaisms and compounds; and (c), of words with a different accent from the modern.

20. Give a brief historical sketch of the English language from the Anglo Saxon period to that of Chaucer.

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SESSIONAL EXAMINATIONS, 1876.

SECOND YEAR—LATIN.

LIVY: BOOK I. CHAPS 1-33.—HORACE: ODES, BOOK I.

PROFESSOR JOHNSON, M.A. *Examiner.*

I. Translate:

(a). *Tum Sabinae mulieres, quarum ex injuria bellum ortum erat, arduum passis aciemque vocis, viris male incedit parvum, assensu se intus sibi valentis imperio, ac transverso impetu facto, dirimere infestata acci, dicereque ira, hinc patres, hinc viros omnes, hoc se sanguis refrendo acceri generique respicient; ne pernicidii macularent partus suas, nepotum illi liberam in progressionem. Si affinitati laquei vos, si consuevit pignus, in nos ventis itas, non causa belli, non valentem ex caduca viris ac parentibus sumus. Melius peribimus, quam sine altera vestram viduas, acit arbo rivimus. Movet res tam multitudinem, tam daces. Sibi tantum et repentinis illi quis; inde ad incensandum innes procedunt; nec patrum mores, sed et civitatem unam ex diablis faciunt; regnum committunt; imperium omne conferunt Romanis.*

(b). *Idi insit Abartas: Injerias et non redditis res ex fodere, quam repetite sicut, et ego regera vocerum Chitium, causam hincque esse belli, audire populo: hoc ita dicit, Tulle, cadent ira te ferre. Sed si vera potius quam dicit species dicenda sunt, capillo inquit dices cognatos viduorum populos ad arma stimulat. Neque recte, ac perperam, interpretor: vocit ita quos deliberatio, qui bellum suscipit: ne Abasi gerendo bello inueni creaver. Ead te, Tulle, moximum velis. Etrusca res quoniam circa nos tempore maxime sit, quo proprie te Tullia, hoc magis sen. autium illi terra, plantatum mari potest. Moxerit casu, jam quoniam signum pugna dabit, hoc deesse accis spectaculo fore, ut fuzum conspecturus amul viciorum ac vicium aggrediantur. Inque, si non illi amant, quoniam non potestati libertate certa, in dubium imperii servitute quam lina, incensas aliquam diem, qua, utri utri impedit, sine magna clade, sine multo sanguine utriusque populi decerari possit.*

(c). *Quis desiderio sit pudor an: mores
Tum cari sapiti? Enscipe legibus
Cunctis, Melpomene, tui libitatum pater
Vaxim cum citata dall.*

*Ergo Quincitium perperus soper
Urget! oxi Pudor et Justitia sorer
Incorrupta Fides utaque Veritas
Quasdo utrum inveniant parca?*

*Multis ille bonis fidebis occidit,
Nulli fidebis quam tui, Virgili,
Tu frustra pias non ut ita dicitur
Poesis Quincitium deos.*

*Quodli Theriaci manfias Orpheo
Audiam molerere arceobes fidem,
Non vnam ridet sanguis inagm,
Quam vinga sereit torrida.*

*Non levis prescribes fura, necludere
Nigro compulset Hecuriam gregi.
Durum: ad serlim sit patiensia,
Quisquid corrigere est nefas.*

3. (a) Analyse the sentence "Tum Sabinae mulieres progre-
ssum," explaining the connection of the various clauses.

(b) In the sentence "Injerias videt," show the connection of the words.

4. Accurately give the moods and cases of (a) "respicient," "affinitati,"
(b) "ferre," "dices," "bello gerendo," "illud in moximum velim," "di," "Tullia,"
"mari," "spectaculo," (c) "gregi."

5. Scan the first four lines of (c) and give a scheme of the Sapphic stanza.

6. (a) Mark the quantities and caesurae throughout: *Clio, cubito, loteta,
dix, sapient, fides, miltus.*—(b) What forms in other degrees of compari-
son correspond to: *facile, navis, superis, iniquis, primus, scot, dix, molim,
color.*

7. Name the tense, mood and voice of the following words, mark quantity
of syllables, and give the chief parts and fut. participle, active: *peripugis,
fodere, scotia, feram, videri, quatum, moxita, leri, necis, serena, nitent,
plantaster.*

8. (a) Distinguish the use of *esse* and *quod* with the indicative and
subjunctive.

(b) What moods and conjunctions are used with verbs of (1) swearing and
(2) doubting? Distinguish their meaning.

9. Show how the different cases of the gerund are employed. Which
may the gerundive be substituted? What changes take place then?

10. Write a short account of Horace's life.

11. Translate into Latin: What these events were taking place
amongst the Volscians, the Dictator M. Valerius routed the Sabines,
yet these he fought, and deprived them of their camp. By a charge of
cavalry he had thrown into confusion the centre of the enemy's line which
in extending their virgus too far they had not sufficiently strengthened.
The infantry attacked them when in confusion, and by the same attack
the camp was taken and the war ended. The Dictator enters the city in
triumph. In addition to the usual honours, a place in the Circus was
assigned to himself and his descendants, and there a chair of state was
placed.

ADDITIONAL FOR FIRST AND SECOND CLASS.

LIVY: BOOK I, CHAPS 30-60.

1. Translate Chap 41.

2. Change the passages in chap. 41, which are written in *serbo directo*
and *serbo obliquo* into the opposite forms.

3. What nouns of the 2nd decl. are feminine? What nouns of the
3rd decl. have no singular? What adjectives do not admit of comparison?

4. From short sentences in English and Latin to show in how many
ways 'that' may be rendered in Latin.

5. Show by examples in what different ways the English infinitive may
be translated.

6. Quote the passages in Horace in which these phrases are found: *arctior
Habitio—seruata Pyrrha—Laelio prius—moderate civi—Vatinius
moxis inago—quid sit futurum—carpe diem.*

7. What forms in prose would correspond to: *Andax omnia perpe-
dit—Herculeus later—nil mortales ardu est—ingerit vitae—Draconis hinc
dix—causibus—quon nigro compulset Mercurius gregi—perus agit vire
mores.*

8. Can you point out any inaccuracies in Livy? What are the
reasons for doubting his account of the Regal period? How may the
stories have arisen? Illustrate by an example.

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SESSIONAL EXAMINATIONS, 1876

MONDAY, APRIL 17.—3 to 6 P.M.

MATHEMATICS—SECOND YEAR.

TRIGONOMETRY AND ALGEBRA.

PROFESSOR MACDONALD,.....*Examiner.*

1. Prove the formula, $\theta = \frac{\Delta^{\circ}}{150^{\circ}} \pi$, explaining the symbols employed.
2. Show that $\sin A = \sin (180 - A)$, $\cos A = -\cos (180 - A)$; also, $\cos (90 + A) = -\sin A$, $\cos (90 - A) = \sin A$.
3. Given (1) a side and an angle of a right-angled triangle, and (2) two sides of it: (choose one case of each as you please, and) find the other parts, writing the logarithmic operations.
4. Given $\cos A = \frac{2\sqrt{m-1}}{m+1}$: find the other five functions.
5. Prove, geometrically or analytically, stating in what case it is to be used, the formula, $a + b : a - b :: \tan \frac{1}{2}(A+B) : \tan \frac{1}{2}(A-B)$.
6. Give an account of the method by which $\cos \frac{A}{2}$, $\sin \frac{A}{2}$, $\tan \frac{A}{2}$, $\sin A$ &c. are determined in terms of the sides of the triangle ABC.
7. Prove $\frac{\tan B}{\tan C} = \frac{a^2 + b^2 - c^2}{a^2 - b^2 + c^2}$, or prove $\tan \frac{A}{2} \tan \frac{B}{2} = \frac{a + b - c}{a + b + c}$.
8. Prove that $\log \frac{m}{n} = \log m - \log n$, in any base.
9. How many different arrangements could be made of the letters of the word *success*: in how many of these would the three *s*'s stand last?
10. Find the number of terms in the expansion, $(x + x^2)^{10}$, n being a positive integer. Show also that the coefficients are all whole numbers, and write down the middle term, when n is even.
11. Find the present value of a sum of money, A , payable after x years at r per cent: and adapt your formula to the case of half yearly payments.
12. If the last figure of a number be 5, the last two figures of its square are 25.
13. Find the value of the fraction $\frac{2x^2 - 5x^2 - 4x + 19}{x^2 - 12x + 16}$, when $x = 2$.
14. Prove that imaginary roots enter an equation, $f(x) = 0$, in pairs: Show that the equation, $2x^2 - 3x - 6 = 0$, has a root between 1 and 2, and find the equation, which results after you depress its roots successively by 1 and 7. What is the next figure of the root?

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MONDAY, APRIL 17.—9 A. M. TO 1 P. M.

MATHEMATICS—SECOND YEAR.

SIMPLICITY AND BREVITY.

PROFESSOR MACDONALD,.....*Examiner.*

1. If a, b, c are lines, what is the meaning of the expressions a, b, c ,
 $\frac{a}{b}$ What of $\frac{a^2}{\sqrt{a^2-b^2}}$? Show also that $ab+c, abc+b^2$ &c., are ana-
 logical.
 2. If $a:d=c:d=e:f$ &c., prove $a:d::a+c+b$ &c.: $b+d+f$ &c.,
 and express this result in words.
 3. If two triangles have the sides about each of their angles proportional,
 the triangles are equiangular.
 4. Find a mean proportional between two given straight lines.
 5. Similar triangles are to one another in the duplicate ratio of their
 homologous sides. Also, shew the importance of this Proposition.
 6. BCD is a triangle, and CF bisects the angle C, cutting BD in F;
 prove $3C, CD = 3F, FD + CF$.
 7. If two circles touch externally, the common external tangent is a
 mean proportional between the diameters.
 8. The alternate angles of a regular Hexagon are joined by straight
 lines: prove that the interior figure is also a regular Hexagon, and find the
 ratio of its area to that of the outer Hexagon.
 9. Find a line such that perpendiculars let fall from any point in it on
 two given lines may be in a constant ratio.
-
10. The chord of an arc is 12 ft. and the chord of double the arc is
 20 ft.: find the diameter of the circle.
 11. Find the length of an arc of 15° , the radius of the circle being 1 mile.
 12. The height of a conical wooden tower is 30 ft. and the length of the
 slant is 31 ft.: find the price of painting it at 25 cents per square yard.
 13. The diameter of the moon being 2160 miles, what is the curvature
 per mile of the Lunar surface, supposed spherical.
 14. A square is inscribed in a circular piece of pasteboard of radius
 r inches, and circles again between the circumference and the sides of the
 square touching them at their middle points. Cut out the square and the
 small circles and find the area of the remainder.

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SESSIONAL EXAMINATIONS, 1876.

FRIDAY, APRIL 21.—9 A.M.

SECOND YEAR—MATHEMATICS, EXTRA.

PROFESSOR MACDONALD..... *Examiner.*

1. If two straight lines meeting one another be parallel to two others which meet but are not in the same plane with the former, the plane passing through the first pair of lines is parallel to the plane passing through the second.

2. Draw a straight line of given length to meet and make equal angles with two given planes which meet.

3. Find $\cot(A+B+C)$ in terms of the cotangents of A , B , and C : and deduce (1) that when $A+B+C=180^\circ$, $\cot A \cot B + \cot A \cot C + \cot B \cot C = 1$; (2) when $A+B+C=90^\circ$, $\cot A + \cot B + \cot C = \cot A \cot B \cot C$.

4. The angle 2α is divided into two parts whose sines are in the ratio of m ; n . Show that, if $2x$ = the difference of the angles, $\tan x = \frac{n-m}{n+m} \tan \alpha$.

5. Given $\cot(1-\sin \phi)(1+\sin \phi) = 1 + \tan \phi$. Find general values of ϕ .

6. Given $\sin^{-1} 2x - \sin^{-1} x \sqrt{2} = \sin^{-1} x$: to find x .

7. If the bases of systems of logarithms be in Geometric Progression, their moduli are in Harmonic Progression.

8. Assume the series for e^x , x being the base of the Natural system of logarithms, and prove, by equating the coefficients of the same powers of x in two expansions, that

$$n^n = x(n-1)^n + \frac{n(n-1)}{1, 2}(n-2)^n + 4x = 1, 2, 3, \dots, x; \text{ unless } r < n.$$

9. It is 3 to 1 that A speaks the truth, 4 to 1 that B does, and 6 to 1 that C does. When A and B were, and C deems that a certain event, not a priori incredible, has happened, find what is to be believed.

10. An annuity is to commence after ζ years and last forever, but each payment is only half the preceding. Show that its present value = $\frac{A}{Ri} \frac{2}{5R-1}$.

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SESSIONAL EXAMINATIONS, 1876.

LOGIC AND PSYCHOLOGY.

SATURDAY, APRIL 15.—9 A. M. TO 1 P. M.

PROFESSOR WILLIAM LEVACK, LL.D. *Examiner.*

1. Show the place which Logic holds in Sir W. Hamilton's distribution of the Mental Sciences.
2. Give Sir W. Hamilton's classification of the Mental Faculties.
3. On what grounds may another view of mind be vindicated?
4. What classification of the Mental Phenomena, accordingly, have we adopted?
5. Distinguish between the empirical and intuitional views of mind.
6. With which of the phenomena of mind, is our classification, does Logic connect itself?
7. How do we regard Memory? How may Imagination be characterized?
8. How may Logic be divided, 1st in relation to the mind, or thinking subject, and 2nd in its application or non-application to objects?
9. How is Logic abstract or general divided? How is Pure Logic divided?
10. Distinguish between a concept, or classification simply, and generalization.
11. How would you distinguish between Reasoning in the extensive, and Reasoning in the intensive, or comprehensive, quantity?
12. Show how Reasoning in these two quantities, respectively, is an affair simply of the subordination of concepts. Does true reasoning come under this view? What is the theory of true reasoning?
13. Give the rules of the extensive syllogism.
14. Give the rules of the intensive or comprehensive, and show why the latter are just the reverse of the former, as regards at least, the second and third of these rules.
15. Explain the principle and nature of the Categorical, the Disjunctive, the Hypothetical, and the Hypothetico-Disjunctive, or Dilemmatic, Syllogisms. Give examples.
16. Explain the moods and figures of the syllogism. Show what is the true meaning of the second and third figures, and whether they are properly reducible to the first.
17. Give a scheme of the Fallacies, as they are a violation of the laws of the Syllogism. Which of the Fallacies belong rather to Probation, and are not therefore to be regarded as simply a violation of these laws?
18. Explain the Analytic and Synthetic methods.
19. Distinguish between Inductive and Deductive reasoning, and show how the Inductive is essentially Deductive.
20. Give the Rules of Definition, Division, and Probation. How may the rules of Definition and Division be shown to flow upon the principle of classification, and the determination of concepts?

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SESSIONAL EXAMINATIONS, 1876.

THURSDAY, APRIL 20.—9 A.M.—10 1/2 P.M.

JUNIOR CHEMISTRY—SECOND YEAR OF ARTS COURSE.

PROFESSOR LAWSON.....*Examiner.*

1. What is meant by the specific gravity of a body? What is the specific gravity of Atmospheric Air, of Water, of Hydrogen, of Platinum, of Lithium? What is the relation between the specific gravities and atomic numbers of the Elements?
2. Give an account of the discovery of Oxygen, describe the Element, explain, with equation, its mode of preparation, indicate the principal facts of its distribution in the earth and atmosphere (free and combined), and show wherein it resembles and wherein it differs (chemically) from Chlorine.
3. Describe the process of Manufacture of Sulphuric Acid (English method), with equations, and give an account of its chemical properties.
4. What is meant by the terms *acid*, *neutral* and *basic* as applied to oxides? When such oxides combine with Water what compounds are formed? What is a salt? how is it constituted? Give a few examples to illustrate the different classes of salts.
5. Give briefly, in outline, a classification of the Metals according to their equivalence or atomicity. In what way is the equivalence or atomicity of an element determined? Give some examples of Metals in which the equivalence varies. Lead in combination with Chlorine and with Oxygen appears to be dyadic, why then should it be regarded as a univalent?
6. What are the sources of the plant's food? Where does it obtain the material that afterwards appears as ash when the plant is burnt, in what form or forms does that exist before assimilation, in the plant's tissue, and in the ash. Out of what materials are the carbohydrates (starch, sugar, &c.) formed, and what is the chemical change by which they are produced. What gases are taken up or given off by the plant during the process?
7. "The classification of Organic compounds is based upon the equivalence or atomicity of Carbon." Explain clearly what is meant by this.
8. A solution containing Hydrocyanic Acid yields a precipitate to Argentic Nitrate in the proportion of 11 grains of precipitate to 106 grains weight of solution. What per-centage of Hydrocyanic Acid does it contain.

DALHOUSIE COLLEGE AND UNIVERSITY,

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FOURTH AND THIRD YEARS—LATIN.

TACITUS: AGRICOLA; GERMANIA CHAPS. 1—27.
JUVENAL SATIRES VII, VIII, XIV.

PROFESSOR JOHNES, M.A. Examiners.

1. Translate: (*When the translation differs from the Latin given, show that you understand the letter*)

(a) Natus erat Agricola Cato Censuræ tertium eumque liberos Junius consensu sexto et quinquagesimo anno, decimo Kal. Sept., Calpurnia Prætorique consensu. Quodlibet habitum quoque quæ pueri crescere vellet, decensior quam sublimior fuit: nonnulli membra in vultu; gratia cræ superat. Bonum virum facile credenda, magnam liberat. Et hoc quidem, quamquam necesse in spatio integræ vitæ creptus, quæritur ut plerumque, suggestione ærum pergit. Quippe et vera bona, quæ in virtutibus sita sunt, impleverit, et consulari se invidiosissime exornasse prædico quid aliud aliterum fertura poterat? Oculis nihil non paratibus, speciosissime contingerat. Vilia atque vixæ superstitibus, potant videlicet etiam battas in eoium dignitate, ferente fama, salvis afflictionibus et amicitia fatua effugisse. Nam, sicuti fuerat in hoc beatissimo sæculi luce, se principem Trajanum vidit, quod utique vobisque apud nostras aures omninater, in festinate moris grande solatium tulit evasisse postquam illud tempus, quæ Damianiæ, non jam per intervalla se epulamenta temporum, sed continuo et velut uno ritu, respicientem exhaust.

(b) Hæc illi veteres præcepta minores: et vixit Post finem autumnæ mediæ de roetis supinum Clamoris juvenem pater exiit: "Accipe cræ, Sestiba, puer, vigilia, cunctas ego, postquam rebus Majorum leges, aut videri pœce libito. Sed cupit hinc inde ludo haresque pilosus Annotit, et grandis viderit Lælia aut. Dime Manerem attinges, castella Brigantum, Ut loquere optatum tibi sexagesimo anna Affert: est, longos eorum ferre labores Si piget, et impicum solvart tibi cræma virena Cum litiæ molis, pœce, quod videri possis Pleris distidit, nec te facienda exercis Utiles subant ablegande Tiberis alira, Nec ioculis pœcebas aliquid discimint inter Urugenta et corium. Læri hœc me odor ex m Quallit. Illa tuo sententiæ semper in ore Viret, Dis atque ipso Jere ligas, pœce: Usale habas, querit nemo: sed oportet habere." Hoc monstrat vobis pueri repetitis hæc: Hoc dicitur amos ante alpha et beta possit.

2. (a) Mention the different readings, that are found in the preceding passages, and translate accordingly. (b) Analyse the last sentence of the first extract. (c) Write short notes on the words in italics in the preceding passages.

3. Write all the cases of: fulgo, balneo, ossa, sitata, Arpinas, conchum, leporem, crambe.

4. Parse the following forms giving their chief parts: fulva, perfixit, datus, veneretur, recogitar, movit, cinet deposcedi, tergetur, sermatur, poetere, usum.

5. Give the meaning and derivation of: tessera, cathedra, pollice, scemna, epireta, maniplus, popina, tricarris, serrata, sœmida.

6. Translate, and write explanatory and grammatical notes on the following passages:

a. In universum aestivanti, plus pœce positum reboris.

b. Britannicæ skum populæque nullis scriptoribus commemoratæ referent.

c. Emere ultra frumenta ac balere pœce cogebantur (Briantæ).

d. Occidit miseros crambe roptin magistros.

e. *Jurat.*
Solem Eporem et facies olida ad proptia pœce.

f. *Effice somnum.*
Bis septem ordibus quam lex dignatur Odionis.

7. Trace the different steps in what is called by Max Müller the Empirical stage of the science of Language.

8. Show by examples the forms under which words beginning in English with *h, f, s, t,* and *g* are found in Latin and Greek.

9. Translate into Latin: Marins having been appointed consul, made a speech after this fashion, when the people had voted him the province of Macedonia: I am aware, Romans, that most people do not seek office from you, and after they have obtained it, manage it in the same manner; that at first they are industrious and moderate, but afterwards pass their time in idleness and pride. But the opposite course seems to me the proper one: for just as the whole commonwealth is of more importance than a consularip or a proconsulship, so much the more carefully ought it be managed than the others sought. Nor does it escape my notice, how serious a task I am undertaking; at once to prepare for war and to spare the treasury to horse into the ranks those whom one does not wish to offend, so attend to everything at home and abroad is more difficult than is generally supposed, Romans.

ADDITIONAL FOR FIRST AND SECOND CLASS.

1. Translate the following passage, which is taken from a book now read in the Course:

Ad hæc limenta parentum feminarum, fessæ acutæ aut rudis pœrtitæ acas, quæque sibi quæque sibi consuebant, hæc trahunt invadit aut operantur, paræ mæri, paræ futimans, curata impellunt. Et sæpe, dem in verum respectat, hæcque non ferunt circumventantur; vel si in proxima evaserit, illis quæque legi corripit, osam quæ longius crediderit, in eodem casu reprobant. Postremo, quid videret quid pœrent amigal, compleve vas, sicut per agros; quallan, anolis frutis, dæmi quæque vixit, illi caritate anorum, quæ eripere nonverant quamvis pœntæ fugio interire. Nec quinquam defendere subditæ crebris multorum rebus recondigere pœbulentium, a quæ illi palam hæc lætiam, nique uno illi ævobrem viximantur, siva ut raptis lionibus exacerant, see juss. *Terribis: Anno X.*

2. How does Tacitus describe the appearance and character of the British? Give his words when you can.

3. Mention some characteristics of his style.

DALHOUSIE COLLEGE AND UNIVERSITY,

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SESSIONAL EXAMINATIONS, 1876.

MONDAY, APRIL 17—9 A.M. to 1 P.M.

THIRD YEAR—STATICS AND DYNAMICS.

PROFESSOR MACDONALD,.....Examiner.

1. Prove the last of the subdivisions of the Proposition called the "Parallelogram of Forces."
2. Three forces, not in the same plane, whose direction and magnitude are given, act at a point. Find their Resultant.
3. Forces of 15 and 8, acting at a point, have a resultant 17: find the angle at which they act. Suppose those forces acted at angle 60° , what would the Resultant be?
4. Find the Resultant, and its point of application, of two parallel forces that act in opposite directions. Consider the case when they are equal.
5. Given a homogeneous cone of height a : cut out from it another cone of the same base and of height b : find the centre of gravity of the remaining tapering shell.
6. A sphere rests against a smooth vertical plane, and is kept from falling by a string fastened to a point in its surface and to a point in the plane. Show that the points of attachment and the centre of the sphere are in the same straight line, and find the tension of the string.
7. Classify the Mechanical Powers, with remarks on them: and prove the principle of Virtual Possibilities for any one of them.
8. Explain the formula in Dynamics, $v = V \pm ft$: and deduce from the proper sources the formula $v^2 = V^2 \pm 2fs$.
9. Prove the formula for Centrifugal Force, $f = \frac{v^2}{r}$, and adapt it to find the pull of a body of weight W , which is restricted to a circular orbit.
10. Show that the velocity, acquired from rest, by a body that has descended through any height is independent of the path described.
11. To attain, with a given velocity of projection, any Range on a horizontal plane, short of the greatest, a body may be projected at either of two angles. Find their relation to each other.
12. If two perfectly elastic balls make direct impact, prove
$$u^2 + u'v' = u^2 + u'v'^2$$
13. A weight Q resting on a horizontal table (r the co-efficient of relative friction) is drawn along the table by a weight P , attached to Q by means of a horizontal cord passing over a pulley placed at the edge of the table. Show that the tension of the cord is $\frac{P \cdot Q}{P + Q} (1 + r)$.
14. A weight P after falling freely through $\frac{1}{2}$ feet, begins to pull up, as in Atwood's machine, a heavier body Q . Show that the height through which Q will rise = $\frac{P^2 h}{Q^2 - P^2}$.

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

TUESDAY, APRIL 18.—9 A.M. to 1 P.M.

EXPERIMENTAL PHYSICS.

VERY REV. PRINCIPAL ROSS, D.D. Examiner.

1. What is an Atom?—a Molecule?—a Physical law?—Physical force?
2. In what circumstances is the weight of a body a correct measure of its mass?
3. What is the difference between the amount of matter contained in a pound of lead and a pound of cork weighed in the usual way?
4. Compare the force of gravity at the Equator, and at any parallel (say 80°) N. or S. latitude.
5. What is the Unit of Force?—a Horse power?
6. Explain what is meant by the Elasticity of flexure?—of torsion?
7. What is the fundamental principle in Hydrostatics? Outline the apparatus by which this principle may be proved. What powerful machine has been constructed on this principle? What is its peculiar advantage?
8. Outline the instrument called Mariotte's tube. State the law which it is intended to verify.
9. Explain the nature and cause of Echoes,—of Resonance,—of Multiple echoes.
10. What is the smallest number of vibrations in a second audible by an ordinary ear?—the largest number?
11. Explain the reasons why signals at sea furnished by fog whistles, sirens, &c., are frequently deceptive. What rule should the mariner follow when he hears the sound, in order to be perfectly safe?
12. What are the general effects of Heat.
13. Explain minutely the experiment by which water is frozen under an exhausted receiver.
14. What is Diathermancy and Athermancy? Give examples.
15. Explain the phenomenon of total reflection. What is the critical angle?
16. Describe a converging concavo-convex lens. For what purpose is it employed?
17. What is Chromatic aberration? How can it be corrected?
18. What is Thermo-Electricity? How is it excited?—Magneto-Electricity?—How excited?

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

METAPHYSICS AND ESTHETICS.

SATURDAY, APRIL 15.—9 A. M. TO 1 P. M.

PROFESSOR WILLIAM LYALL, LL.D.,.....*Examiner.*

1. How is *Metaphysics*, as a *Science of Being*, reconcilable at least to a *Science of Knowing*?
2. In what *School of Philosophy* did this distinction, or rather identity, first emerge? Show how the limits of the two enquiries came to define themselves.
3. Point out the first stage of divergence between *Materialism* and *Idealism* in *Philosophy*. Who were the early representatives of the respective systems of thought?
4. What were the circumstances in which the system or school of the *Sophists* arose? From what opposite points of view did *Gorgias* and *Protagoras* assail *Philosophy*, and so involve all knowledge in uncertainty?
5. How did *Socrates* meet the emergency in thought created by the *Sophists*?
6. In what respects did *Plato* seem to solve the *Difficulty*, on either hand, in regard to the theories of knowing and being?
7. What is the point of difference, but in some sense really the point of accord, between *Plato* and *Aristotle*?
8. What is the doctrine of *Diffidence of Arculana*, and the doctrine of *Probabilities of Carneades*; and how may you connect their views with previous speculation?
9. On what kind of faith did *Philo* insist, and what was the theory of *ecstasy* and *absorption* as held by *Plotinus*?
10. With what name does *Ancient Philosophy* close?
11. What is the place of *Boethius*, *Cassiodorus*, *Isidore* of *Seville*, and the venerable *Bede* of *England*, in *Philosophy*?
12. What questions chiefly divided the scholastic age of speculation, and what was the fate of this question?
13. What are the forms which *Ontological Speculation* takes in *Modern Philosophy*? On what different sides do *Modern Philosophers* range themselves on the question of *Realism* and *Nominalism*?
14. What are the theories that divide the philosophic world on the subject of perception? What is the *Ontological*, and what the *Psychological* element in this question?
15. What is *Kant's* tri-partite division of mind, and in opposition to what division of *Aristotle* was this proposed?
16. On what principle have the emotions been classified, and what seems to afford the only philosophic ground of classification?
17. What is the place of the esthetic emotion? Give a statement of the different theories of the *Beautiful* and *Sublime*. Wherein do *Comenius's* and *Alison's* theories agree?
18. Classify the *Arts*. Classify *Painting* on somewhat the same principle as *Poetry*.
19. Whether do the *Conations* precede the *Emotions*, or the *Emotions* the *Conations*? How may we classify the *Desires*?
20. Is the will but the prevailing desire? What views have been held in regard to the *Will*?

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1875.

THURSDAY, APRIL 22.—8 A.M. TO 1 P.M.

SENIOR CHEMISTRY—THIRD YEAR OF ARTS COURSE.

PROFESSOR LAWSON.....Examiner.

1. Describe Ammonia, as regards its sources, its chemical and physical properties and the mode of testing for its salts. Compare Ammonia, Ammon, Amides, Alkaloids. What is Urea?
2. Give an account of the Manufacture of Phosphorus from Bone Earth, explaining each step of the process, with equations showing the reactions that take place.
3. Give a general account of the principles of Classification of Organic Compounds.
4. What is the constitution, modes of occurrence, formation, properties and reactions of the first series of Hydrocarbons of the Fatty Group, $C_n H_{2n+2}$?
5. What is the Constitution of an Alcohol? Why are the Alcohols classed as monatomic, diatomic, triatomic, &c. What is a substituted Ether? What is the constitution, mode of formation and chemical properties of Glycerol or Ethyl Alcohol? Describe briefly some of the more important Ethylic Ethers.
6. Does Methyl Alcohol exist? To which class or series (as regards atomicity) does it belong? In what way is Methylol Colours produced, what are its properties, and in what way is it used for in cases of poisoning.
7. What is Glycerol, what is a Glucoside, what is a Poly-glucoside Alcohol. Give examples.
8. Compare, as regards their composition and constitution, Potassium Cyanide, Potassium Ferrocyanide, and Potassium Ferricyanide. Describe each salt briefly, and the mode of Manufacture of the Ferrocyanide.
9. Give a concise account of the constitution of the Fatty Acids $C_n H_{2n} O_2$. What is Stearic Acid. Describe the process of Saponification.
10. Compare the Families, Glucides, Alcohols and Ethers, Organic Acids Aldehydes, and Ketones, of the Fatty Group.

FRANCE—ELEMENTARY CLASS.

JAMES LIECHT, Esq., Examiner.

Translate: 11. Cette basilicaine devant celui qui envoi les orages et la calme; cette consocios de nous peultes à la vue de l'Infini; nos chants s'élevaient au loin sur les vagues; la nuit s'approchant; avec ses embouches; le merveille de notre vaisseau au milieu de tant de merveilles; un équipage religieux, salué d'admiration et de crainte; au petit auguste en prière; Deux juchés sur l'édifice, d'une main roulement le soleil sans portos de l'occident, de l'autre éteint la lueur à l'horizon opposé, et prêtant à travers l'immissité, une ceinture attentive à la faible voix de sa créature: voilà ce que l'on se serait peut-être, et ce que tout le cœur de l'homme saffit à peine pour sentir.—*Chénobiosisme.*

11. J'avais lieu d'être content de mon passage. Cela m'inspira un nouveau ardeur pour la médecine. Le lendemain, dès que j'eus diné, je repris mon habit de sobriété, et me remis en campagne. Je visitai plusieurs malades que j'avais soignés, et je les traitai tous de la même manière, bien qu'ils eussent des maux différents. J'en eus chez moi plusieurs époux qui avaient eu des fils hydroptiques. J'y trouvai un petit médecin bien qu'on s'appela le docteur Cuchillo, et qu'on parait de maître de la maison venait d'arriver. Je fis les profondes révérences à tout le monde, et particulièrement au personnage que je jugeai qu'on avait appelé pour le consulter sur la maladie dont il s'agissait.—*Le Sage (Gf. Bas).*

111. *Lesde (sans dessein l'Ank).* Voilà ce qui s'appelle ne pas avoir la moindre idée des convenances! Il faut que je me marche à époux qui avait eu des fils hydroptiques. J'y trouvai un petit médecin bien qu'on s'appela le docteur Cuchillo, et qu'on parait de maître de la maison venait d'arriver. Je fis les profondes révérences à tout le monde, et particulièrement au personnage que je jugeai qu'on avait appelé pour le consulter sur la maladie dont il s'agissait.—*Le Sage (Gf. Bas).*

M. Haberville. En volait bien d'une autre! qu'est-ce que je vais lui! Notre gouverneur qui bat les habits de nos fils!

Ladre. C'est un rat, ce n'est rien, se faites pas attention; c'est une suite de mon système d'éducation; comprenez-vous? Je tiens à ce que mon élève soit tenu proprement. Nous autres philosophes, nous regardons le mensonge comme le mérité de l'âge.

M. Rob. D'accord; mais il ne fallait pas vous donner ce soin. Le premier domestique.

Ladre. Vous n'y êtes pas. Le domestique, c'est moi. Le premier précepte de la sagesse est de servir se passer des autres et de se servir soi-même.—*Scribe.*

*IV. a) Extraits from Boileau (*Les embarras de Paris*); lines 57-69 inc. b) do. from Daillet (*Les contes de Rome*); lines 62-74 do.

Translate into French: A. Elizabeth, Queen of England.—Elizabeth loved her people; and, by her strict economy, she took peculiar care of the public money. Although possessed of many virtues, her passions were too strong to admit of constant restraint, which caused her to commit some injustice; but these faults were opposite to her natural character. No woman ever reigned with more glory; and there are few kings who reign can be compared with hers. It is the most glorious era of English history, and it produced a great number of celebrated statesmen and warriors.

B. Dialogue between M. Jourdain and his Master of Philosophy.
Master.—Very well! It is poetry you wish to write to her? *Jourdain.*—No, no, no poetry.—You only want prose?—No, I neither want prose nor poetry.—It however must be one or the other.—Why?—Because, sir, there

is only prose or poetry in which to express one's self.—There is only prose or poetry?—Yes, sir, all that is not prose is poetry, and all that is not poetry is prose.—And as you speak, what is that?—Prose.—What! if I say: *Nousde, bring me my slippers, and give me my night-cap, is this prose?*—Yes, sir.—On my faith! for more than forty years I have been speaking prose without my knowing anything about it, and I am exceedingly obliged to you for having apprised me of that.

(1). Distinguish between: *Voilà ce que (I)* and *Voilà ce qui (II)* mention the corresponding *interrogative* pronoun, and translate: What causes so much reform? What I am thinking of, is your welfare. That is not what he is complaining of. I distinctly remember what was spoken of at the meeting. What was done, was well done.

*V) *Avez-vous (I)* and *avez (II)*. Accrue for this expression. Explain 1): why the verb must be in this mood, 2) in what case this mood may be substituted by the INFINITIVE, 3) when the verb is to be preceded by *en*. Write an ex. in illustration of each case.

(3). What is to be observed respecting the following expression: *enfant d'homme* (II)? 2. Mention other similar forms. Translate: You ought to succeed. He should have taken a prize.

(4.) Write the following sentences correctly, and state the rule in each instance: *Il y a plus que cent ans. C'est sans qu'il l'a fait. Vous êtes un Anglais. Il sera lui reconnaître. Les classes je pense à elle. Que questions—mes allées parler d'elle, et répondre à elle.*

(5). Determine the position of the noun, following in English the relative pronoun, *whose*, and give two exs. How do you express the *interrog.* pronoun, *whose*? Translate: God, from whom we have received mercy, and to whose love we owe what we are. *Le fils de la reine qui se trouve en pays étranger* . . .; *luxe and why should the construction be altered!*

* (6) *Quinquage; polyphème; chagrin; nul; belle.* Write short exs. on these words.

(7) Whatever was your intention, you were wrong to act thus. However beautiful she may be, she cannot conceal her ignorance. Show by an ex. that *whatever*, written in one word, may assume the plural *whatever*. Write the equivalents of *whatever* may be said about it. Wherever he, they (s) may be. It is some sixty years old.

(8) *Placez, jeter, mener, appuyer, payer*; write the present part. & the 3d pers. pl. *inf.* of these verbs. Also, the 3 pers. sing. of *partir def.*, 3d pers. pl. of *faire*, and the participles of: *acquiescer, mener, justifier, poursuivre, nuire, élever*.

(9) *The reflexive noun.* (*2d pers. sing.*) assumes a peculiar form in the Imperative mood! Give an ex.; write the same ex. in the interrogative and negat. imperat. forms of the *Indefinite*. Mention all the verbs that are conjugated with *être*.

(10) Correct what is wrong in the follg. sent., and explain the agreement of participles: *Les personnes oisives ont le monde, s'aiment ordinairement personnel.* His sent part. in *course*. Ce sont des connaissances utiles qu'il s'est acquises. C'est aux sciences naturelles qu'il se sont voués.

(11) Give the rules of agreement for participles in: The quantity of snow that has fallen (*fait or faite*). Those persons have written to me another though they have never seen each other. We have been walking more than four hours. The physicians that have been sent for.

(12) Mention adverbs which follow the *participle* and the *infinit.* *Ainsi* requires inversion of the subject in one case! write an ex. *Ce merveilleux enfant élève.* Correct this sent. giving full explanation. *Parler son, haut, parler basement, hautement.* Point out the difference between these expressions.

* (13) The Conjunction *whether* has three forms? Translate: I desire to know whether you will come. Whether I read or write. He doubts whether he will succeed.

(14) Illustrate the use of *chez; en retard; vers; envers; dans, en*—Name three prepositions which are also used as *adverbs*.

* (15) Write short notes, giving date and associating the principal works of the following authors: Bossuet, Boileau, J. J. Rousseau, Voltaire, and Daillet.

Questions marked (I) are to be substituted for those marked (*), by the advanced class.

SESSIONAL EXAMINATIONS, 1876.

FRIDAY, APRIL 21.—2 P. M. to 6 P. M.

GERMAN ELEMENTARY CLASS.

JAMES LEBREY, ESQ., Examiner.

Translate: I. Schiller's *Taxiderm*.

Und du bist leb, und war's mir seit Gross-
en Bewein,
Vor der menschlichen Hefe es walt,
Unter Lärren die einzige blühende Frucht,
Allein in der grünen Blumenschicht:
Und unter dem Schatz der menschlichen
Rede,
Bei des Urgebens der trauerigen Oede.

Und schmerzest ducht' lebte, du bruchst
heran,
Euchst kundest Colosse zugleich,
Wird schweben auch mir; in des Scher-
schen Weben
Lass ich bei der Koralle unklammerter
Kraut,
Gleich dich mit der Strahl mit räum-
lich Tugend;
Doch es stirb mit dem Heil, er rief mich
nach oben.

II. Uhland's *Singers' Flock*.

Schon stehn die beiden Sänger im hohen Südensaal,
Und auf dem Thron sitzen der König und sein Gemahl;
Der König funkeln prächtig wie blauer Nordlichtschein,
Die Königin sitzt und milcht, als blüh' die Vollmond sein.

Da schlug das Geleide's Saaten, er schlug sie wundervoll,
Dass reicher, inner reicher der König aus Olive schwoll,
Dass strömte himmlisch heile des Jünglings Stimme vor,
Das Allen Sang daswischen wie dampf' der Geisterchor.

Sie singen von Loth und Liebe, von sel'ger golden Zeit
Von Freiheit, Mäuseründe, von Treu' und Heiligkeit,
Sie singen von alten Sitten, was Menschenherz durchdringt,
Sie singen von alter Hehre, was Menschenherz erregt.

III. Wieland's *Adriens*.

Zum Unglück erstreckte sich die schlimme Gewohnheit auf die Hand-
lungen: denn gemeinlich schlössen sie den Kiebsitz erst, wenn der
Vogel entflohen war. Dies zog ihnen den Vorwurf der Unbesonnenheit
zu; aber die Erklärung bewies, dass es ihnen nicht besser zülg, wenn sie
sich besaßen. Machen sie zwischen stündlich oft bezeugte irgend einem
sehr dummes Streich, so kam es immer dabei, weil sie es gar zu gut
machen wollten; und wenn sie in des Augenposten ihres gemeinen
Wesens recht lange und ernstliche Betrachtungen hielten, so konnte
man sicher darauf rechnen, dass sie unter allen möglichen Entschlüssen die
schlechtesten ergreifen würden.

IV. A. Wilhelm's *Eiser vom Lohndien*.

Jahob, Wälder. Um's Himmelsweil, Tanne—Eschrocken Sie uns
nicht so!

Gertrude. Theil Schickst Euch, mir sitzt Frau auch gar nichts an
Liebe zu thun. Wenn ich Euch auch nichts gide, sollt ihr doch das
Gebot Eures sterbenden Vaters in Ehren halten. Ich laß nicht studirt,
aber das weiß ich doch, dass es eine heilige Pflicht ist, den Wunsch
des Ehrens zu erfüllen.—Habt ihr denn gar nicht gemerkt, warum ich meines
verstorbenen Bruders Tochter in's Haus nahm?

Jahob. Wie, Tante Louise? Ihre Nichte? Unsere Verwandte?
Gertrude. Eine so willfällige Verwandtschaft hat gar nichts zu sagen.
Sie ist nicht reich, aber schön und, wie die Hauptstadt ist, gut und bear.
Aber kein Feilerdeens, sondern eines reichen Einrichs, dem nicht Alles
wird gut, was lange währt. Drum facultät nicht langel! Eiser von Euch

wenn unter die Haube, will sagen unter den Pantoffel. Ueberlegt jetzt, und
wenn ich wiederkomme, muss ich wissen, welcher von Euch Bittungen ist.
Adieu!

Translate into German:

A countryman brought home from the city five of the most beautiful
peaches that could be seen. But his children saw the fruit for the first time,
and were very much astonished at and pleased with the beautiful apples
with the red, velvety cheeks. The father gave one to each of his four sons,
and one to the mother. . . . This goodness has been absent from his native
country for many years; he is a German, and a man much to be respected.
What can he be laughing at? It should have been thought of earlier. The
longer the days are, the shorter are the nights. The peacock was not allowed
to leave the room. What would you have him do? Paris is said to be the
finest city in the world. The institution is to be opened next week! Half
of this house is to (be) let. German is the only language in which he is
not perfect yet. The affair happened while I was in London. It is
not to be thought of.

(1) Decline in the four cases sing.: die edelste (blühende) Braut; blaue'ger
Nordlichtschein; a noble English count; white hair (*Sing. & Plur.*); every
good people.

(2) What part of speech is *dampft* (III)? Which is its English equivalent.
Show by two exs. that there are other corresponding forms. Explain the
Syntax of the word as (II).

(3) Indicate, by giving an ex. for each, the three forms in which the
Subjunctive degree may be expressed. Compare: *sein, sein, soll, wäre,*
träste, gert, sähe. Translate: You drink stronger coffee than it is good for
you. I know it is more strong than good. London is nearly as large as
Paris. The richer he becomes, the less he gives to the poor.

(4) In what do *assonant* and *dissonant* verse differ? Which verbs reject
the syllable *ie* in the part. p.? Write the Imperf. and past part. of: *erschauen*,
aufhellen, *überhellen*, *essen*, *schlafen*, *widerprechen*, *anerkennen*, *überlassen*,
geben, *ausgehen*, *liegen*, *schicken*, *zurückkommen*, *verwechseln*.

(5) Analyze the sentence beginning with: *Machen sie . . .* (III), fully
explaining the various forms of construction.

(6) Write exs., showing (1) the position of the negation *nicht*; (2) the
position of the adverbials of time and place; (3) the position of the Subject
if the sent. begins with another part of speech. Correct the sent.: *Nachdem*
Gott hat erschaffen die Welt, er ruhe an am nächsten Tag.

(7) What form does the English present part. assume in German?
Translate: Retaining the matter so thin he became angry. When has the
degree of indignation the value of a relative conjunction. Translate: I
don't know why he has not written.

(8) State the difference between the English and German passive voice,
and give three exs. in illustration of it.

(9) Into how many periods is the history of German literature divided?
Mention them. Give the dates of the two classical periods, state briefly the
characteristic features of both. Which are the most ancient documents of
German poetry; what is their metrical form, and date. Which is called the
Old High German Language?

(10) Mention the most important written prose works of the 2nd period
(of the 8th and 9th cent.). What is the *Heliand* and in what dialect is it
written?

(11) Which is the most celebrated work of the 3rd period? Who and
by whom was it written? What is its metrical form, and what its subject?
What is *Isidorus*? What relation does it bear to the other work?

(12) Mention the most celebrated writers of the second classical period.
Give dates of Birth and Death of Schiller and Goethe.

(13) Classify Schiller's dramas. Which are his best lyric poems and
when composed? What is the leading feature of his writings?

(14) Which of his dramas particularly display the beauty of the
German Language? State the principle features of any two of them.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

THURSDAY, APRIL 13, 9 A.M. TO 1 P.M.

ETHICS.

VERY REV. PRINCIPAL ROSS, D.D. *Examiner.*

1. State the arguments for and against the claim of Ethics and Sociology to be recognized as true Sciences.
2. What special difficulties are to be encountered in the study of mental Phenomena?
3. What method of investigation is to be employed in our efforts to determine the law of mental processes?
4. Define volition; and mention the mental states and operations by which it is preceded.
5. What determines the choice of the will?
6. Classify the motives which stimulate to action.
7. Illustrate the power of the desire of society as a principle of action.
8. Show the importance of the desire of Superiority in improving the Individual and Society.
9. What elements must necessarily enter into the constitution of the Supreme Being?
10. Analyse the phenomena connected with an act of conscience.
11. Explain the Utilitarians system of morals. State the objections to which it is open. Name the principal advocates of this system in Great Britain.
12. Write notes on Hutcheson's theory of morals;—on Smith's theory of moral sentiments.
13. Prove that justice is a duty.
14. Give Whewell's classification of duties.
15. Did Socrates act rightly when, being unjustly condemned to die, he refused to escape? Assign reasons.
16. What is the distinguishing feature of the composite order of Architecture?
17. What is the supposed origin of the column?

POLITICAL ECONOMY.

1. Define Political Economy.
2. What is a Product?
3. By what means can human labor, so far as it is merely the exercise of power, be supplemented?
4. What incentives should be employed to stimulate productive industry?
5. In what way does the Poor Law, especially in Great Britain and in this country, interfere with these incentives?
6. What are the effects of minute subdivision of labor upon the laborer?
7. What principally regulates the cost of production?
8. Is the removal of Capital from a country necessarily a national loss? Assign reasons.
9. In what way does credit assist production?
10. Compare the advantages of large and small farming.
11. Compare the advantages and disadvantages of Direct and Indirect taxation.
12. Write notes on the *Leisier-faire* principle.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1876

WEDNESDAY, APRIL 25.—9 A.M. TO 1 P.M.

MODERN HISTORY—FOURTH YEAR.

PROFESSOR DeMILL, M. A. Examiner.

(Not more than six questions are to be answered.)

1. The chief events in the history of Rome (a) political, and (b) ecclesiastical, during the reign of the Emperor Justinian.
2. The revival of the Empire of the West by Charlemagne, its causes, and results.
3. The Empire in Germany from Rudolf I. to Maximilian I; its domestic and foreign relations.
4. The chief marriages by which the power of the House of Hapsburg was enlarged and perpetuated.
5. The pontificate of Innocent III.
6. The history of Switzerland from the Battle of Morgarten to that of Murat.
7. The history of Poland from the accession of John Sobieski to the final partition.
8. The States General of France, their origin, chief meetings, causes for which they were summoned, and proceedings on each occasion.
9. The French Parliaments.
10. The history of the Ottoman Empire from the conquest of Constantinople to the death of Amurath IV.
11. The origin and development of civil law in Europe.
12. The Feudal System.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1876

THURSDAY, APRIL 20—9 A.M. TO 1 P.M.

CONSTITUTIONAL HISTORY—FOURTH YEAR.

PROFESSOR DEMILL, M. A. Examiner.

(Not more than six questions are to be answered.)

1. The demands of Henry VIII, in Parliament were considerable both in frequency and amount.
2. A difference arose between Queen Elizabeth and the Parliament concerning the succession.
3. There was a disagreement between King James and the Commons arising out of the question of the war in the Palatinate.
4. Give an account of the proceedings of the first and second Parliaments of the reign of Charles I.
5. What was the Council of York?
6. Enumerate the salutary measures of the Long Parliament.
7. What were the circumstances that brought about the Restoration?
8. Give an account of the impeachment of the Earl of Clarendon.
9. Show the power of the press during the reign of Charles II.
10. Relate the proceedings of the Convention of 1688.
11. What were the chief Constitutional measures of the reign of William III.
12. Explain the distinctive principles of Whigs and Tories.

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

WEDNESDAY, APRIL 19.—3 to 6 P.M.

EARLY ENGLISH HISTORY—FOURTH YEAR.

PROFESSOR DeMILL, M. A. Examiner.

(Not more than six questions are to be answered.)

1. Give an account of the conversion of the Anglo-Saxons to Christianity.
2. Mention the earliest notices (a) of the Teutonic Race; and (b) of the Angles and Saxons in Germany; and show the value of such notices.
3. The institutions of the Franks may throw much light on those of the ancient Saxons in Germany.
4. Describe the mode of settlement adopted by the Teutonic invaders of Britain.
5. Enumerate the privileges of Royalty among the Anglo-Saxons.
6. In the course of time the Anglo-Saxons institutions became subject to modifications, and underwent slow but regular development.
7. Give an account of the growth of the Towns and Guilds during the Norman period.
8. Describe the military system under the Normans.
9. Give an account of the system of taxation under the Plantagenets.
10. Show the change which took place in the respective position of the different orders of State (i.e., the monarchy, nobility, clergy, and commonsality,) during the Norman and Plantagenet periods.
11. Give a summary of the progress of Parliament in the acquisition of various rights and privileges up to the time of the Tudors.
12. Give an account of the Villeins, from the Norman period to that of the Tudors.

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1875.

THURSDAY, APRIL 15, 4 A.M.

FOURTH YEAR—HYDROSTATICS, OPTICS, ASTRONOMY.

PROFESSOR MACDONALD,.....Examiner.

- Two fluids that do not mix are at rest in the same vessel. Prove that their common surface is level.
- ABCD is a parallelogram (breadth h) immersed vertically in a liquid, AD parallel to the surface and at a depth h below it. Draw its diagonals AEC and BED, and compare the pressures on the triangles AEB and CED.
- How is the law, $PV = P'V'$, for elastic fluids proved? Write the equation connecting volumes, pressures and temperatures, for the same quantity of a gas. There are 100 cubic inches of air (dry) at temp. 32° , barometer 30 inches: what will be the volume of this air when the barometer falls 1 inch, and the temperature rises to 72° Fahr?
- Draw a Forcing pump, and find approximately the resistance to be overcome by a piston of 2 feet area, which delivers water at a height of 44 feet above the surface of the water raised.
- Account, on the Thermo-dynamical theory, for the disappearance and evolution of heat in the processes of liquefaction and congelation. Also: 9 lbs. ice at 32° are exposed to the action of 1 lb. of steam at 212° . After a short interval what is the result?
- A heavy conical shell, was allowed to sink in water, till the water rose through $\frac{1}{2}$ of the internal height of the shell. Assuming that the pressure of 33 ft. of water is equivalent to 1 Atmosphere, find the depth of the vertex of the cone below the surface.
- The flame of a candle, 2 inches in height, is placed in front of a convex mirror of 3 feet radius and at a distance of 16 feet. Find the position and magnitude of the image, and show whether it is erect or inverted.
- Describe the Astronomical Telescope, and find its magnifying power.
- The formula for the principal focal length of a concavo-convex lens is $\frac{1}{f} = (\mu - 1) \left(\frac{1}{r} - \frac{1}{r'} \right)$. Adapt this to the cases of a double-concave, double-convex, and plano-convex lens.
- Show the importance to the sailor of a Noon-observation of the sun.
- Explain the sidereal, tropical, and anomalistic years, mentioning any secular effects dependent on their differences.
- Give a circumstantial account of the moon's motion, correcting any popular misconceptions you are aware of.
- Show how to find the equation $R = r \cdot \frac{\sin z + \sin z'}{z + z' - l - l'}$, which according to the usual notation determines the moon's horizontal parallax.
- Prove, geometrically, Kepler's second law: "that the areas swept over by the radius vector are proportional to the times."

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

FRIDAY, APRIL 21. 4 P.M.

MATHEMATICS WAVERLY PRIZE.

PROFESSOR MACDONALD,..... Examiner.

1. Similar polygons may be divided into the same number of similar triangles having the same ratio to one another that the polygons have.

2. A B C is a triangle, D the middle point of B C. In A D produced take any point Q, and draw B Q and C Q meeting the produced sides of the triangle in L and M. Prove L M parallel to B C.

3. If any number of factors, $x+a$, $x+b$, $x+c$, &c., be multiplied together, shew the law of the formation of the co-efficients of the successive powers of x , commencing with the highest. This can be employed to prove an important theorem.

4. Prove, by an application of the Binomial Theorem, that

$$1^n + n^n + \left(\frac{n(n-1)}{1.2}\right)^n + \&c. + \frac{2n(2n-1)\dots(n+1)}{1.2.3\dots n}.$$

5. Sum n terms of the series, $1.1^2+3.3^2+5.3^2+\&c.$

6. A, B, and C are three stations in a straight line, whose distances from each other are given. At these the angles of elevation of a balloon (α, β, γ) are observed at the same instant. Shew how to calculate the height of the balloon.

7. Prove $\sin \psi > \psi - \frac{\psi^3}{6}$.

8. If A, B, C, are the angles of a triangle, prove that

$$\sin^2 \frac{A}{2} + \sin^2 \frac{B}{2} + \sin^2 \frac{C}{2} - 2 \sin \frac{A}{2} \sin \frac{B}{2} \sin \frac{C}{2} = 1.$$

9. If p be the probability of an event happening in a single trial, and $q=1-p$; expand $(p+q)^n$, and shew the probabilities expressed by the successive terms of the expansion.

DALHOUSIE COLLEGE AND UNIVERSITY

HALIFAX

SESSIONAL EXAMINATIONS, 1876.

TUESDAY, APRIL 25th.—9 A. M. TO 1 P. M.

B. A. HONOUR EXAMINATIONS IN CLASSICS.

HORACE: EPISTLES, BOOKS I, II. *ARS POETICA*.
 JUVENAL: SATIRES, III, X, XIII.
 CICERO: TUSCULAN QUESTIONS, BOOK I.
 TACITUS: ANNALS, BOOK I.

PROFESSOR JOHNSON, M. A.,..... *Examiner.*

1. Translate:

- (a) Hor: Epist. II 1, vs. 245—270.
 (b) Juv: Sat. III, vs. 274—301.
 (c) Cic: Tus. Quest. I, Chap. 22.
 (d) Tac: Annals, I, Chap. 18.

2. Write grammatical notes on some peculiarities in the following sentences:

- (a) Vir bonus et sapiens digni esse paratus.
 (b) Reddes iulco loqui; reddes ridere decorum.
 (c) Rexque paterque
 Audisti comam.
 (d) Aclamavisse ut filius illius tribunus legatione eaungeretur.
 (e) Macte virtute!
 (f) Nunc Sisyra, nunc agrestem Cyclops movetur.

3. Explain the allusions in these passages:

- (a) Digni. *Caeris cetera*
 (b) Paucitas laico, Io raga, tristic Orotom.
 Ripa nutritus in illa
 Ad quam Gorgonei delapsa est prima cabilli.
 (d) Quisquis effuse uno partem oculis ante Minervae.

LATIN COMPOSITION.

4. Translate into Latin: Crassus was liked by none, but few could afford to despise him; while his ambition might have been kept within bounds by the concession of legitimate honours and dignities, and the show of listening to his counsels. At the moment when Pompeius was passing over to the people, Crassus might have been retained on the side of the oligarchy from which he had never wholly estranged himself. His immense riches, the sources of which lay close at hand, gave him clients in the Senate as well as among the Knights; his eloquence, his freedom, his devices, and his talents, constituted an army in the heart of the city to sway the debates of the forum and overawe its seditions. But when the nobles refused to support him in his suit for the Consulship, they drove him to league himself with his popular competitor Pompeius; when they discovered him as a confederate of Caesars, they threw him into the arms of Caesar.

DALHOUSIE COLLEGE AND UNIVERSITY

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

WEDNESDAY, APRIL 12TH.—3 P. M. TO 6 P. M.

B. A. HONOUR EXAMINATIONS IN CLASSICS.

PLAUTUS: MILES GLORIOSUS.
 TERENCE: HEAUTONTIMORUCHOS.
 VIRGIL: GEORGICS. BOOKS I, IV.

PAPERMAN JUNIOR, M. A. Examiner.

1. Translate: (a) *Mil. Glor.* vs. 856—862.
 (b) *Heautontim.* Act III sc. 2, vs. 26—53.
 (c) *Georgics.* Book IV, vs. 217—217.
2. Explain the syntactical construction of these sentences:—
 (a) *Neque eo tunc circo, quo quicumque illum senserim: Sed si quid, ne quid.* *Heaut. Act III, sc. 2, vs. 43, 44.*
 (b) *Nequequam commedias usquam horum salivi loqui, Nec quam male facerem crederem mihi impudens Licere.* *Heaut. Act III, sc. 2, vs. 48—50.*
3. Translate the following sentences and write grammatical notes where you think explanation necessary:
 - (a) *Ita me Di amant ut tunc Menedem viderem Miseret me.*
 - (b) *Quare speret hanc res noutiquam neglecta est mihi.*
 - (c) *At hoc dominor, qui tam facile poteris Persuaderi illi quae solet quos sperare.*
4. Explain these forms:

dixit, red, horsum, tis, acutum, mi's, impetrassere, vslup, faxo, ilasc, opol.
5. Translate and write explanatory notes on:
 - (a) *Miram bello victorare te tam vili vitioo.*
 - (b) *Quid ais tu? Inne tibi ego videar oppitio Acherunticus?*
 - (c) *Vnaque servati sedent in thoro nantas Glasco et Panopae et Inso Mellicetas.*

DALHOUSIE COLLEGE AND UNIVERSITY.

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

Monday, April 17th. 9 a.m. to 1 p.m.

B. A. HONOUR EXAMINATIONS IN CLASSICS.

PROFESSOR JOHNSON, M. A.,.....*Examiner.*

(*N. B.—Two questions only in each group are to be answered.*)

CLASSICAL LITERATURE.

- A. 1. The *Blegy*: the origin of the name, its metre, mode of recitation, subjects, and principal writers in early times.
2. Distinguish the two schools of Greater Lyric poetry: give some account of the chief writers in each school with dates.
3. Greek Comedy: meaning of the name, origin of comedy, its subjects in different periods, chief writers in each period, and its resources.
- B. 1. Athens was specially adapted for the cultivation of Oratory. Democritus and his contemporaries.
2. Bucolic poetry and its authors.
3. The three great Tragedians of Athens are connected with the battle of Salamis. Differences between Actors and Chorus. Divisions of a tragedy. Changes introduced by Euripides.
- C. 1. Saturnian Verse.—Falsetus Antillanus.—Histories.—Improvements of Livius.
2. Classification of Latin Comedies: their actors, subjects, metre, accompaniment, chief writers.
3. Roman Satire: origin of name, subjects and chief writers with dates.

COMPARATIVE PHILOLOGY.

- A.—1. Illustrate the principles, (a) that the same word takes different forms in the same language, (c) that different words take the same form in the same language.
2. State Grimm's Law in a general form. How does Prof Max Müller account for the change? Point out exceptions to the law.
3. Write notes on: *Sigloft-nouns* and its equivalents in Sanskrit, Greek and English; *valant*; *valant*; *age*; *nyctis* and its equivalents in Greek and Sanskrit.
- B.—1. Compare the methods of expressing degrees of comparison in Latin, Greek, and English.
2. Point out remains of (a) an Instrumental case in English, (b) an Ablative in Greek, and (c) a Locative in Latin and Greek.
3. (a) Trace the following words to their originals: *out*, *ancum*, *metre*, *je suis*, *fin*, *liver*, *londre*, *gré*.—(b) What words in French come from these: *comes*, *status*, *causa*, *castellan*, *knippen*, *scandalum*, *caput*, *magis*.

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

THURSDAY, APRIL 20TH.—3 P.M. TO 6 P.M.

B.A. HONOUR EXAMINATIONS IN CLASSICS.

(THUCYDIDES: BOOK II.
GREEK. DEMOSTHENES: DE CORONA.
(PLATO: PHEDO.

PROFESSOR JOHNSON, M.A. Examiner.

I. Translate:—

(a) Thucyd. Book II., chap. 41.

(b) Demosth: De Corona, secs. 69-75;

beginning, Ἄ μὲν δόξα: τοῦ ψαρῆματος—
ending, ὧστε καὶ τὸς ἀνοδείζεις ἐκ τούτων δόξαι εἶμι πιστέον.

(c) Plato: Phædo, chap. 36.

2. (a) Show clearly the connection of clauses in the sentence Ἐἶναι δὲ γὰρ, οἷμαι..... and account for the construction of εὐκρίτους. (extract c).

(b) Explain the syntactical construction of the Infinitives in the sentences in extract (b):—τοῦ μὲν γράφου * * * καίτω. τὸ δὲ μὲν προσηγορεύου * * * τούτω.

(c) Supply ellipses where required in extract (a).

3. Write notes on some points of Syntax in these sentences:—

(a) ἔργου δὲ τῆς πόλεως, ἕνεκεν ὅτις εἰ κλειότες.....

..... ἐκείνου δὲ ἔχουσι τοὺς δόξαντας τὸ μὲν ἐκείνου
ὡστε διασφραῖσται πολλὰ.

(b) οὐκ ἐν τοῖς ἰουδαίοις καὶ ἐν τοῖς παρθεναίοις
ἐπὶν ἐκείνου τὸ ἀφῆκε ἕρῃ προσηγορεύου.

(c) Ἡ περὶ τῆς Σουλᾶς, μὴ γὰρ οὐκ αἶνον ἢ ἐρῃ πρὸς ἑαυτὴν ἀπαλλαγῆ,
φύσιν πρὸς θεοῦς καταλλέειν.

4. (a) Give an account of the method of reckoning time at Athens.
(b) Under what circumstances was the oration De Corona delivered?

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

WEDNESDAY, APRIL 12—3 P.M.

HONOUR MATHEMATICS. I.

PROFESSOR MACDONALD,.....*Reviser.*

1. Show that the equation $Ax + By + C = 0$, represents a straight line, and find the intercepts of the axes.
2. Draw the lines represented by the equation, $y^2 - 2xy \cos \alpha + x^2 = 0$, and find the angle between them.
3. Find the distance of the point (x, y) from the line $x \cos \alpha + y \sin \alpha - p = 0$. Hence find the equation to the line which bisects the angle between two given lines.
4. Explain the abridged notation, $\alpha \sin \beta \cos \gamma = 0$, and show that if the sides of a triangle are represented by $\alpha = E, \beta = F, \gamma = G$, the line joining the centres of the inscribed and circumscribed circles is $\alpha(\cos C - \cos B) + \beta \cos A - \cos C) + \gamma(\cos B - \cos A) = 0$.
5. Trace the circle whose equation is $a(x^2 + y^2) + 2x(x + y) = 0$, and find the equation to a circle referred to oblique axes (tilted at angle ϕ).
6. Show that, c being the radius and l the latus from the pole S to the centre, the polar equation to a circle is $\rho = r^2 + l^2 - 2lr \cos(\phi - \alpha)$. Hence deduce the propositions of Euc. III, 35, 36.
7. The chord of contact of two tangents to a circle passes through a fixed point. Show that the locus of the point (h, k) from which the tangents are drawn is a straight line.
8. If $\alpha + \beta + \gamma + \delta = \pi$, show that the product of the factors $(\cos \alpha + \sqrt{-1} \sin \alpha)(\cos \beta + \sqrt{-1} \sin \beta) \dots = \cos \pi + \sqrt{-1} \sin \pi$.
9. Find the exponential values for $\cos \alpha, \sin \alpha, \tan \alpha$, viz.
$$\cos \alpha = \frac{1}{2} \left(e^{\alpha \sqrt{-1}} + e^{-\alpha \sqrt{-1}} \right), \&c.$$
10. Manipulate one of your results in 9 above to show
$$\tan^{-1} x = x - \frac{1}{3} x^3 + \frac{1}{5} x^5 - \&c.$$
11. Resolve $\sin \phi$ into factors, $\phi \left(1 - \frac{\phi^2}{\pi^2} \right) \left(1 - \frac{\phi^2}{4\pi^2} \right) \dots$
and prove, by comparing this with another series for $\sin \phi$,
$$\frac{\pi^2}{6} = \frac{1}{1^2} + \frac{1}{2^2} + \frac{1}{3^2} + \&c.$$
12. Sum the series, $\sin \phi - \frac{1}{2} \sin 2\phi + \frac{1}{3} \sin 3\phi - \&c.$ to infinity. Derive from it (1) a series by differentiation, (2) by integration.
13. Show the relations of the sides and angles of a spherical triangle to those of its polar triangle; and from the value of $\cos A$, by means of the relations you have found, deduce $\cos a$.
14. Given the latitude of the place, and the declination and altitude of the sun, to find the time of the day.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

MONDAY, APRIL 17.—9 A.M.

HONOUR MATHEMATICS. II.

PROFESSOR MACDONALD, Examiner.

1. Find the equation to the tangent to a central conic, (1) by the Geometrical method, (2) by the method of the Calculus, and show that the result is agree.

2. Determine the intercepts on the axes of X and Y made by the normal in the ellipse, at the extremity of the *latus rectum*.

3. The locus of the middle points of parallel chords in a parabola is a line parallel to the principal diameter.

4. Solve these problems by means of the equator to the tangent, $y = ax + \sqrt{a^2x^2 + b^2}$: (1) the perpendicular from the centre on the tangents to an ellipse intersects it in the curve, $(x^2 + y^2 = a^2x^2 + b^2y^2)$, (2) the locus of the intersection of tangents to an ellipse, which are at right angles to each other, is a circle.

5. PS p is a focal chord of an ellipse. Take SQ, along SP, a mean proportional between SP and S p, and prove that the locus of Q is an ellipse, whose centre is S.

6. CP and CD are conjugate semi-diameters, a and b the semi-axes; prove $CP^2 \pm CD^2 = a^2 \pm b^2$, according as the curve is ellipse or hyperbola.

7. Solve the general equation of the second degree for y , and determine the nature of the curve from considering the values of $b^2 - 4ac$. (The equation is, $ax^2 + bxy + cy^2 + dx + ey + f = 0$.)

8. Refer to its centre and principal axes the curve $2x^2 + 2xy + 3y^2 - 16y + 23 = 0$.

9. If $v = \frac{P}{Q}$ where P and Q are each a function of x , find $\frac{dv}{dx}$ and apply

the result to differentiate, $v = \frac{b - e^x}{x^2}$.

10. Differentiate $\log \frac{\sqrt{x^2+1} + \sqrt{x^2-1}}{\sqrt{x^2+1} - \sqrt{x^2-1}}$, and $\sin^{-1} \frac{x}{\sqrt{1+x^2}}$.

11. Prove that if $v = f(x, y)$, $dv = \left(\frac{dv}{dx}\right) dx + \left(\frac{dv}{dy}\right) dy$, and from this deduce the total second differential coefficient, d^2v .

12. If $y = a \sin x + b \sin 2x$, eliminate the constants a and b , shewing that $\frac{d^2y}{dx^2} + 5 \frac{dy}{dx} + 4y = 0$.

13. Cut the greatest cylinder out of a given sphere.

14. Find the greatest isosceles triangle that can be inscribed in a given ellipse, having its vertex at the extremity of the minor axis.

DALHOUSIE COLLEGE AND UNIVERSITY.

HALIFAX.

SESSIONAL EXAMINATIONS, 1876.

THURSDAY, APRIL 20.—3 P.M.

HONOUR MATHEMATICS. III.

1. Take the ordinate on the upper side of the axis of X , and show that a curve is concave or convex to the axis of X , according as $\frac{d^2y}{dx^2}$ is negative or positive.

2. The curve, $y^3 = x^3 - ax^2$, has asymptotes; find them. The curve, $ay^2 = x^2 - bx^2$, has no asymptotes; show that it is wholly on the right side of the origin, and symmetrical with respect to the axis of X , and find the angles at which it cuts that axis.

3. Integrate the following: $\frac{(x+b) dx}{x^2+9bx}$, $\frac{x^2 dx}{1+x^2}$, $\frac{\sqrt{1+x}}{\sqrt{1-x}}$, dx ; and find

formulas of reduction for the integration of $\frac{x^m dx}{\sqrt{1-x^2}}$, and $\sin^n \phi d\phi$.

Write also the the integrals of the forms, $\sqrt{a^2 \pm x^2}$, $\frac{1}{a^2 \pm x^2}$

4. Find expressions in the notation of the Integral Calculus for a plane area, a surface of revolution, a solid of revolution. (Rectangular co-ordinates.)

5. Explain "integration between limits," and find the area of the Lemniscate, ($r^2 = a^2 \cos 2\phi$), from 0 to π .

6. Find the radius of curvature of the parabola, and show that at the vertex, it is $= 2a$. ($y^2 = 4ax$)

7. Find the centre of gravity of a paraboloid of revolution.

8. The attraction being $\propto \frac{1}{(\text{dist})^2}$, prove that the attraction of a material line of indefinite length on an external particle is $\propto \frac{1}{\text{dist}}$.

9. Find the line of quickest descent from the focus of a parabola axis vertical and vertex at the top, to the curve. (It is equal in length to the latus rectum).

10. If the substance of the earth were homogeneous, and a straight tunnel existed from pole to pole, show that a body dropped in at one end would swing from the one pole to the other, and find the time of an oscillation.

11. Find the differential equation to a central orbit, $\frac{d^2u}{d\phi^2} + u = \frac{P}{h^2 a^2}$, and show that under the known law of gravitation, a planet describes a conic section, the sun being in one of the foci.

12. If a particle revolve in a circle, the centre of force being in the circumference, the force is proportional to $\frac{1}{(\text{dist})^3}$.