## CALENDAR

AND

## EXAMINATION PAPERS

OF
©athousie Collegr and © Intibersitn,

HALIFAX, NOVA SCOTIA.

SESSION 1870-71.

HALIFAX:
PRINTED FOR THE UNIVERSITY
BY "NOVA SCOTIA PRINTING COMP'ANY'?
1870.

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SACIVITAA

## CONTENTS.

Page
Academic Year ..... 5
Governors and Senate ..... 7
Faculty of Arts ..... 9
Faculty of Medicine ..... 9
Faculty of Arts-Sessions ..... 11
Admission of Students ..... 11
Matriculation Examination ..... 12
Course of Study-Winter Session ..... 12
Summer Session ..... 13
Fees ..... 13
Graduation in Arts ..... 14
Regulations for Examinations ..... 14
Scholarships ..... 15
Prizes and Certificates of Merit ..... 15
Attendance and Conduct - ..... 16
The Library ..... 17
Course of Instruction-Winter Session ..... 18
Classics ..... 18
Mathematics ..... 19
Ethics and Political Economy ..... 19
Logic and Metaphysics ..... 20
Chemistry ..... 20
Natural Philosophy ..... 20
History and Rhetoric - ..... 20
Modern Languages ..... 20
Course of Instruction-Summer Session ..... 21
Time Table ..... 22
Prizes and Certificates of Merit ..... 23
Examinations, 1868-9 ..... 24
Graduates of the University - ..... 26
Undergraduates ..... 26
General Students ..... 28
Medical Faculty-Summer Session ..... 29
List of Medical Students ..... 32

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1870-71.
1870.

Oct. 21. Fr Meeting of Board of Governors.
26. W. Opening of Winter Session. Matriculation Examination and Examination for Scholarships.
27. Th. Supplementary Examinations.
28. Fr. Meeting of Senate. Registration and Matriculation.
31. Mo. Classes opened, and Class Tickets issued.

Nov. 1. Tu. Meeting of Convocation at 11 o'clock, a. m. Addresses by Principal Ross and Professor Macdonald.
9. W. Anniversary Day (College opened in 1863). Final Matriculation and Supplementary Examinations.
Dec. 6. Tu. Meeting of Senate, 1 P. M.
23. Fr. Christmas Vacation begins.
25. Su. Christmas Day.
1871.

Jan. 4.. W. College re-opens.
10. Tu. Meeting of Senate, 1 P. M.
16. Mo. College Established, 1823.
27. Fr. Meeting of Board of Governors.

Feb. 7. Tu. Meeting of Senate, 1 P. M.
22. W. Ash Wednesday. Holiday.

March 7. Tu. Meeting of Senate, 1 P. M.
16. Th. Essays for the Sir Wm. Young Prize, and Grant Prize to be given in.
April 4. Tu. Meeting of Senate, 1 P. M.
6. Th. Lectures close.
7. Fr. Good Friday. Holiday.
10. Mo. Easter Monday.
12. W. Examinations in Latin and in Roman History.
13. Th. Examinations in Greek.
14. Fr. Examinations in Mathematics.
17. Mo. " Natural Philosophy and Rhetoric.
18. Tn. " Chemistry.
W. " Logic, Metaphysics, History.
20. Th. Examinations in Ethics.
21. Fr. Meeting of Board of Governors. Examinations in French and German.
24. Mo. Meeting of Senate, 10 A. M.
-25. Tu. Results of Examinations declared.
26. W. Meeting of Convocation at 11 o'clock, A. M. Winter Session ends.
May 1. Mo. Meeting of Senate. Summer Session opens.
2. Tu. Lectures begin in Faculty of Arts.
23. Tu. Foundation Stone of College Building laid in 1820.
24. W. Queen's Birthday. Holiday.

Tune 6. Tu. Meeting of Senate, 1 P. M.
20. Tu. Accession of Queen Victoria.
21. W. Halifax settled, 1749. Holiday.
23. Fr. Meeting of Board of Governors. Lectures close in Faculty of Arts.
26. Mo. Examinations in Arts.
27. Tu. Examinations continued.
28. W. Summer Session of Arts Faculty ends.

July 1. Sa Dominion Day. Holiday.

## BOARD OF GOVERENORES.

Hon. Sir William Young, Knight, Chief Justice of Nova Scotia, Chairman.

Hon. Charles Tupper, C. B., M. P., President of Privy Council.

Hon. J. W. Ritchie, Senator.
Hon. S. L. Shannon.
Hon. Joseph Howe, M. P., Home Secretary.
Rev. George M. Grant, M. A.
James F. Avery, M. D.
Charles Robson, Esq.
Alexander Forrest, M. D.
George Thomson, Esq., Secretary and Treasurer.

## SENATE OE THE UNIVEIESITY.

Very Rev. James Ross, D. D., Principal.
Rev. William Lyall, LL. D.
Charles Macdonald, M. A., Secretary of Senate.
John Johnson, M. A.
George Lawson, Ph. D., LL. D.
James DeMill, M. A.

## FACULTY 0F ARTS.

Very Rev. Principal Ross, D. D.,
Rev. Williay Lyall, LL. D., Professor of Psychology and Metaphysics.

Charles Macdonald, M. A., Professor of Mathematics.

John Johnson, M. A., Professor of Classics.

George Lawson, Ph. D., LL. D., Professor of Chemistry and Mineralogy.
James DeMill, M. A., Professor of History and Rhetoric.

Tutor in Modern Languages.
James Liechti, Esq.

## FACULTY OF MEDICINE.

Very Rev. James Ross, D. D., Principal (ex-officio), Matriculation Examiner.

William J. Almon, M. D., President.
Alexander P. Reid, M. D., Dean.
William J. Almon, M. D., and
Alexander G. Hattie, M. D., Lecturers on Obstetrics.
Prof. George Lawson, Ph. D., LL. D., Lecturer on Chemistry.
Alexander P. Reid, M. D., L. R. C. S., Edin., Lecturer on Institutes of Medicine.
Edward Farrell, M. D., Lecturer on Anatomy.
Alfred H. Woodill, M. D., Lecturer on Materia Medica.
Thomas Trenaman, M. D., and J. F. Black, M. D., Demonstrators of Anatomy.
Thomas R. Aimon, M. D., Prosector to Chair of Anatomy.

## fuculty of fatts.

## § 1.-SESSIONS.

In each Academic Year there are two Sessions :-the first, a Winter Session, and the second a Summer Session.

The Winter Session for 1870-71 will commence on Wednesday, October 26th, 1870, and end on Wednesday, April 26th, 1871.

The Summer Session will commence on Monday, May 1st, 1871, and end on June 28th, 1871.

## § II.-ADMISSION OF STUDENTS.

Applicants for admission will present themselves at the College on the opening day of the Winter Session, at 11 A. M.

Students may enter, either
1st, as Undergraduates, with the intention of applying for the Degree of B. A. at the end of the course; or

2nd, as General Students.
Students entering as Undergraduates of the First Year are required to pass the Matriculation Examination at the opening of the Winter Session, and to take the classes prescribed for the four years' course.

Students may also enter as Undergraduates of the Second Year, and take the three years' course by complying with the conditions specified under § IV.

General Students are not required to pass any preliminary examination, and may attend any classes they choose.

No person can be admitted as an Undergraduate after ten days from the opening of the Session, without the special permission of the Senate. General Students will be admitted at any time during the Session.

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

## § III.-MATRICULATION EXAMINATIONS

FOR THE FIRST YEAR.
The subjects of examination for entrance into the First Year, are :-

## 1. In Classics.

Latin Grammar, Greek Grammar, one easy Latin, and one easy Greek Author.
The following Authors are recommended:

## Latin

Cæsar, one book; Virgil, one book ; Cicero, two Orations; Horace, one book of Odes.
Greek.
Xenophon, one book; Homer, one book; Lucian's Select Dialogues ; New Testament, one Gospel.

## H. In Mathematies.

Arithmetic; Euclid's Elements, Book I.; Algebra to the end of Division.

## III. In Euglish.

Grammar; History; Geography; Composition.
FOR THE SECOND YEAR.

In order to enter as an Undergraduate of the Second Year, a Student must pass an examination,-

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

## § IV-COURSE OF STUDY.

The Undergraduate course extends over, either

1. Four Winter Sessions, or
2. The Winter and Summer Sessions of two Academic years, and an additional Winter Session.

In order to enter upon the latter course, Students must be able to pass the Entrance Examination of the second year, and must take the classes prescribed by the Senate in the Summer Session.
I. WINTER SESSION.

FIRST YEAR.
Classics, Mathematics, Rhetoric.

## SECOND YEAR.

Classics, Mathematics, Chemistry, Logic and Psychology.

## THIRD YEAR.

Classics, Metaphysics, Modern Languages, Natural Philosophy, Chemistry. Mathematics and Practical Chemistry optional.

## FOURTH YEAR.

Ethics and Political Economy, History, Modern Languages, Natural Philosophy (Experimental Physics), and either Classics or Mathematics.

In Modern Languages, Undergraduates may select either French or German as part of their course, but they must take the same language in both years.

## II. SUMMER SESSION.

Classes will be opened for instruction in the following subjects:

> Classics.
> Astronomy.
> Applied Logic.
> Optics.
> Botany.
> History of Modern Literature. Modern Languages.

## § V.-FEES.

The Fee to each Professor, whose class or classes a Student enters, is six dollars for the Winter Session, and four dollars for the Summer Session, or eight dollars for both. Any Undergraduate who has paid fees twice, either to the Professor of Classics or to the Professor of Mathematics, may attend the classes of such Professor during the remainder of his Undergraduate course without paying an additional fee.

General Students pay a fee for every class they attend.
Experimental Chemistry is an optional class, the fee for which is six dollars. Students taking this class are required to provide their own apparatus.

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 required at the beginning of each Session to pay a 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, as no Student is aliowed to enter a Class without them.

The fees of Undergraduates who take the complete course in this University are as follows:-

Classes of First Year, Library and Matriculation Fees....... ...... $\$ 21$


## § VI-GRADUATION IN ARTS.

## DEGREE OF B. A.

The Degree of B. A. may be obtained by attending the prescribed courses of Lectures, extending over Four Winter Sessions, or three Winter and two Summer Sessions, and by passing the following examinations, the Candidate maintaining throughout the period a good moral character :-

## IN THE FOUR YEARS' COURSE.

1. Matriculation Examination at entrance.
2. Examination at the close of the first session, in Classics, Mathematics, Logic and Psychology, and Chemistry.
3. Examination at the close of the second session in Classics, Mathematics, Rhetoric, and Chemistry.
4. Examination at the close of the third session, in Classics, Natural Philosophy, Modern Languages, Metaphysics and Chemistry.
5. Final Examination for Degree, at the Close of the fourth session or subsequently, in Modern Languages, Ethics, Political Economy, History, Natural Philosophy, and either Classics or Mathematics, at the option of the Candidate.

IN THE THREE YEARS' COURSE.
The Examinations specified above, except No. 2, and the Examinations at the close of each Summer Session in the subjects of the Session.

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

The Fee for Diploma is five dollars, payable before the commencement of the Final Examinations.

## DEGREE OF M. A.

Bachelors 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 on a literary, scientific, or professional subject.

Fee for Diploma, twenty dollars, except in case of those who entered as Undergraduates prior to 1869, who pay five dollars.

## § VII-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 Examination, he will be allowed a Supplementary Examination on the first

Friday of the following Winter Session, on giving notice to the Secretary of the Senate; but failure in more than two subjects at the Sessional Examination will involve the loss of the year. N. B.-In the application of this rule, Classics and Mathematics will each be reckoned as two subjects.
3. In all cases where a Student presents himself for Supplementary Examination, except on the day mentioned in Rule 2 nd , he will be required to pay a fine of two dollars.
4. Students are forbidden to bring any books or manuscripts, into the Examination Hall, unless by the direction of the Examiner, or to give or receive assistance at the Examinations. If a Student violate this rule, he will lose his Sessional Examination, and it shall be at the discretion of the Senate whether he be allowed a Supplementary Examination.
5. Students who pass the Examination in the several subjects of their respective years, are arranged in three classes, according to the merit of their answers in these subjects.
6. A position in the First or Second Class will be considered honorable.

## § VIII-SCHOLARSHIPS.

## 1. Halifax Schools.

A scholarship entitling to free attendance on all the classes of the Undergraduate course, as long as the holder of it obtains a Certificate of Merit at the Sessional Examinations, is offered by the Professors for competition this year to the Pupils from the Halifax Schools; the competition to take place at the Matriculation Examination.

A Pupil competing for this scholarship must have attended the school from which he comes for a period of not less than one year immediately previous to the competition, and must present a certificate of attendance from the Principal of the School.
2. Open Scholarship.

A scholarship of equal value, and to be held under the same conditions, will be offered annually for competition to all Undergraduates entering the first year.

No Student can hold more than one scholarship during the Session.

## § IX.-PRIZES AND CERTIEICATES OF MERIT.

## The Grant Prize.

A Prize of $\$ 20$ is offered by the Rev. G. M. Grant, M. A., for the best Essay on "The Literature of the Nineteenth Century."

Competition is open to all Students of the years 1869-70 and 1870-71.

The Essays are to be sent in not later than 16th March, 1870, each signed with a motto, and accompanied by a sealed envelope, containing the name of the writer; and with the motto upon it.

## The Sir Willian Young Prizes.

The following Prizes are offered by the Hon. Sir William Young, Knt., Chief Justice of Nova Scotia:-

1. A Prize of $\$ 20$ for the best Essay on "The Function of Money."

The Essay to be given in to the Principal, with an accompanying sealed letter containing the name of the competitor, (each bearing a motto) not later than 16th March, 1871.
Open for competition to all Students iu actual attendance during the session in the Faculty of Arts.
2. An annual Prize of $\$ 20$ in Elocution, open for competition to all Students of the first and second years. This prize cannot be held twice by the same Student.

## North British Society's Bursary.

A Bursary, of the annual value of $\$ 60$, has been founded in connexion with Dalhousie College, by the North British Society of Halifax, to be competed for at the Sessional Examinations of the Second Year's course, and held during the Third and Fourth Years' of the Undergraduate's course. Candidates must be Undergraduates who have completed two years of the Curriculum, and must be eligible at the proper age to be Members of the North British Society. The next competition will take place in April, 1872, at the Sessional Examinations.

## CERTIFICATES OF MERIT.

Certificates of Merit of the First and Second Rank will be given to the Students who have obtained a first or second class standing in the aggregate of the branches of study proper to their year. N.B.-In computing points for these Certificates, French, German, and Experimental Physics will each count half as much as any other subject.

## § X.-ATTENDANCE AND CONDUCT:

1. All Undergraduates and General Students attending more classes than one, are required to provide themselves with caps and gowns, and wear them in going to and from the College. Gowns are to be worn at Lectures, and at all meetings of the University.
2. Attendance upon all the 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 exercises of the class, and will note as absent those who enter thereafter, unless satisfactory reasons be assigned.
5. Absence or tardiness without sufficient excuse, and 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 or tardiness 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 party 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 Certificate 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 service on Sunday, in one of the city churches or chapels.

## § XI.-THE IIBRARY.

Through the liberality of a number of the friends of the College, a library has been formed, which consists of a careful selection of the most useful works 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 11.00 volumes. All students are entitled to the use of the Library, on payment of the annual fee of one dollar.

## § XII-COURSE OF STUDIES. WINTER SESSION.

CLASSICS 1870-1Professor. . ......John Johnson, M. A.
OBDINARX COURSE, - FIRST YEAR.
Latin.-Cicero: First oration against Catiline.
Virgil, Anneid, Book VIII.
Greek.-Lucian : Timon.
Composition.-Principia Latina, Part IV.
Ancient History.-History of Rome, (Liddell's).
SECOND YEAR.
Latin.-Livy: Book I, chap. 1-21.
Horace: Odes, Book I.
Greek.-Herodotus: Book I, §§ 95-I30.
Homer: Book IX.
Composition.-Principia Latina, Part IV.
Initia Græeca, Part III.
Ancient History.-History of Rome, (Liddell's).
THIRD YEAR.
Latin.-Horace: Satires, Book I, 3, 4, 5, 6, 9 ,
Terence: Adelphi.
Greek.-Euripides: Medea.
Composition.-Principia Latina, Part V.
Arnold's Greek Composition.
FOURTH YEAR.
Latin.-Tacitus: Annals, Book I.
Juvenal : Satires, III, X.
Greek.-Demosthenes: Philippics, I, III.
Plato: Apologia Socratis.
Composirion,-Principia Latina, Part V.

## ADDITIONAL COURSE.

(For those competing for Prizes and Certificates of Merit.)

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FIRRT YEAR.
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Latin.-Cicero: Fourth Oration against Catiline.
Greek.-Demosthenes : First Olynthiac.
SECOND TEAR.
Latin.-Horace: Odes, Book IV.
Greek.-Herodotus: Book I, §§ 178-200.
THIRD YEAR.
Latin.-Horace: Epistles, Book I, Ars Poetica.
Virgil : Georgics, Book IV.
Greek.- Æschylus: Prometheus Vinctus.
Literature.-Roman Classical Literature, (Brown's), selected course. Theatre of the Greeks, (Donaldson's).

## FOURTH YEAR.

Latin.-Cicero: Tusculan Questions, Book I.
Greek.-Thucydides: Book II.
Composition.-Greek Prose.

Ancient History.-Merivale's History of the Romans, Vol. MII. Chaps. 29 to end, and Vol. IV.
Literature.-Greek Clässical Literature, (Brown's), selected course.
Philology.-Müller's Science of Language, Vol. I, Lectures II-VIII. Vol. II, Lectures IV-VII, (all inclusive). Clarke's Comparative Philology-

## MATHEMATICS

Professor........ Charles Macbonald, M. A.
FIRST YEAR.
Algebra.-Fractions, Equations of the First and Second Degrees, Proportion, Progressions.

Geometry.-First Book of Euclid, revised; Second, Third, Fourth Book, Definitions of the Fifth Book and the Sixth Book of Euclid, with deductions and applications.

Trigonometry.-Solution of Plane Triangles.

## second year.

Algebra.-Binomial Theorem, Permutations and Combinations, Theory of Logarithms, Compound Interest, Probabilities, Life Assurance, sc.

Geometry.-Eleventh Book of Euclid, 21 Propositions, Geometrical Deductions, Mensuration.

Trigonometry.-Analytical Plane, with application to Surveying and Navigation.

THIRD YEAR.
Spherical Trignometry with application to Astronomy; DeMoivre's Theorem with Angular Analysis.

Conic Sections algebraically treated; Differentiation.

## fourth year.

Conic Sections continued; Differential and Integral Calculus, with applition to Mechanics.

## BOOKS RECOMMENDED.

* Young's Elementary Course of Mathematics. Cassell's or Potts' ※uclid.

Todhunter's, Colenzo's, or Wood's Algebra.
Todhunter's, Colenso's, Snowball's, or Hymer's Trigonometry.
Puckle's or Todhunter's Conic Sections.
Hall's, or Hind's Differential and Integral Calculus.
Galbraith's and Haughton's Mechanics; Potter's Mechanics ; Galbraith and Haughton's, Webster's, or Miller's Hydrostatics.

The Books in Weale's Series on Trigonometry and Conic Sections. $\dagger$

## ETHICS AND POLITLCAL ECONOMY.

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

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. Wayland's Political Economy.

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## LOGEC, METAPHYSICS, AND ESTHETICS.

Professor........ Rev. Wm. Lyale, LL. D.
Logic and Psychology.-(Second Year.)-Texts Books: Sir Williame Hamilton's Lectures on Logic. Prof. Lyall's "Intellect, the Emotions, and the Moral Nature."

Metaphysics and Esthetics.-(Third Year.)-Text Books: Sir William Hamilton's Lecture's on Metaphysics. Lyall's Intellect, the Emotions and Moral Nature. Mansel's Metaphysics. Lewes' Biographical History of Philosophy. Cousin on The Beautiful. Alison's Essay on the Nature and Principles of Taste.

## CHEMISTRY.

Professor. . ..... George Lawson, Ph. D., LL. D.
Jenior Chemistry.-(Second Year.)-Text Books: Chambers's Chemistry by Macadam.

Senior Chemistry.-(Third Year.)-Text Book: Fownes's Chemistry, (or Gregory's).
Practical Chemistry.-(Third Year.)-Laboratory Books: Fresenius's' Qualitative and Quantitative Analysis.

## NATURAL PHLLOSOPHY.

## EXPERIMENTAL PHYSICS.

Professor........ Vert Rev. Princtpal Ross, D.D.
(Third Year.)-Text Book: Lardner's Handbook.
(Fourth Year.)-Text Book: Lardner's Handbook.

## MATHEMATICAL PHYSICS.

Professor........ Charles Macdonald, M. A.
(Third Year.)-Text Books: Galbraith's and Haughton's Mechanies. Parkinson's Elementary Mechanics. Galbraith and Haughton's Hydrostatics.

## HISTORY AND RHETORIC.

Professor........James DeMill, M. A.
Reetoric.-(First Year.)-Text Books: Whateley's Elements of Rhetoric. Campbell's Philosophy of Rhetoric. Latham's Handbook of the English Language. Angus's English Language. Porter's Elocution.
History. - (Fourth Year.)-Text Books: Gibbon's Decline and Fall of the Roman Empire. Hume's History of England. History of France. Hallam's Middle Ages. Sismondi's Italian Republics. Taylor's Manual of Modern History.

## BOOKS RECOMMENDED.

Guizot's History of Civilization ; Michelet's History of France ; Hallam's Constitutional History.

## MODERN LANGUAGES.

Tutor. . . . . . . James Liechti, Eisq.
French.-(Third Year.)-Pujol's Grammar, (first part)-A comedy of Scribe.

German.-(Third Year.)-Otto's Conversation Grammar.-Adler's. Reader.

French. - (Fourth Year.)-Pujol's Grammar, (second part)-A Comedy of Scribe, or Moliere.
German.-(Fourth Year.)-Otto's Conversation Grammar.-A Play of Schiller, or Goethe.

## SUMMER SESSION.

CLASSICS.
Professor $\qquad$ John Johnson, M. A.
Tatin.-Horace, Odes, Book IV.
Greek.-Homer, Iliad, Bool XVIII.

## MATHEMATICS

Professor-Charles Macdonald, M. A.
Astronony.-Teat Book:-Loomis's Astronomy.

## EXPERIMENTAL PHYSICS.

Professor........ Very Rev. Prikcipal Ross, D. D. Pneumatios.-Text Book:-Lardner's Handbook.

> LOGIC.

Professor. . ........ Rev. Wm. Lyale, LL. D.
Text Books:-Those used in the Winter Session.

## HISTORY OF MODERN LITERATURE.

Professor. ........ James DeMill, M. A.
Text Books:-Hallam's Introduction to the Literature of Europe. Sismondi's Literature of Southern Europe.

## BOTANY.

Professor. . ....... George Lawson, Ph. D., LL. D.,
Text Books :-Gray's "How Plants Grow." Balfour's Outlines. Field Book:-Gray's Manual of Botany of the Northern States.

## MODERN LANGUAGES.

Tutor. . . . . . James Liechti, Esq.
French and German,-Text Books: Those used in the Winter Session.

TIME TABLE-Winter Session, 1870-\%1.

| Hours. | First Year. | Second Year. | Third Year. | Fourth Year. |
| :---: | :---: | :---: | :---: | :---: |
| $9-10$. |  |  | French-Tues, Thurs. | Classics-Mon., Wed. <br> German-Fri. |
| 10-11. | $\begin{aligned} & \text { Rhetoric-_ } \\ & \text { Daily. } \end{aligned}$ | MathematicsDaily. | ClassicsDaily. | $\begin{gathered} \text { Ethics- } \\ \text { Daily. } \end{gathered}$ |
| 11-12. | MathematicsDaily. | ClassicsDaily. | MetaphysicsMon., Wed., Friday, | History Daily. |
| 12-1. | Classies- <br> Tu., Wed., Th., Fr. <br> Greek and Roman Hist.Monday. | Greek and Roman Hist.Monday. | Mathematical PhysicsMon., Wed., Fri. <br> Experimental PhysicsTuesday, Thursday. | Experimental Physics- <br> Tuesday, Thursday. |
| 1-2. |  |  | Mathematics- <br> Mon., Wed., Fri. | Mathematics Tuesday, Thursday. |
| $2-3$. |  | $\begin{gathered} \text { Chemistry- } \\ \text { Daily. } \end{gathered}$ | $\begin{gathered} \text { Chemistry- } \\ \text { Daily. } \end{gathered}$ |  |
| 3-4. |  | LogicDaily. | GermanTuesday. | FrenchMonday, Thursday. |

## 2exiex and Coxtificatts of atarit, 1870.

## UNIVERSITY PRIZES.

FOUTH YEAR.


SECOND YEAR.

| Classics. | William P. Archibald. |
| :---: | :---: |
| Mathemati | Ephraim Scott. |
| Psycholog | Willliam P. Archibald. |
| hem | Ephraim Scott. |

FIRST YEAR.
Classics
Charles Macdonald.
Mathematics. . . . . . . . . . . . Alex. H. McKay.
Rhetoric..................... . . Alex. H. McKay.

## CERTIFICATES OF GENERAL MERIT.

Of the First Class :-Fourth Year.-Hugh M. Scott, Walter M. Thorburn; Third Year.-James G. McGregor, Alex. G. Russell; Second Year. -William P. Archibald, Ephraim Scott; First Year. David F. Creelman, Charles Macdonald, Alex. H. McKay.
Of the Second Class:-Fourth Year.-Andrew W. Lindsay; Third Year.-Ernest S. Bayne; Second Year.-Hugh M. McKenzie, Arthur J. Trueman.

## NORTH BRITISE SOCIETY'S BURSARY.

The North British Society's Bursary, of the annual value of $\$ 60$, was assigned to Ephraim Scott.

## YOUNG PRIZES.

The Young Prize of $\$ 20$ for the best Essay on "The Relations of Capital and Labour," was assigned to Walter M. Thorburn.

The Young Prize of $\$ 20$ for Elocution, open for competition to all Students, was awarded to Duncan C. Fraser.

For the Essay second in merit, in competition for the Young Prize, Rev. G. M. Grant oftered a Prize of $\$ 10$, which was gained by Hugh M. Scott.

## Cexaminations, 1869-7c.

## SCHOLARSHIP EXAMINATIONS, OCTOBER, 1869.

The Scholarship offered for Competition to Students entering as Undergraduates, was gained by

Charles D. Macdonald.
Halifax Schools' Scholarships were awarded to
Bruce A. Lawson and Henry Macdonald.

## UNIVERSITY EXAMINATIONS.

The following Undergraduates have passed the University Examinations in their several years:-

SUPPLEMENTARY EXAMINATIONS, OCT., 1869.
Third Year-Walter M. Thorburn.
First Year-J. Johnston Parker.
SESSIONAL EXAMINATIONS, APRIL, 1870.
Final Examinations for Degree of B. A.-Andrew W. Lindsay, Hugh M. Scott, Walter M. Thorburn, John Wallace.
Third Year.-Ernest S. Bayne, Jas. G. McGregor, Alex, G. Russell.
Second Year.-Wm. P. Archibald, Wm. T. Bruce, Charles W. Bryden, James Carmichael, William Cruickshank, Duncan C. Fraser, Adam Gunn, John Hunter, Hugh McKenzie, Alex. W. Pollok, Ephraim Scott, Hector Stramberg, Arthur I. Trueman.
First Year.-David F. Creelman, John W. Forbes, Charles Harvey, Alfred Harvey, Bruce A. Lawson, John H. Logan, Charles D. Macdonald, Henry MacDonald, Alex. H. McKay, James A. McKeen.

## STANDING OF THE STUDENTS IN THE SEVERAL SUBJECTS. <br> CLASSICS.

Fourth Year.-(Examination for the Degree of B.A.)-Class 1.-Hugh M. Scott, Walter M. Thorburn.-Class 2.-Andrew W. Lindsay. Class 3.-John Wallace.
Third Year.-Class 1.-James G. McGregor. Class 2.-Ernest S. Bayne, Alex. G. Russell.
Second Year.-Class 1.-Wm. P. Archibald. Class 2.-Alexander W. Pollock, Ephraim Scott. Class 3.-Wm. T. Bruce, Charles W. Bryden, James Carmichael, Wm. Cruickshank, Duncan Fraser, Adam Gunn, John Hunter, Hugh McKenzie, William Ross, Hector Stramberg, Arthur I. Trueman.
First Year.-Class 1.-Charles D. Macdonald, Alex. H. McKay. Class 2.-David F. Creelman, Charles Harvey. Class 3.-William Cameron, John Forbes, Alfred Harvey, Bruce A. Lawson, John H. Logan, Henry Macdonald, James McKeen, Archibald Sinclair, James W. Whitman.

## MATHEMATICS.

Second Year.-Class 1.-Ephraim Scott, Arthur I. Trueman. Class 2.-John Hunter, Hugh McKenzie, Alex. W. Pollok. Class 3.William P. Archibald, William T. Bruce, Charles W. Bryden, James Carmichael, William Cruickshank, Duncan C. Fraser, Adam Gunn, William Ross, Hector Stramberg.

First Year.-Class 1.-David F. Creelman, Charles D. Macdonald, Alex. H. McKay. Class 2.-John W. Forbes, John H. Logan, James A. McKeen. Class 3.-John A. Boak, Charles Harvey, Alfred Harvey, Bruce A. Lawson, Henry Macdonald, Walter Mitchell, James W. Smith, John Wyllie, James W. Whitman.

## ETHICS AND POLITICAL ECONOMY.

Class 1.—Andrew W. Lindsay, Hugh M. Scott, Walter M. Thorburn, John Wallace.

## METAPHYSICS AND ESTHETICS.

Cluss 1.-Ernest S. Bayne, James G. McGregor, Alexander G. Russell.

## LOGIC AND PSYCHOLOGY

Class 1.-Wm. P. Archibald, Charles W. Bryden, Wm. Cruickshank, Hugh McKenzie, Ephraim Scott, Hector Stramberg, Arthur I. Trueman. Class 2.-James Carmichael, Duncan C. Fraser, Adam Gunn. Class 3.-William T. Bruce, John Hunter, J. Johnston Parker, Alex. W. Pollok, William Ross.

## CHEMISTRY.

Senior.-Class 1.-James G. MeGregor, Alex. G. Russell. Class 2.Ernest S. Bayne, George A. Abbinett.
Junior.-Class 1.-William P. Archibald, Ephraim Scott. Class 2.William T. Bruce, William Cruickshank, Duncan C. Fraser, Hugh McKenzie. Class 3.-Charles W. Bryden, James Carmichael, Adam Gunn, John Hunter, J. Johnston Parker, Alex. W. Pollok, Hector Stramberg, Arthur I. Trueman.

## NATURAL PHILOSOPHY.

Fourth Year.-(Experimental Physics.)-Class 1.-Andrew W. Lindsay, Hugh M. Scott. Class 2.-Walter M. Thorburn. Class 3.-John Wallace.
Third Year.-Mathematical and Experimental Physics.)-Class 1.-James G. McGregor. Class 2.-Alex. G. Russell. Class 3.-Ernest S. Bayne.

## HISTORY.

Class 1.-Hugh M. Scott, Walter M. Thorburn. Class 3.-Andrew W. Lindsay, John Wallace.

## RHETORIC.

Class 1.-David F. Creelman, Charles D. Macdonald, Alex. H. McKay. Class 2.-Charles Harvey, James A. McKeen. Class 3.-John A. Boak, John W. Forbes, Alfred Harvey, Bruce A. Lawson, John H. Logan, Henry Macdonald, Archibald Sinclair, James W. Smith.

## FRENCH.

Fourth Year.-Ciass 1.-Andrew W. Lindsay, Hugh M. Scott. Class 2.-Walter M. Thorburn, John Wallace.

Third Year.-Cuas 1.-Ernest S. Bayne, James G. McGregor, Alex. G. Russell.

## GERMAN.

Fourth Year.-Class 1.-Andrew W. Lindsay, Hugh M. Scott.
Third Year.-Class 1.-E. S. Bayne, J. G. McGregor, A. G. Russell.

## Graduates and *udergraduate of the *ututersity, and braceal Students in drts.



UNDERGRADUATES, 1869-70.

## FOURTH YEAR.

Lindsay, Andrew W

THIRD YEAR.
 FIRST YEAR.

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## GENERAL STUDENTS.

| NAME, |
| :--- |
| Abbinett, George |
| Almon, Andrew |
| Boyd, John |
| Bowles, Perry |
| Cameron, Angus |
| Cook, John |
| Doull, Wm. M. |
| Doull, Walter S. |
| Duff, Kenneth |
| Jordan, Lewis |
| McGillivray, John |
| Murray, George P. |
| Murray, Thomas |
| Richards, John |
| Ritchie, John L. |
| Whitman, Jas. W. |
| Gordon, |
| McMasters, |
| McKinnon, |
| Ros, |
| Collins, Joseph |
| Rennels, Claude |

## furulty of detrditime.

The Principal, (ex officio.)<br>President................... . Dr. W. J. Almon.<br>Dean of the Faculty ....... Dr. Reid.<br>Lecturers................. . Dr. George Lawson. Dr. W. J. Almon.<br>Dr. A. G. Hattie.<br>Dr. A. P. Reid.<br>Dr. Edw. Farrele.<br>Dr. A. H. Woodile.<br>Demonstrators.......... $\left\{\begin{array}{l}\text { Dr. T. Trenaman, and }\end{array}\right.$<br>Prosector . . . . . . . . . . . . . . . Dr. T. B. Almon.

## COURSE OF INSTRUCTION IN THE FACUXTY OF MEDICINE.

The Lectures will be delivered in the University Buildings, Grand Parade, of the time of which due notice will be given.

## I.-CHEMISTRY.

Lecturer. . . . Prof. George Lawson, Ph. D., LL,D.
Lectures daily from 2 to 3 , p.m., illustrated by diagrams, tables, apparatus, preparations, and demonstrations on the black board. Experiments daily.
Class Book:-Fownes Manual.

## II.-INSTITUTES OF MEDICINE.

Lecturer....Alex. P. Reid, M.D., L.R.C.S., Edin., L.C.P. \& S., Ca., Surgeon to City Dispensary.
Lectures daily from 3 p.m., to 4 p.m., illustrated by microscopical preparations, plates and vivisections.
Class Books-Carpenter, Dalton, Todd \& Bowman, Kirke \& Paget.

The Lectures on Institutes of Medicine will embrace Histology, Physiology and General Pathology, the first two divisions of the subject receiving most attention. Towards the close of the course a general outline of Pathology will be given.
III-ANATOMY.

Lecturer.... Edw. Farrell, M.D., Surgeon to City Dispensary, Lectures daily from 10 to 11 a. m., illustrated by the fresh subject, dried preparations, including skeletons, life-size plates, \&c.
Class Books.-Gray, Wilson, Sharpey \& Quain.
Every facility will be offered to students to become practically acquainted with Anatomy, under the Lecturer (Dr. Farrell), and the Demonstrators (Drs. Trenaman and Black).

Practical Anatomy.
Demonstrators....T. Trenaman, M.D., and J. F. Blace, M.D.
Rooms open from 4 to 6 , and 8 to 10 , p.m.
Fee for Practical Anatomy, \$4.
Thos. R. Almon, M.D., Prosector to the Chair of Anatomy.
Dr. Avery has presented to the Medical. School a large and valuable series of Anatomical Plates.

## IV.-MATERIA MEDICA.

Lecturer.....Alfred H. Woodile, M.D., Physician to City Dispensary Lectures daily from 11 a.m., to 12 noon, illustrated by specimens of the various pharmacological substances, microscopical objects, plates, \&c.
Class Books.-Pereira by Farre, Stille, Dispensatories.

> V.-OBSTETRICS.

Lecturers....Wm. J. Almon, M.D., Consulting Physician to City Hospital and Dispensary, and Physician to City Alms House, and Alex. G. Hattie, M.D., Physician to City Hospital and Dispensary.
Lectures daily by one of the Lecturers, from 9 to $\mathbf{1 0}$, a.m. Class Books.-Bedford, Tyler Smith, Cazeaux, Churchill.
The Lectures will be illustrated by plates, mannikins, \&c.; and senior students will have opportunities of becoming practically acquainted with the modes of treatment, \&c., under direction of the Medical Officers connected with the Alms House and Dispensary, where a large number of cases occur.
VI--BOTANY.

A short course of Lectures on Botany is usually given during the summer by Professor Lawson, in connection with which there are one or two excursions for field demonstration.

## PUBLIC HOSPITALS, \&c.

The Provinctal and City Hospital is visited daily at 12 M., by the Medical Officers, and may be attended by Students without payment of any fee. The City Alms House, containing from 200 to 400 patients, half of whom are usually in the Hospital Wards, will likewise be available to Students. The best opportunities are here presented for clinical instruction, midwifery practice, and treatment of diseases; likewise for the observation of pathological appearances, which will be demonstrated by post mortem examinations.

Clinical Lectures will be delivered at the Provincial and City Hospital and City Dispensary. Instructions will be given at the bedside, including physical diagnosis, and many opportunities afforded to Students to become familiar with the operations of minor surgery.

The Halifax Dispensary is carried on after the model of the DeMilt Dispensary, New York, being divided into three Departments, viz.: (1.) Surgical, including the Eye and Ear; (2.) Medical, including the Heart and Lungs; and (3.) Diseases of Women and Children. At this Iustitution, from 30 to 50 cases are treated daily. Here the Student can have the advantage of becoming practically acquainted with Pharmacy and Midwifery under the Officers of the Institution.

Certificates of attendance on the Hospitals and Dispensary will be given to those Students who attend regularly.

## EXTRACTS FROM THE REGULATIONS.

1. Students desirous of attending the Lectures shall, at the commencement of each Session, enrol their names, age and residence, in the Register kept by the Dean, and each Student shall procure from him a ticket, for which he shall pay a fee of one dollar.
2. The Register shall be closed within one mouth after the commencement of each Session.
3. Each Lecturer shall deliver five lectures during the week, and each lecture shall be of one hour's duration.
4. Each Lecturer shall examine his class weekly on the subjects treated of in the preceding lectures, and such examination shall be considered a lecture.
5. A roll of names of the Students attending each class shall be called from time to time, in order that certificates of attendance may be given at the end of the Course.
6. The Matriculation examination is similar to that required by McGill University, Montreal, adopted under the Medical Act for Ontario, and recommended by the "Council of Medical Education and Registration" of Great Britain. Students desirous of passing it may present themselves to the Principal of
the College at any time during the Session. Students, not matriculating, may attend the classes without passing this ex amination.

Any additional information may be obtained on application to Dr. Reid, the Dean of the Faculty.
N.B.-Important changes are contemplated in the Medical Faculty. These will be embodied in the Faculty's Annual Announcement, which will be issued in course of a few weeks.

## MEDICAL STUDENTS, 1870.

| Sinclair, George L <br> Flinn, W P | do |
| :---: | :---: |
| Chisholm, J. J | Antigonish. |
| Almon. A. | Halifax. |
| Barnaby, Gideon | Cornwallis. |
| Rousselle, A. Bruce | Halifax. |
| Ritchie, John L | do. |
| Duff, William M | Lunenburg. |
| Witt, Geo. E. | Bridgetown, Annapolis. |
| Cameron, W. M | Pietou. |
| Bethune, John | Loch Lomond, C. B. |
| McDonald, Hugh | Mabou, do. |
| Hiltz, Charles W | Bridgetown, Annapolis. |
| McRae, William. | Richmond, C. B. |
| Hunt, Lewis. | Dartmouth. N. S. |
| Robertson, Hugh A | Pietou. |
| Black, H. H. | Halifax. |
| Power, G | do. |
| Eaton, F. E | Granville, Annapolis. |
| Beers, Alfred. | P. E. Island. |
| Cogswell, A. | Halifax. |
| MacMillan, Finlay |  |
| Ross, J. G | Sydney, C. |
| McLennan, A | Broad Cove, do. |
| Vaughan, Tho | Perth, Ontario. |

## DALHOUSIE COLLEGE AND UNIVERSITY,

## HALIFAX.

SESSIONAL EXAMINATIONS, 1870.<br>Thursday, April 14 th .<br>GREEK:-HERODOTUS, Book I, Secs. 2, 3-65,-HOMER, Book VI.<br>SECOND YEAR.<br>Professor Johnson, M. A. ................... Examiner.

## 1. Translate:-










 ó $\mu \varepsilon ̀ v \pi a ́ v \tau \varepsilon \varsigma ~ i ̣ ̆ ~ \kappa i ́ o v ~ \eta ँ \mu a \tau \iota ~ " A i ̈ \delta o s ~ \varepsilon i \sigma \sigma \omega " ~$



 $\grave{a} \psi \dot{\partial} \gamma \varepsilon \tau \grave{\eta} \nu \dot{a} \pi \varepsilon \in \lambda v \sigma \varepsilon, \lambda a \beta \bar{\omega} \nu \dot{a} \pi \varepsilon \rho \varepsilon i \sigma \dot{\sigma}$ ă $\pi o \iota v a$. $\pi a \tau \rho o ̀ s ~ \delta ' ~ ' \varepsilon v ~ \mu \varepsilon \gamma a ̀ p o \iota \sigma \iota ~ \beta a ́ \lambda ' ~ " A \rho \tau \varepsilon \mu \iota s ~ i o \chi \varepsilon ́ a \iota \rho a . ~$










What grammatical difficulty is there in this passage? What changes are proposed? Translate it as it stands, and according to the proposed reading, and shew the differences clearly.
3. Translate into Latin фàs ঠeré $\sigma a l$ tò $\chi \rho \eta \sigma \theta \grave{v} v$ and give the rule for the difference of the Greek from the Latin idiom.
4. What relation is expressed by the clause őк $\omega$ S $\mu \bar{\eta} \tau \varepsilon \dot{\alpha} \lambda \iota \sigma \theta \varepsilon i \check{\varepsilon} \kappa . \tau . \lambda$. ? Give the rule for the moods used in such clauses, and the corresponding rule in Latin.
 Tense in these sentences.
6. Parse these verbal forms, giving their principal parts :- $\dot{\alpha} \lambda \iota \sigma \theta \varepsilon \tau \varepsilon v$.

7. Decline à $\sigma \tau \varepsilon o s, ~ \dot{\varepsilon} \omega v \tau o \tilde{v},-\ddot{\eta} \mu a \tau \iota$, òt $\varepsilon \sigma \sigma \iota \nu, \pi \dot{\prime} \mu \iota$.
8. Write the Attic forms of $\mu \varepsilon \tau \varepsilon \xi \varepsilon \tau \varepsilon \rho \circ \iota, \dot{a} \rho \gamma \varepsilon \nu \nu \eta ̃ \varsigma, \kappa \tau \varepsilon a ́ \tau \varepsilon \sigma \sigma \iota \nu, \dot{\varepsilon} \sigma \sigma \dot{\imath}, \theta \varepsilon i \eta \varsigma$,
 à $\lambda \lambda a ́, ~ a ̈ \lambda \lambda a$.


Wordsakin to most of these are found in Latin ; give them, and explain the differences in form and meaning between them and the Greek.
10. Scan the first lines of passage (b), marking the quantity of each syllable, and accounting for it when necessary.
11. What cases follow verbs denoting the operation of the senses in Greek and in Latin? How is the difference explained? What is meant by the Cognate accusative? Give examples. What verbs are regularly followed by two Accusatives?
12. Write in Greek :--The Athenians came from the city to see the battle. Crœesus thought himself the happiest of men. If you do so, you will do great harm to yourself and your country. 0 that I might see the many friends I left behind me in Greece.
13. Give a short account of the Homeric controversy.

# DALHOUSIE COLLEGE AND UNIVERSITY, 

HALIFAX.<br>SESSIONAL EXAMINATIONS, 1870. Mendax, April 18, 9 A. M.<br>MATHEMATICS.-SECOND YEAR. QEOMETRY AND MENSURATRON.<br>\section*{Professor C. Macbonald, M.A........... Examiner.}

1. In right-anglea triangles, if a perpendicular be drawn from the right angle to the opposite side, the triangles on each side of it are similar to the whole and to one another.
2. If three straight lines be proportionals, the rectangle contained by the extremes is equal to the square of the mean; and conversely.
3. Similar rectilineal figures are to one another as the squares of their homologous sides : and, if three straight lines be proportionals, as the first is to the third, so is a rectilineal figure on the first to a similar one on the second.
4. Describe a rectilineal figure, similar to one, and equal to another, given rectilineal figure.
5. If three straight lines meet at a point, and a straight line stand at right angles to them at that point, these three straight lines are in the same plane.
6. Draw a perpendicular to a given plane from a given point above it.
7. If a solid angle be contained by three plane angles, any two of them are together greater than the third.
8. If two chords in a circle cut another, the rectangle of the segments of the one $=$ the retangle of the segments of the other. Prove this shortly by the Sixth Book of Euclid.
9. If lines be drawn from the angles of a triangle through the same point within it, and meet the opposite sides; the solids contained by the alternate segments of the sides are equal.
10. If one circle tonch another internally and chords of the greater be tangents to the less circle; the greatest of these is that which is perpendicular to the common diameter.
11. Shew how to find the area of a sector, and of a circle, from the infinitesimal division of the circumference.
12. If $a, b, c, d$, be the sides in order of a Quadrilateral inscribed in a circle, and $\mathbf{A}$ be the angle between $a$ and $d$, prove area of Quadrilateral $=$ $\frac{1}{2}(a d+b c) \sin A$.
13. The area of a triangular field is 1 acre; alse one side of the field : the perpendicular on it from the opposite corner : : $10: 11$; find the lengths of these in yards.
14. From the top of a ship's mast 60 feet above the level of the sea, the light of a lighthouse, 120 ft . above that level, begins to be discernible. Take the radius of the earth $=4,000$ miles, and find how far the ship is from the lighthouse.
15. How much of the surface of a sphere of a radius $r$ feet is visible to an eye at distance $l$ feet from its centre? Find the number of square feet under view, if $r=5$, and $l=20$.

# DALH0USIE COLLEGE AND UNIVERSITY, 

## HALIFAX.

SESSIONAL EXAMINATIONS, 1870.<br>Monday, April. 18, 3 P.M.<br>MATHEMATICS.-SECOND YEAR.<br>TRIGONONETRY AND ALGERRA.<br>Professor C. Macdonald, M.A......... Examiner.

1. If $a=$ length of are, $\mathrm{A}^{\circ}=$ number of Degrees in it, and $r$ radius of circle; find an equation connecting these quantities. Ex: find the radius of the circle of which an are of $70^{\circ}$ is 6 feet in length.
2. Find the six Trigonometrical functions of $60^{\circ}$ and $30^{\circ}$.
3. Prove $\sin \left(90^{\circ}+\mathbf{A}\right)=\cos \mathbf{A}, \cos \left(90^{\circ}+\mathbf{A}\right)=-\sin \mathrm{A}$, \&C.
4. Prove the two fundamental formulæ, (one fig:) viz., $\sin (A+B)=$ $\sin A \cos B+\cos A \sin B$, and $\cos (A+B)=\cos A \cos B-\sin A \sin B$.
5. If $\mathrm{A}, \mathrm{B}, \mathrm{C}$, are the angles of a triangle, prove

$$
\tan A+\tan B+\tan C=\tan A \tan B \tan C:
$$

and deduce hence that the sum of the products of the cotangents of these angles, two and two, $=1$.
6. If $a, b, c$, are the sides, and $\mathrm{A}, \mathrm{B}, \mathrm{C}$, the angles opposite them, prove $\cos \mathrm{A}=\frac{b^{2}+c^{2}-a^{2}}{2 b c}$, and write down important results to which this formula leads.
7. It R and $r$ be the radii of the circumscribed and inscribed circles of a triangle, prove
$r=\frac{1}{2}(a+b+c) \tan \frac{1}{2} \mathrm{~A} \tan \frac{1}{2} \mathrm{~B} \tan \frac{3}{2} \mathrm{C}$, and $R r=\frac{a b c}{2(a+b+c)}$.
8. Prove $a: b: c:: \sin \mathrm{A}: \sin \mathrm{B}: \sin \mathrm{C}$. Given $\mathrm{A}, \mathrm{B}$, and $a$; write the logarithmic equation for finding $B$.
9. If the sides $a, b, c$, are given; write the logarithmic equations for finding the angles. Explain also a common method of dealing with this case.
10. A and B are two places on the earth of known latitude and longitude. Describe the steps by which the compass-course from A to B may be approximately found ; make no allowance for compass deviation.
11. At O, a point within the triangle A B C, the sides subtend equal angles. Given $l, m, r$, the distances of the point from $\mathbf{A}, \mathbf{B}$, and C. ; find the sides and area.
12. Given a Table of Natural sines, cosines, \&c.: show how the Logarithmic Tables are calculated.
13. Prove $\log 1=0, \log 0=-\infty$, to any base. Also, to the base 10 , the logs of numbers that differ in the position of the Decimal point only (e. g., 589.3 and $\cdot 5893$ ), have the same mantissa.
14. Find a formula for determining in what time a sum of money will multiply itself $n$ times at $r$ per cent, payments half-yearly.
15. If an annuity that is to commence after $q$ years be commuted for one to commence at the present time, other conditions remaining the same, the annual payment $=\frac{\mathrm{A}}{(1+r)^{q}}$.
on life.).
16. In a lottery, all the tickets are blank but one, and a number of persons draw a ticket each. Shew that the last has as good a chance of the prize as the first.
17. In what scale is the number $40501=5365$ in the Denary scale of notation?

# DALHOUSIE COLLEGE AND UNIVERSITY, 

HALIFAX.

SESSIONAL EXAMINATIONS, 1870.

Thursday, April 21, 9 A. M. -1 P. M.

## LOGIC AND PSYCHOLOGY.

## Professor William Lyall, LL.D.............Examiner.

1. How may Logic be regarded as a branch of Psychology, and yet as a separate science?
2. Viewed as a separate science, how may it be characterized or defined?
3. What is the advantage of treating it as a branch of mental science, and prefacing it with a view of mind ?
4. In what different ways may mind be regarded, and what are the classifications of its phenomena according to the view adopted?
5. What important place do the Intuitions hold among the phenomena of mind ?
6. What is the part which the Laws of mind perform in the general operations of mind? What faculty do they correspond with in Sir W. Hamilton's classification of the faculties ?
7. On what grounds does Sir W. Hamilton hold a doctrine of immediate perception? How far may his doctrine be admitted? In what is it inconsistent?
8. What are the practical processes? What defective view has been taken of generalization?
9. Under what simple principle may the laws of association be regarded? What is memory? Into what may it be resolved? What is the peculiarity in the imaginative state or Faculty?
10. What is the process in the formation of concepts? What is the relation which these sustain to Logic?
11. What are judgments as distinguished from concepts ; and what reasoning-the syllogism-as distinguished from a judgment?
12. What is reasoning in the two quantities? Distinguish between reasoning proper, and simple analysis. In which quantity does the true process of reasoning express itself? Was no regard had to the intensive syllogism in the Aristotelian Logic?
13. What has Sir W. Hamilton effected in regard to reasoning ? Why can Mill's view of reasoning not be admitted ?
i4. Distinguish between the Inductive and Deductive processes; and show how all reasoning is essentially deductive. What is always the major premise in an inductive syllogism?
14. How are syllogisms divided? Give the laws of the several kinds, and show how the formal fallacies are a violation of one or other of these laws. In a hypothetical syllogism, what fallacy does the sublation of the antecedent correspond with in the categorical ?
15. Give some account of the figures and moods of the syllogism? What is the reduction of a syllogism? What are the uses of the 2nd and 3rd figures respectively, so that it may not be expedient to reduce a syllogism from these figures to the first?
16. Give a scheme of the material, or extra-logical, fallacies, with examples.
17. What is the doctrine of method? What does it propose as a part of pure Logic? Distinguish between Analysis and Synthesis. Show how they may be reciprocally convertible.
18. Show how Definition and Division are at once the Antithesis and complements of each other. Give the rules of each.
19. What is Probation, and what are the laws of this part of method?

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# DALHOUSIE COLLEGE AND UNIVERSITY, halifax. 

SESSIONAL EXAMINATIONS, 1870.<br>Wednesday, April 20, 9 A. M. -1 P.M.

## JUNIOR CHEMISTRY.

Professor George Lawson, Ph. D., LL.D....Examiner.

1. Give a list of the Non-Metallic Elements and Metals, thrown into groups and classified, so as to show their mutual relations with respect to chemical characters.
2. Explain concisely the Laws of Chemical Combination by weight and volume.
3. Describe Oxygen fully with respect to (1) its history; (2) its physical and chemical characters ; (3) Modes of Preparation, with reactions. What is Ozone?
4. Describe the process of manufacture of Oil of Vitriol (Sulphuric Acid), giving carefully the re-actions.
5. Describe Phosphoric Acid, with special reference to its union with bases.
6. Describe Chlorine fully and its compounds ; also, briefly, Bromine and Iodine.
7. Compare the Oxides of Chromium with those of Manganese and Iron, and indicate the basic or acid or neutral characters of each, and the probable cause of neutrality.
8. Describe the chemical character of the process of Fermentation, and its products; also Acetification. Show wherein the two differ.
9. What is a Compound Radical ? Give examples. What is a Derived Radical ?
10. Give the equivalent and atomic numbers (old and new) of $\mathrm{O}, \mathrm{H}$, C, S, P, K, Ca, Mn, Fe, Hg.

## DALHOUSIE COLLEGE AND UNIVERSITY,

$\qquad$
SESSIONAL EXAMINATIONS, 1870.
Wednesday, April 13.

LATIN.-THIRD YEAR.

TERENCE: HEAUTONTIMORUMENOS.-HORACE : ARS POETICA.VIRGIL: GEORGICS B. I.

Professor Johnson, M. A......... Examiner.

1. Translate:
a. Ch. At te adjuvare oportet adolescentuli

Causa. Sy. Facile equidem facere possum, si jubes :
Etenim quo pacto id fieri soleat calleo.
Ch. Tanto hercle melior. Sy. Non est mentiri meum.
Ch. Fac ergo. Sy. At heus tu, facitodum eadem haec memineris, Si quid hujus simile forte aliquando evenerit, Ut sunt humana, tuus ut faciat filius.
Ch. Non usus veniet, spero. Sy. Spero hercle ego quoque.
Neque eo nunc dico, quo quicquam illum senserim:
Sed si quid, ne quid. Quae sit ejus aetas vides, Et nae ego te, si usus veniat, magnifice, Chreme, Tractare possim. Ch. De istoc quum usus renerit, Videbimus quid opus sit : nunc istuc age.
Sy. Nunquam commodius nnquam herum audivi loqui,
Nec quum male facerem crederem mihi impunius
Licere. Quisnam a nobis egreditur foras?
b. Aut agitur res in scenis aut acta refertur.

Segnius irritant animos demissa per aurem, Quam quae sunt oculis subjecta fidelibus et quae Ipse sibi tradit spectator: non tamen intus Digna geri promes in scenam, multaque tolles
Ex oculis quae mox narret facundia praesens.
Ne pueros coram populo Medea trucidet, Aut humana palam coquat exta nefarius Atreus, Aut in avem Procne vertatur, Cadmus in anguem. Quodcunque ostendis mihi sic incredulus odi.
c. Ideirco certis dimensum partibus orbem

Per duodena regit mundi sol aureus astra.
Quinque tenent caelum zonae ; quarum una corusco
Semper sole rubens et torrida semper ab igni;
Quam circum extremae dextra laevaque trahuntur, Caerulea glacie concretae atque imbribus atris;
Has inter mediamque duae mortalibus aegris Munere concessae divom, et via secta per ambas, Obliquus qua se signorum verteret ordo.
2. Analyse carefully the sentences : Neque eo nunc....sed si quid, ne quid :-Nec quum.... licere.
3. Parse these words and account for mood and case : Soleat, mentiri, memineris, fucerem, geri, coquat, dimensum, verteret.-Melior, quid opus sit, mihi, populo.
4. Narrate briefly the myths alluded to in extract $b$.
5. Give a sketch of Terence's life.
6. Translate into Latin : But this indeed was decided as well on other nccasions frequently, as by Caius Fabricius in his second Consulship, and by our senate in the war with Pyrrhus. For when king Pyrrhus had made agyressive war upon the Roman people, a deserter from him came into the camp of Fabricius and promissed him, if he would propose a reward for him, that as he had come secretly, so he would return secretly into the camp of Fabricius and dispatch him with poison. Fabricius took care that this man be sent back in custody to Pyrrhus, and yet this conduct of his was applauded by the senate.

## (For those competing for high places.)

1. Translate into English: Apud alios nequaqum tantam molem pugnae inveni, plusque pavoris quam certaminis fuisse; quum inopinato in castra Romana Numidae Hispanique cum clephantis irrupissent, elephanti, per media castra vadentes stragem tabernaculorum ingenti sonitu ac fugam abrumpentium vincula jumentorum facerent; fraudem quoque super tumultum adjectam, immissis ab Hannibale, qui gnari Latinae linguae juberent consulum verbis, quoniam amissa castra essent, pro se quemque militum in proximos montes fugere: sed eam celeriter cognitam fraudem, oppressamque magna clade hostium ; elephantos igni e castris exactos.
2. Derive eccos, epol, istorsume, oppido, sodes, mensis, ausculto, sedulo, integer, contumino, nuper, conclave, nuptiae, gruis.
3. What are the oldest known specimens of Latin ? Into what periods may the Latin language be divided?
4. Give a scheme of the oldest Latin metre. When were the Hexamenter and the Lyric metres introduced?
5. On what occasion were regular stage performances introduced at Rome? How were plays classified? Give a short sketch of Roman comedy. Explain Acta primum tibiis imparibus ; deinde duabus dextris.
6. What studies were most congenial to a Roman? Who was the first Roman historian, and of what did he write? Who was the first great writer of prose Latin, and what were his subjects ?
7. Give a short sketch of Virgil's life. To whom was he indebted for the materials of his works? Why must his verses, and those of Terence, be scanned on different principles?

## DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX.

## SESSIONAL EXAMINATIONS, 1870.

GREEK:-ASChyLus: Prometheus Vinctus.--EURIPIDES: Bacchae. THIRD YEAR.
Professor Johnson, M.A......................... Examiner.

1. Translate :-
(a) ПР. боі̀ $\pi \rho \omega ̈ т о v, ~ ' โ o ̄ ̆, ~ \pi о \lambda u ́ \delta o v o \nu ~ \pi \lambda a ́ v \eta \nu ~ ф р а ́ \sigma \omega, ~$




 ai Форкídes vaíovoı ঠךvauaì кópaı


 $\pi \varepsilon ́ \lambda a \varsigma ~ \delta ' ~ a ̉ d \varepsilon \lambda \phi a \grave{~ \tau \omega ̃ \nu \delta \varepsilon ~ \tau \rho \varepsilon i ̆ ̧ ~ к а т a ́ \pi \tau \varepsilon \rho о \iota, ~ . ~}$




 $\sigma \tau \varepsilon i ́ \chi \omega \mu \varepsilon v$ ग̀ $\mu \varepsilon \grave{\zeta}, \mathrm{K} a ́ \delta \mu \varepsilon$, кả ${ }_{\xi} \alpha \iota \tau \omega ́ \mu \varepsilon \theta a$







 тоїs $\pi \rho a ́ \gamma \mu a \sigma \iota \nu$ dé• $\mu \tilde{\omega} \rho a \quad \gamma a ́ \rho \mu \omega ̃ \rho o s ̧ ~ \lambda \varepsilon \gamma \varepsilon \iota$.
 sentences into their principal and subordinate clauses, naming the latter. Translate the second sentence into Latin.
2. Account for the cases of $\mu \nu \eta \eta \mu \sigma \sigma \iota v, \phi \rho \varepsilon \nu \omega \tau \nu, \dot{a} \kappa \tau i \sigma \omega \nu, \tau \omega \nu \delta \varepsilon(a)-\lambda \sigma \gamma \omega \nu$ фрелäv, ả $\gamma p i ́ o v, \mu \circ \ell, \tau \bar{\omega}$.


3. Scan the first four lines of the first passage.
4. Write a short sketch of Euripides' life.
(The following Questions are to be answered only by those competing for high places.)

 $\vartheta \nu \eta \tau o i ̀ s ~ \mu \varepsilon \gamma i \sigma \tau \omega \nu$ סtádoхot $\mu \circ \chi \vartheta \eta \mu a ́ t \omega \nu$
 $i \pi \pi o v s, ~ a ̈ \gamma a \lambda \mu a ~ \tau \tilde{\eta} \bar{s} \dot{i} \pi \varepsilon \rho \pi \lambda o i ́ \tau o v ~ \chi \lambda \iota \delta \bar{\eta} \bar{\rho}$.
Translate this passage as it stands and according to a different punctuation.

$$
\begin{aligned}
& \text { ßротоі̀ трафŋ̃vaí фабıv ह̀v } \mu \eta \rho \text { द̆ } \Delta i o ̀ s,
\end{aligned}
$$

The sentence $\dot{\rho} \not \hat{\prime} \dot{\xi}$ as $\mu$ épos к.т. $\lambda$. has been explained in various ways. What reading has been proposed for $\tau \rho a \phi \tilde{\eta} v a t$ ? Euripides has a play on words in this passage. Give other instances.
 $\mu \eta \delta^{\prime} \dot{\varepsilon} \xi \circ \mu \dot{\rho} \rho \xi \varepsilon \iota \quad \mu \omega \rho i a \nu \tau \eta े \nu \sigma \eta े \nu \dot{\varepsilon} \mu \circ \iota ́ ;$
Translate these lines and explain clearly the Greek idiom.
4. Write out the principal forms of the conditional sentence and their equivalents in Latin. Explain the use of the different Moods that follow $\pi \rho i v$.

What words in Latin or English or in both are akin to $\delta \iota \delta a ́ \sigma \kappa \omega, ~ \kappa a \lambda u ́ s$,

 as far as possible?
(B) 1. Describe the successive changes in Greek Tragedy, and give the origin of the name.
2. Point out the differences between the Ancient and the Modern Drama in construction, and in the time and place of representation.

3: Describe briefly the apperrance and position of actors and chorus in a Greek theatre, and account for the differences.
4. What changes were introduced by Euripides into tragedy?
5. How have the words scene and person their present meaning? What stage machinery was used in Athens?
 ทังะрเко́v.
(C) 1. Translate the following sentences into Greek:-

They chose war in preference to peace because they have not tasted the evils of war. The judge himself shall be punished, if he trangress the laws of the state. I knew they would prevent the king from coming into the country. Not to do good to your friends, when you can, is wicied. I will not go till I have conquered you.

# DALHOUSIE COLLEGE AND UNIVERSITY, 

## HALIFAX.

SESSIONAL EXAMINATIONS, 1870 .
Monday, April 18, 9 A.m.

MATHEMATICAL PHYSICS.

Professor C. Macdonald, M.A......... Examiner.

1. Enunciate and prove the proposition called "The triangle of Forces."
2. Define a "moment," and write the conditions of equlibrium for a rigid body acted on by any forces in the same plane.
3. If the centre of gravity of a body be known and also that of a part of it, the centre of gravity of the remainder can be found. Ex: from a given square, the triangle formed by joining the middle points of the adjacent sides, is cut off: find the centre of gravity of the remainder.
4. Two forces, P and Q, that act at the extremities of a smooth lever resting on a fixed point, at angles $m^{\circ}$ and $n^{\circ}$, are in equilibrium: find the pressure on the point, and the force required to keep the lever from sliding.
5. The Screw is a compound mechanical power, and its mechanical

$$
\text { advantage }=\frac{\text { Circumference described by Power. }}{\text { Distance between the threads of the Screw. }}
$$

6. Prove the formula, $v^{2}=\mathrm{V}^{2} \pm 2 f s$ : and deduce beace the height to which a hody projected vertically upwards ascends.
7. The force, due to the rotation of the Earth on its axis, that tends to diminish the force of gravity, varies as the square of the cosine of the latitude. Prove this; and consider its magritude, as we proceed from the equator to the pole.
8. Assuming the usual notation, find the time of flight of a projectile over a horizontal plane through the point of projection, and the greatest height attained.
9. The velocity at any point in the path of a projectile is that due to the height of the directrix above the point.
10. Place a body between the Earth and the Moon so that it shall tend to fall towards neither: having given that the Moon's mass $=\frac{1}{8.0}$ th the Earth's, and the distance of the centres $=60$ times the Earth's radius.
11. Show how to find the specific gravity of a solid that sinks in water.
12. A right cone, loaded internally at the vertex, sinks in water $\frac{3}{4}$ its height, and in another fluid $\frac{9}{10}$ of the same. Prove the specific gravity of this fluid $=57+$.
13. Draw and explain the mechanism of a Lifting Pump.
14. From the effects of heat upon a portion of air, (1) when allowed to expand, and (2) when not allowed, determine the mechanical equivalent of heat.
15. A descending weight $P$ draws a weight $Q$ up a smootk inclined plane (height $=h$, and length $=l$ ), by a cord passing over: a pulley at the top of the plane: and the cord is cut when $Q$ has motion enough to carry it just to the top of the plane. Prove that at this time Q's distance from the bottom of the plane $=\frac{\mathrm{P}+\mathrm{Q}}{\mathrm{P}} \cdot \frac{h l}{h+l}$.
16. A circus-rider, riding in a ring, has to incline his body inwards at a certain angle with the vertical : but if he increase his speed by one-half he has to incline his body twice as much as before. Prove that the angle of his inclination in the first case is $=18^{\circ} 26^{\prime}$, it being given that the $\tan 18^{\circ} 26^{\prime}=\frac{1}{3}$.





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## DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX.

SESSIONAL EXAMINATIONS, 1870.
tuesday, April 19, 9 A.M. -1 P.M.

## EXPERIMENTAL PHYSICSa

Very Rev. Principal Ross, D.D........ Examiner .

1. What is the difference between Vapor and Gas ?
2. State the fundamental principle of Elastic Eluids known as "the Law of Mariotte." Outline the apparatus (Mariotte's tube) by which the accuracy of the law may be proved.
3. In an air pump whose receiver contains nine times as much air as its barrel, what proportion is expelled by the first stroke? What propor tion of the whole amount is expelled by five strakes?
4. How do. Barometers indicate approaching changes of weather? I£ fair weather has continued for several days, during which the meveury hascontinued to fall, what kind of weather may be expected.
5. What number of vibrations, per second, is necessary to produce the note A of the treble clef? What is the length of the vibration?
6. Mention the sources of Heat. How is animal heat produced ?
7. Describe the Conductometer, and explain its object.
8. Equal weights of Water and of Mercury at the same temperature, contain unequal quantities of heat. By what experiment can this fact be: proved?
9. What is the relation between the capacities of bodies for heat and their densities?
10. Explain the principle on which the multiplying glass is constructed.
11. How many distinct properties are contained in the solar rays? In what parts of the spectrum is each of these properties exhibited in greatest. intensity?
12. According to the undulatory theory of light, what is the length of: a red luminous wave? How many undulations in a second?
13. In how many ways may light be polarized? Describe the Polariscope.
14. What parts of a Magnet passess the greatest amount of magneticforce?
15. When a Magnet is broken, what magnetic phenomena do the fragments exhibit?
16. To what regular variations is the Magnetism of the Earth subject ?
17. State the prineiples on which lightning yods are constructed.
18. What are the principal differences between Erictional and Voltaie: Electricity ?
19. Explain the nature of Intensity and Quantity
20. Describe Daniel's constant battery.
21. What relation does the strength of the current bear to the electromotive force of the battery and the resistance of the circuit? (Ohm's laus.)
22. Explain the principle on which the Electric Telegraph is contr structed.

## DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1870.

THURSDAx, April 21.

METAPHYSICS AND ESTHETICS.

Professor William Lyall, LL.D...........Examiner.

1. In what circumstances may Ionic speculation be said to have originated? Give the leading names in the Ionic Philosophy.
2. Characterize the Eleatic School, and mention its principal speculatists. Distinguish it from the Italic School. Show how Ontology came to assume a psychological phase, and originated psychological enquiry.
3. What are the distinguishing features of the Socratic philosophy?
4. In what respects did Plato follow up the Socratic method? How did he unite all previous speculation, and in a certain sense anticipate the questions of future philosophy?
5. What is Aristotle's place in philosoply? In what respect is his system the rival of Plato's?
6. What intercalary character did the Epicurean and the Stoic systems sustain? How do they diverge from previous speculation? What influence did they exert in originating the new Academy ?
7. Give some account of the new Academy and of Neo-platonism.
8. What may be the "oppositions of Science, falsely so called," referred to by the Apostle? What correspond to these in modern philosophy? How may faith be vindicated without the abdication of reason?
9. What questions chiefly occupied the scholastic ages? Into what epochs may these ages be divided, according to the views entertained on the subject of Realism and Nominalism ?
10. State the relation of DesCartes to Philosophy. What are the Cartesian ideas, and what influence did they exert on subsequent speculation?

11 What was DesCartes' view on the subject of perception? State briefly how the question stands in regard to perception, and give a consecutive view of the question till the present time.
12. What form has the question of Realism and Nominalism assumed in modern thought ?
13. How has Ontology merged in Psychology?
14. What states are excluded from Aristotle's distribution of mind ? What is his distribution? What is the modern distribution corresponding with Aristotle's?
15. On what principles is it attempted to be vindicated that the feelings do not properly hold a place in any philosophic division of mind ?
16. How have the feelings been viewed by a certain order of thinkers, even after they were admitted into a classification of the mental States? What more philosophic view may be adopted, and on what principle may the Emotions be classified?
17. To which class does the Esthetic Emotion belong? State the different theories on the subject of the Beautiful and the Sublime. What seems to give Alison's theory the pre-eminence over the others? What classification may be given of the Fine Arts ?
18. Classify the Desires. What regulative principle may be recognized in the desires themselves, almost amounting to an Ethical principle, and involving a theory of virtue, or of the moral constitution?
19. What beyond this may be recognized in the Ethical judgment? What is Conscience?
20. What is pre-eminently the active Power, and what views have been advanced on the subject of our voluntary States?

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# DALHOUSIE COLLEGE AND UNIVERSITY, 

## HALIFAX.

# SESSIONAL EXAMINATIONS, 1870 . 

Thursday, April 21.

FRENCH. - THIRD YEAR.

## James Leichti, Esq......................... Examiner.

## Translate the following passages :

(A.) "Ménalque a une fois perdu au jeu tont l'argent qui est dans sa bourse; et, voulant continuer de jour, il entre dans son cabinet, ouvre une armoire, y prend sa cassette, en tire ce qu'il lui plaît, croit la remettre oū il l'a prise; il entend aboyer dans son armoire qu'il vient de fermer; étonné de ce prodige, il l'ouvre une seconde fois, et il éclate de rire d'y voir son chien qu'il a serré pour sa cassette."
"LaBruyēre."
(B). "Il faut que je vous conte une petite historiette qui est trēs vraie, et qui vous divertira. Le roi se mêle depuis peu de faire des vers; M. M. de Saint Aignan et Dangeau lui apprennent comment il faut s'y prendre."
"Mad. de Sévigne."
(1). Perdu and prise (A.) What is the agreement of these Past Ps. Why? Correct what is wrong in the agreement of P. P's. in the following sentences, and give rules: Plusieurs maisons ont éte brûlé. Les voy ageurs ont bien dormis; ils sont partis ce matin. Il s'est cassée la jambe. Nous nous sommes rencontrés, mais nous ne nous sommes pas parlés.
(2). Account for continuer and jouer (A). When is the Inf. required ?
(3). Explain the words $y$ and $e n$; mention the corresponding prepos., and translate: He spoke of the aecident. He spoke of it. He thought of the affair. He thought of it.
(4). Name the eight idiom, tenses formed with aller, venir, and devoir, and write an ex. on each form.
(5). Il faut que je vous conte (B). What mood is the verb in? Why? Give another construction of the same sentence. Write: My brother wants a Latin dictionary.
(6.) In the sentence: Le roi....depuis peu, complete the expression depuis peu What impers. form might be used for depus?
(7.) Show by exs. the difference between : Qui est-ce qui and qu'est-ce $q u i$; tout ce qui and tout ce que; voici, voilà and il $y$ a.
(8). Human life is composed of sorrows (ennuis) and joys. That fruit is eaten green (vert). How is the English passive rendered in French ?
(9). La femme de votre ami qui est si charitable, a adopté cet orphelin. What is wrong in this sentence? Why?
(1). What verb is used in speaking of temperature? Write exs. on $y$ avoir expressing time, distance, and number.
(11). State the difference between : dans and en; vers and envers; avant and devant. How is home to be expressed? Ex:
(12). Translate into French: My dear friend. In my last letter I had the pleasure of informing you of my intention to set out for (partir pour) Europe this month, in order to attend a course (suive un cours) at one of the Scottish Universities. As you have kindly promised me some letters of introduction, I would ask you the favor to send them to me immediately; tor the steamer leaves (partir fut.) on Tuesday next. Should you have anything to send to your friends, I shall be happy to take charge of it, (se charger de qch.) Friday next I shall write to you again, and remain (être), in the meantime, (en attendent) ete.

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# DALHOUSIE COLLEGE AND UNIVERSITY, 

## HALIFAX.

SESSIONAL EXAMINATYONS, 1870.<br>Friday, April. 22.<br>GERMAN.—THIRD YEAR.<br>James Leichti, Esq...........................Examiner.

Translate: (1) From Nonne's "Die leuchtenden Sterne."
"Es war eine kalte, dunkle (a) Mitternacht, da ging der alte Hermann (b) mit seinem Sohne äber die Heide. Den ganzen Tag über waren sie gewandert (c) und kehrten jetzt fröhlich uad wohlgemuth zu ihrem hemathlichem Dorfe zurück, (d). Graue Nachtwolken wareu am Himmel dicht über einander geschichtet, so dass kein einziger Strahl eines freundlichen Lichtes den einsamen Pfad erhellete."
(2). From Schiller's "Parabelu and Räthsel."

Ieh wohn' in einen steinern Haus,
Da lieg' ich verborgen und schlafe;
Doch ich trete herver, ich eile heraus,
Gefordert mit eiserner Waffe.
Erst bin ich unscheinbar und schwach und klein,
Mich kanu dein Athem bezwingen ;
Ein Regentropfen schon saugt mich ein,
Doch mir wachsen im Siege die Schwingen ;
Wenn die mächtrige Schwester sich zu mir gesellt,
Erwachs' ich zum furchtbar'n Gebieter der Welt."
(3). Explain the agreement of Adjects, preceding nouns (a). Write an ex. with an adj. as predicate. Decline in feur cases sing. and plur.: Der treue Freund (pl. w. a.) Eine alte Frau, (pl. d. a.) Neues Haus (pl. w. a.)
(4). Why is the Nom. placed atter the verb (b)? When is this inversion required? Write in German : To-day we shall write.
(5). Point out the place of Past. P's. conjug. with haben and sein (c). How do you account for the Inf. sollen in : Er hätte schreiben sollen. Ich würde es dir schon gesagt haben. Explain the position of P. P. gesagt.
(6). Account for the word zurück ( $d$ ). Two tenses require this form of the verb: which? In what do their P. P. differ from those of verbs like : loben, zerstören ( $r$.)?
(7). Aus; für ; an: während; mit; auf; wegen; ohne; unter: hinter. Illustrate by short exs. the cases these preps. govern. Point out those which take two cases, stating when they require the one, and when the other case.
(8). When is there are translated: Es sind, and when: Es gibt.? Write: There are many people (Leute), who cannot write. There are Ladies in the room.
(9). What difference is there between nein; nicht; kein. Give exs.
(10). What are the endings of diminutives in German? Of what gender are such nouns? How are they declined? Write the dims. of Bruder, Knabe, Tisch.
(11). Translate into German: I have seen the diamonds of the Queen. These two girls are sisters. He is in his house, (Dat). Those houses are very old. You are right, he is wrong. He is as young as I. Which is the coldest month? How old are you? I am twenty. In 1870. Halfpast two. On the 22nd of April. Half-an-hour. How many times have you been in Europe? I have never been there.

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## DALHOUSIE COLLEGE AND UNIVERSITY.

 HALIFAX.SESSIONAL EXAMINATIONS, 1870.<br>Wednesday, April 13.

FINAL EXAMINATION FOR DEGREE OF B.A.
LATIN.
TACITUS: AGRICOLA. - JUVENAL: SATIRES III., XIII.CICERO: TUSCULAN QUESTIONS, B. I.

Professor Johnson, M. A...... Examiner.
A-l. Translate:
a. His atque talibus invicem instincti, Boudicea, generis regii femina, duce (neque enim sexum in imperiis discernunt) sumpsere universi bellum : ac sparsos per castella milites consectati, expugnatis praesidiis, ipsam coloniam invasere ut sedem servitutis. Nee ullum in barbaris saevitiae genus omisit ira et victoria. Quod nisi Paulinus cognito provinciae motu propere subvenisset, amissa Britannia foret: quam unius praelii fortuna veteri patientiae restituit, (tenentibus arma plerisque quos conscientia defectionis et proprius ex legato timor agitabat), ni quamquam egregius cetera, arroganter in deditos, et ut suae quoque injuriae ultor, durius consuleret. Missus igitur Petronius Turpilianus tamquam exorabilior et delictis hostium novns eoque paenitentiae mitior, compositis prioribus, nihil ultra ansus, Trebilio Maximo provinciam tradidit.
b. Hic alta Sicyone, ast hic Amydone relicta, Hic Andro, ille Samo, hic Trallibus aut Alabandis, Esquilias dictumque petunt a vimine collem, Viscera magnarum domuum dominique futuri.
Igenium velox, audacia perdita, sermo Promtus et Isaeo torrentior. Ede quid illum Esse putes? quem vis hominen secum attulit ad nos: Grammaticus, rhetor, geometres, pictor, aliptes, Augur, schoenobates, medicus, magus : omnia novit.
Graeculus esuriens in caelum jusseris ibit.
Ad summum, non Maurus erat neque Sarmata nec Thrax
Qui sumsit pennas, mediis sed natus Athenis.
2. Analyse fully the sentence quam unius praelii . . . consuleret. What other readings are given? Translate accordingly.
3. Write short notes on Coloniam, Boudicea, Sicyone, Amydone, Andro, Trallibus, Isaeo, qui sumsit pennas.
4. Give the derivation of femina, provincia, Esquilias, rhetor, aliptes, augur, schoenobates, magus, esuriens.
5. What are the probable facts in Juvenal's life ?
6. Translate into Latin: An oath among the Romans was observed inviolately and with great sanctity. After the battle of Cannæ, Hannibal,
the general of the Corthaginians, sent to Rome ten men chosen from the Roman captives, and stipulated with them that if it seemed good to the Roman people an exchange of prisoners should be made. Before setting out they were bound by an oath to return to the Carthaginian camp, in case the Romans would not exchange prisoners. The ten captives come to Rome. They lay before the Senate the instructions of the Carthaginian commander. The Senate refused an exchange. The parents, kinsmen, and relatives of the prisoners embraced them, and entreated them not to return to the enemy. Then eight of them made answer that they were bound by their oaths, and set out forthwith to Hannibal.

## (For those competing for high places.)

B-l. Translate:
a. Tusc. Quest. Book I, Chap. 25, beginning " Quid? illa vis, quae tandem est quae investigat " to end of chapter.
b. Tusc. Qnest. Book I, Chap. 45, to "nihil ad mortuos pertinere."
2. Translate into English the following passage from a work not appointed to be read:-Quanto melius haee vulgus imperitorum! qui non membra solum hominis Deo tribuunt, sed usum etiam membrorum: dant enim arcum, sagittas, hastam, clypeum, fuscinam, fulmen : et si, actiones quae sint Deorum, non vident, nihil agentem tamen Deum non queunt cogitare. Ipsi, qui irridentur, Aegyptii, nullam belluam, nisi ob aliquam utilitatem quam ex ea caperent, consecraverunt. Velut ibes maximam vim serpentium conficiunt, cum sint aves excelsae, cruribus rigidis, corneo proceroque rostro : avertunt pestem ab Aegyptiis, cum volucres angues, ex vastitate Libyae vento Africo invectas, interficiunt, atque consumunt. Ex quo fit, ut illae nec morsu vivae noceant, nec odore mortuae. Possum de ichneumonum utilitate, de crocodilorum, de felium, dicere: sed nolo esse longus.











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## DALHOUSIE COLLEGE AND UNIVERSITY.

## HALIFAX.

## FINAL EXAMINATION FOR DEGREE OF B.A.

## Thursday, April 14 th, 1870.

GReek:--Demosthenes: Phillippics, I, II, III.--Plato: Crito, Phedo.
greek classical literature,--comparative philology.
Professor Johnson, M.A.............................. Examiner.

1. Translate:-









 sedívptal.










2. (a) Shew clearly the construction of each part of the sentence eipícet rá $\rho$, к. .т. . (b) Parse the verbs and nouns in it, giving the principal parts of the verbs and the rules for the cases.

## 3. Describe the events immediately preceding and following the Peace between Philip and the Athenians.

4. Mention the chief events in the life of Socrates, and the causes of the hostility of the A thenians towards him.
(The following questions are to be answered only by those competing

> for high places.)

1. Translate into English :-Pifedo, § 43.
(A) 2. Translate into Greek: He knows, therefore, both that he is plotting against you and that you are aware of it; and, supposing you to have common sense, he judges that you detest him as jou ought. Besides these important considerations, he is assured that though he became master of everything else, nothing can be safe for him while you are under a popular government: should any reverse ever befall him (and many may happen to a man) all who are now under constraint will come for refuge to you.
(B) 1. What are the chief arguments for supposing the Homeric poems to be the woris of one author.
2. There were two styles of lyric poetry in Greece, point out the differences between them, and name the principal authors in each,
3. Where was oratory first studied as an art? Why was Athens well fitted for the study and practice of it? Name the principal orators preceding and contemporary with Demosthenes?
4. What were the subjects of speculation in the sereral philosophic schools in early times? Name the principal philosophers of these schools and mention their cosmic theories.
5. Who were the Sophists? What was the leading principle of Socrate: ethical philosophy? Give Plato's statements and arguments about the soul and its future state.
(C) 1. What is meant by the term Phonetic Decay used by Max Müller? Give examples in Greek, Latin and English. What is the origin of the adverbial termination ment and of the forms of nouns in Frencb?
6. State Grimm's Law in a general form. What words in Greek and Latin are cognate to hart, sit, c'ild, that, who, deer, garden, goose.
7. What was the sign of the Abl. in Old Latin? What traces of it are found in Greek and classical Latin? . Where is the Locative found in Latin and Greek?
8. What forms were used in Indo-European languages to express the superlative degree? Give an example of each in Latin and Greek, and explain the form if necessary.
9. Explain the differences in the personal endings of the Present and Imperfect Indicative Active in Greek. How was the Imperfect formed in Greek, Latin and English? Account for the different forms of the Latin Perfect.
10. Show that these forms were originally indentical: $\varepsilon i \mu i$ sum, am— हiךv, sin- $\dot{a} \pi \dot{\omega} v$, absens-vexi, $\dot{\varepsilon} \xi a$.

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# DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX. 

SESSIONAL EXAMINATIONS, 1870.
Friday, April 22, 9 A.M.-1 P.M.

FINAL EXAMINATION FOR DEGREE OF B.A.

## ETHICS AND POLITICAL ECONOMY.

Very Rev. Principal Ross, D.D............. Examiner.

1. What special difficulties must be encountered in the study of Ethical and Political Science?
2. Illustrate the Educational Valiue of the study of these subjects.
3. Mention the several states and operations of mind which constitute a motive.
4. Is the connection between Motive and Volition anything more than the connection between cause and effect ?
5. What is the grand peculiarity of Will ?
6. Illustrate by examples the power of the Desire of Society.
7. Illustrate the importance of the Desire of Superiority to the progress of improvement.
8. What is "Smith's theory of Moral Sentiments?"
9. Enumerate the most important classes of Rights, with their corresponding duties.
10. Prove, by the principles of Natural Religion, that it is our duty to speak the truth.
11. Explain the difference between Science and Art, and their influence upon each other.
12. What is the grand peculiarity and excellence of the "British Constitution?"
13. Explain the difference between Politics and Political Economy ; and between Value and Utility.
14. Why cannot the division of labor be advantageously introduced, to the same extent, into Agriculture as into Manufactures ?
15. Is it possible to obtain as exact and invariable a Standard of Value, as of Weights and Measures ? Why ?
16. Why would not Precious Stones constitute as good a circulating medium as the Precious Metals?
17. To what evils is a mixed currency liable?
18. What parties gain by an inflated currency? Who lose?
19. Is it reasonable to suppose that Communism would call into exercise the same amount of industry as a system in which the laborer is remunerated in proportion to the amount of work which he performs? Assign reasons.
20. Enumerate the circumstances which affect the rate of wages.
21. Shew that it is good economy, on the part of the Inhabitants of a town, to provide themselves with efficient schools, and other means of mental improvement.
22. Prove that Vice is very expensive.

## DALHOUSIE COLLEGE AND UNIVERSITY,

## HALIFAX.

SESSIONAL EXAMINATIONS, 1870.<br>Wednusday, April 20, 9 A.M. -1 P.M.<br>SENIOR CHEMISTRY.

Professor George Lawson, Ph. D., LL.D...... Examiner.

1. Find how much $\mathrm{HO}, \mathrm{SO}_{3}$, is required to decompose 856 grains of KO, $\mathrm{NO}_{5}$, and how much Hydrated Nitric Acid is set free,
2. Give a concise statement of recent improvements in Chemical Nomenclature and Notation, with the reasons for adopting them.
3. Theory of Types,-a full explanation, with examples.
4. Theory of Compound Radicals,-explanation, evidence, and examples.
5. Theory of Spectrum Analysis.
6. Describe fully the process of Manufacture of Oxalic Acid,
7. Discuss the views held by Chemists at different times as to the Theoretical Constitution of Natural Alkaloids.
8. Describe fully the Proximate Constituents of Milk, their Chemical characters, and the changes of which they are capable; and point ont the relation of each to the proeess of animal nutrition.
9. Point out the more important chemical eharacters of (1) Saliva. (2) Gastric Juice. (3) Intestinal Secretion. (4) Bile. (5) Urea. What is the immediate chemical source of muscular energy?
10. Give an account of the double salts which Platinum forms with other bodies.
11. Point out the chemical differences between the following processes :-(1) Fermentation. (2) Eremacausis. (3) Putrefaction.
12. Give tests for the following poisons:-(1) Arsenious Acid. (2) Antimony Salts. (3) Copper do. (4) Lead do. (5) Hydrocyanic Acid. (6) Strychaia.
13. Explain the mode of ascertaining the amount of Arsenic present in the contents of a stomach, and give the calculations required, assuming the amount found to equal gr. 1.058 of Arsenious Acid.

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## DALHOUSIE COLLEGE AND UNIVERSTTY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1870.
Thursbax, April 21.

WINAL EXAMINATION FOR DEGREE OF B.A.

GRENCH.-FOURTH YEAR.
James Leichti, Esq.................................Examiner.
Traduisez: (1). Extrait te 1 H Horace par "Corneille" Acte II. Scene III.
(2). Extrait da Gil Blas par "Le Sage."
(3). La Syntaxe de la langue francaise admet-elle beaucoup de variafions dans l'arrangement des mots ? Quel ordre faut il établir dans toute: proposition? Le mēne ordre a-t-il lien en latin?
(4). Corrigez les phrases suivantes, et mentionnez en quei consistent: les fantes: Les facultés de l'esprit sont consme les plantes, qui, plus on lesenltive, plus elles donnent des fruits. Celui qui travaille a dompter ses passions, il ne peut manquer d'être homme, Si le bon sens n'est pas estimé ee qu'il vaut, est que personne ne ereit en manquer. En quei Fénélon eut beaucoup de difficulté ā surmonter, fut l'éducation du due de Bourgegne.
(5.) Quel est l'accord da verbe dans les phrases suivantes: My partnerand he will be on board the vessel before the merehant. His urbanity and suavity enchanted them. Wind, rain, lightning, thumeler, everything coneurred to ( $\bar{a}$ ) make the micht dreadful. Vanity, says Pascal, is so rooted (ancrée) in the human heart, that a scullion (marmiton), as poster even boasts (se vanter), and wishes to have his adm rers.
(6). L'amour n'est qu'un plaisir et l'honneur un devoir. Quelle figure de Syntaxe cette phrase renferme-t-elle? Est-elle réguliére ou vicieuse? Pourquoi ? Ecrivez correctement : F'eusse été antrefois tout disposé á vous rendre service, comme aujourd'hui et a l'avenir, si je n'avais pas àme plaindrede vous.
(7.) Qu'est-ce que le Pléonasme? Peut-il ētre admis dans ces vers deCorneille : Il en conta la vie et la tête à Pompée. Pemt-on plus dignement mériter la couronne?
(8). Quelle différence y a-t-il entre: Quelgu'un est-id plus savant que cedocteur, et Persenne est il....; entre : y a-t-il quelquechose de plus parfait que ce tableau, et y a-t-il rien de plus. $\qquad$
(9). Expliquez l'emploi des deux mots son et leurs dans les phrasessuivantes? Les deux reis fivent chanter des te-deum, chacun dans son camp. Les langues ont chacune leurs bizarreries (Why not ses.)
(10). Eevivez en Francais : There is a friend of yours. That's a strange idea of yours. I paid for the house with my own money. He has a house: of his own. One seldom speaks of one's own faults.
(11). Traduisez en français: "Lord Chesterfield to his son."

You cannot but be convinced that a man who speaks and writes with eloquence and grace, who makes choice of good words, and adorns and embellishes the subject upon which he either speaks or writes, will persuade better, and succeed more easily in obtaining what he wishes, than a man whodoes not explain himself clearly, speaks his language ill, or makes use of low and vulgar expressions, and who has neither grase nor elegance ins anything that he says.






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## DALHOUSIE COLLEGE AND UNIVERSITY,

## halifax.

SESSIONAL EXAMINATIONS, 1870.
Friday, April 22.

# FINAL EXAMINATION FOR DEGREE OF B.A. <br> GERMAN.-FOURTH YEAR. 

James Leichti, Esq. Examiner.

Translate: (1) From Schiller's "Wilhelm Tell," Act I., Scene IV.
(2). From Uhland's "Lied eines Armen."

O reicher Gott! du liessest dorh
Nicht ganz mich freudenleer
Ein süsser Trost für alle Welt
Ergiesst sich himmelher.
Einst öffnet jedem Guten sich
Deiu hoher Freudensaal ;
Dann komm auch ich im Feierkleid
Und setze mich an's Mal.
(3). "Sprüche in Prosa."
"Es ist besser das geringste Ding in der Welt zu thun, als eine halbe Stunde für gering halten. Wehe dem Jüngling, der die Stunde zu einer grossen That vorübergehen lässt; er ist nicht werth, eine zweite zu finden. Wer sich nicht zu viel dünkt, ist mehr als er glaubt."
(4). How is the subject influenced by the inversion of the object ? Write in inverted form: "Ich nehme den Vorschlag gerne an."
(5). By what particulars are subordinate clauses in compound sentences characterized? Translate : It was night when I arrived in London. He took a walk after having studied (studirt). My friend did not see it, because he did not go out. You would be glad if I now sent the Professor's letter to your father.
(6). The Infinitive is required with $u m-z u$ in two cases. Give an example for each case.
(7). I do not know where to go. Tell him what to do. How is the elliptical Infin. after how, what, and where completed in German?
(8). Glauben sie dass er kommon wird? Glauben Sie dass er kommen werde? State the difference in the meaning of these sentences. Account for the subjunc. in: Er fragte warum wir nicht gekommen seien.
(9). Write the German of the following expressions: All my money. All the year. All England. Both of us. Both silver and gold. Take another cup (Tusse) of tea. No more money. Much. Many. Little. Few.
(10). How is the preposition of to be translated in the phrases: The thought of God. The fear of death. Love of life. From want of money.
(11). Translate: "Le viẹux prince de Kaunitz se trouvant un soir en société ā Vienne, un jeune fat, qui aperçut ce ministre seul dans l'embrasure d'une fenêtre, s'approcha de lui et lui demanda s'il s'ennuyait (sich langweilen). Non Monsieur, lui répondit le prince, en le regardant fixement (starr), je ne m'ennuie jamais, on m'ennuie. A cette réponse inattendue le jeune fat bégaye quelques mots, et se retire tout confus (beschämt).

# DALHOUSIE COLLEGE AND UNIVERSITY. HALIFAX. 

SESSIONAL EXAMINATIONS, 1870.<br>Wednesday, April 13.

LATIN.-FIRST YEAR.

CICERO: DE AMICITIA.
Professor Johnson, M.A.............Examiner.

1. Translate the following extracts :
a. Quamquam confirmatur amor et beneficio accepto et studio perspecto et consuetudine adjuncta ; quibus rebus ad illum primum motum animi et amoris adhibitis admirabilis quædam exardescit magnitudo : quam si qui putant ab imbecillitate proficisci, ut sit per quem assequatur quod quisque peteret, humilem sane relinquunt et minime generosum, ut ita dicam, ortum amicitiae quam ex inopia atque indigentia natam volunt. Quod si ita esset ut quisque minimum in se esse arbitaretur, ita ad amicitiam esset aptissimus : quod longe secus est.
b. Atque etiam mihi videntur qui utilitatis causa fingunt amicitias amabilissimum modum amicitiae tollere. Nam enim tam utilitas parta per amicum quam amici amor ipse delectat ; tumque illud fit, quod ab amico est profectum, jucundum, si cum studio est profectum : tantumque abest ut amicitiae propter indigentiam colantur, ut ii qui opihus et copiis maximeque virtute praediti, in qua plurimum est praesidii, minime alterius indigeant, liberalissimi sint et beneficentissimi. Atque haud scio an ne opus sit quiden nihil unquam omino deesse amicis. Ubi enim studia nostra viguissent, si nunquam opera nostra nee domi nec militiae Scipio eguisset? Non igitur utilitatem amicitia, sed utilitas amicitiam consecuta est.
2. Write out at length the different clauses in the sentence beginning quam si qui ( $1 a$,) and shew in what relations they stand to each other.
3. What are the subjects and objects of putant, assequatur, peteret, relinquunt, volunt? Account for the gender and number of quam, qui, quem, quod.
4. Give rules for the moods of sit, assequatur, dicam, esset, (a)-indigeant, sit, viguissent (b).
5. Explain the construction of virtute, praesidii, alterius, nihil, amicis, opera, militiae.
6. In what mood and tense are the following verbs ? Proficisci, peteret, natam, arbitaretur, fingunt, tollere, parta, fit, colantur, viguissent. Give their principal parts.
7. a. Decline : quidam, opibus, domi, vis, locus, animal.
b. Compare: primum, humilem, minime, minimum, jucundum, maxime, plurimum, beneficentissimi.
8. Distinguish the meanings of the following words and give derivations: perpetuus, sempiternus, aeternus,-tumultus, bellum,-imago simulacrum, statua,-amplius, plus, magis,-memini, reminiscor, recordor.
9. When does a relative pronoun not agree with its antecedent in gender and number? Give the rules for the cases of nouns answering the questions where, whence, whither. Distinguish similis tui, similis tibi,-patiens laborum, patiens labores. What impersonal verbs govern the genitive?
10. Translate into Latin-Caius freed his country from a tyrant, a thing which many have wished to do.-This entire world is rightly regarded as one commonwealth of mankind.-He repeats his sin who is not ashamed of it.-This, lastly, I particularly ask of you.-Antiochus constructed a moat six cubits deep and twelve wide. -Because it was now the close of day, the battle was not commenced; but when the greater part of the night had elapsed, they assail the camp of the enemy.

HISTORY OF GREECE.-FIRST AND SECOND YEARS.

1. Where was Greek ordinarily spoken in the fifth and in the first century B. C. ? What dialects were used ?
2. What were the causes of the Persian invasions of Greece? Give some account of the resistance made by the Greeks, and dates.
3. Describe the chief characteristics of the Athenian constitution in the time of Pericles.
4. What gave rise to the Peloponnesian war? What were the chief events in it, and what was the issue? Give dates.
5. Describe the Amphictyonic Council. What part did it play in the affairs of Greece in the time of Philip?
6. Give the dates of Alexander's victories in the East and the results of each. How far did his conquests extend? How were his dominions divided after the battle of Issus?
7. Name the chief Greek Historians. Over what periods did their histories extend ?
8. Describe the Acropolis of Athens and the buildings on it.
9. Mention the schools of Philosophy in Greece; explain their names, and some of their principles. Mention the founders and when they lived.

## DALHOUSIE COLLEGE AND UNIVERSITY,

## HALIFAX.

SESSIONAL EXAMINATIONS, 1870.<br>Thursday, April 14th.<br>GREEK :-LUCIAN.-SELECT DIALOGUES.<br>first year.<br>Professor Jounson, M.A. ......................... . Examiner

1. Translate:-














2. What relations are denoted by the clauses?

$$
\begin{aligned}
& \check{a} \chi \rho \iota \varsigma ~ a ̆ v \tau \iota \varepsilon \pi \iota \sigma \kappa \eta\rangle \psi \omega \text { * * * }
\end{aligned}
$$

$$
\begin{aligned}
& \text { oios ह̇ } \sigma \tau \iota \nu
\end{aligned}
$$

How would the relative adverbs and pronouns be translated into Latin? What words are used in such clauses in Latin?
3. In the sentence $\dot{\delta v \tau o \sigma i}$ үàp $\delta$ трıбкaтápatos, what are the subjects and the predicates of $\varepsilon \pi \pi \rho a \xi \varepsilon$ and $\pi a \rho a \lambda \varepsilon i \psi \varepsilon \iota \nu$ ? What are the subject and the predicate of the clause $\varepsilon$ ह́ $\pi \varepsilon \grave{\imath}$ $\delta \grave{~} \tau o u ́ \varrho$ * * ?

 غं $\pi \iota \sigma \kappa \eta \psi \omega \tau$ т̃ $\gamma ข \nu а \iota \kappa$.
5. Write the Voice, Mood and Tense, and principal parts of $i \delta \omega$, ave $\lambda \theta \varepsilon i v$,

6. Give all the cases of K $\lambda \omega \theta 0 i$, бoí, $\gamma v \nu \alpha u \kappa i ́ . ~ i \delta \iota \omega ́ t \eta s, a ̉ \nu \delta \rho a, \pi \sigma \lambda \varepsilon \iota$.
7. Write down the Acc. singular and plural, in the three genders, of $\mu \eta \delta \varepsilon v o ́ \varsigma, \dot{\eta} u \tau \tau \varepsilon \lambda \eta \bar{s}, \mu \grave{\varepsilon} \gamma a v, a \dot{v} \sigma \delta \varsigma$, $\delta v \tau 0 \varsigma, \pi \lambda \varepsilon i o v a \varsigma, \mu v p i o v s$.
 -the termination os becomə $\omega \tau \varepsilon \rho o s$ in the compar.? What adjectives have the same form for the masculine and feminine?
9. (a) Analyse these verbal forms, and name each part:-官 $\tau \mu \dot{\eta} \sigma \alpha \mu \varepsilon \nu$, $\dot{\varepsilon} \delta \dot{\varepsilon} \delta o v \tau o, \tau \varepsilon \in \eta \tau \iota, \mu \mu \nu \eta \dot{\eta} \sigma \omega$, iбт $\eta \mu$. (b) Write the earlier forms of these

10. Give the 3rd singular, 1 Aor. opt. Act., Pass. and Mid. of $\mu \varepsilon \nu \omega$, ібт $\eta \mu$, фi $\lambda \varepsilon ́ \omega, ~ \tau \rho \varepsilon ́ \pi \omega$.

Give the 2nd Aor., Act., Pass. and Mid of all the Moods of $\lambda \varepsilon i \pi \omega$, $\tau \rho \varepsilon ́ \pi \omega$, סíס $\omega \mu$, $\imath \eta \mu \iota$.

## DALHOUSIE COLLEGE AND UNIVERSITY,

## HALIFAX.

SESSIONAL EXAMINATIONS, 1870.<br>Monday, april 18, 3 P.m.<br>MATHEMATICS.-FIRST YEAR.

## ALGEBRA.

Professor C. Macdonald, M.A............. Examiner.

1. Give the rule for the Division of Vulgar Fractions; and explain the reason of it in working this example : $\frac{3}{4}$ divided by $\frac{5}{6}$.
2. If a Vulgar Fraction, expressed in its lowest terms, be reduced to a decimal and result in a circle, the number of figures in the circle must be less than the denominator of the fraction. Also, this number is independent of the numerator.
3. Find the sum of $\frac{1}{a+b}+\frac{a+b}{a^{2}-a b+b^{2}}-\frac{2\left(a^{2}+b^{2}\right)}{a^{3}+b^{3}}$.
4. Divide $x^{4}-81 y^{4}$ by $x-3 y$ : and expand $\left(a+\frac{1}{2} b\right)^{5}$.
5. Multiply $a^{m}$ by $a^{n}$; also divide the former by the latter, and from this rule, deduce the meaning of the zero power and the negative and fractional powers of $a$.
6. Resolve into rational factor's such of the following expressions as can be resolved; $a^{2} \pm b^{2}, a^{3} \pm b^{3}, a^{4} \pm b^{4}, a^{5} \pm b^{5}$.
7. Find the sum of $2 \sqrt{8}+5 \sqrt{18}-\sqrt{98}-\sqrt{288}$, and the difference of $\sqrt{a^{3}+2 a^{2} b+a b^{2}}$ and $\sqrt{a^{3}-2 a^{2} b+a b^{2}}$.
8. Given $\frac{1}{2}(x-2)+\frac{1}{3} x=20-\frac{1}{2}(x-6)$, and also $\frac{1}{3} x^{2}-\frac{1}{2} x=9$; to find $x$ in each case.
9. A can in 20 hours do a piece of work that takes B 30 hours to do it. After A had been working at it a certain time, he left off, and B finished it in 25 hours from the time A had begun it. How long did each work ?
10. If the sum of two numbers be multiplied by the greater, the product is 104 ; and if their difference be multiplied by the less, the product is 15. What are the numbers?
11. Show how to solve a Quadratic Equation without completing the square; describe also the method used sometimes in order to avoid fractions; illustrate by examples of your own.

- 12. Sum the infinite series, $a+a r+a r^{2}+\& c ., r$ being less than 1 ; and apply the result to find the value of the Decimal Fraction $\cdot 81 \dot{3} 4$, so as to show the reason of the common Arithmetical rule.

13. Assuming the usual notation, prove that the sum of an Arithmetical series is, $s=(a+l) \frac{n}{2}$, or $(2 a+(n-1) d) \frac{n}{2}$.
14. The sum of $n$ terms of the even numbers, $2,4,6$, \&c. : the sum of $n$ terms of the odd numbers, $1,3,5$, \&c., $:: n+1: n$.

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# DALHOUSIE COLLEGE AND UNIVERSITY, 

## HALIFAX.

SESSIONAL EXAMINATIONS, 1870.<br>Monday, april 18, 9 A.m.<br>MATHEMATICS.-RIRST YEAR.<br>GEOMETRY.<br>Professor C. Macdonald, M.A..............Examiner.

1. The greater side of a triangle has opposite to it the greater angle.
2. Straight lines that are parallel to the same straight line, are parallel to one another.
3. Parallelograms npon the same base and between the same parallels are equal to one another : (one fig:).
4. What is the difficulty in Euclid's axiom respecting parallel straight lines? State some of the forms of the axiom by which it has been attempted to avoil this difficulty.
5. ABC is a triangle, having C an ohtuse angle, and AG is drawn perpendicular on BC produced; prove that $\mathrm{AB}^{2}$ is greater than $\mathrm{AC}^{2}+\mathrm{CB}^{2}$ by twice the rectangle $\mathrm{BC} \cdot \mathrm{CG}$.
6. Prove, by the division of the straight line only, that if a straight line be divided into two parts, the square of the whole line is equal to the squares of its two parts, together with twice the rectangle contained by the parts.
7. If one circle touch another internally, the straight line joining their centres shall pass through the point of contact. Euclid's method of proof can be somewhat improved.
8. The straight line drawn from the extremity of the diameter of a circle at right angles to it, falls without the circle.
9. The opposite angles of a quadrilateral figure inscribed in a circle are together equal to two right angles.
10. Inscribe a regular quindecagon in a given circle.
11. ABC is an isosceles triangle having $\mathrm{AB}=\mathrm{AC}$, and AD is drawn to any point D in the base: prove

$$
\mathrm{AB}^{2}=\mathrm{AD}^{2}+\mathrm{BD} \cdot \mathrm{CD}
$$

12. From a fixed point in the circumference of a circle, any number of chords is drawn : the locus of their middle points is a circle.
13. Describe a circle that shall pass through a given point and touch a given circle in a given point.
14. Of all equal triangles upon the same base, that which has the greatest vertical angle is the isosceles.

# DALHOUSIE COLLEGE AND UNIVERSITY. 

halifax.

SESSIONAL EXAMINATIONS, 1870.<br>Wednesday, april 13.<br>LATIN.-SECOND YEAR.

LIVY : BOOK I, CHAP. 1-20.-HORACE : SELECT ODES.
Professor Johnson, M. A............Examiner.

1. Translate:
a. Tum Sabinae mulieres, quarum ex injuria bellum ortum erat, crinibus passis scissaque veste, victo malis muliebri pavore, ausae se inter tela volantia inferre, ex transverso impetu facto, dirimere infestas acies, dirimere iras; hine patres, hinc viros orantes, ne se sanguine nefando soceri generique respergerent: ne parricidio macularent partus suos, nepotum illi, liberum hi progeniem. Si affinitatis inter vos, si connubii piget in nos vertite iras: nos causa belli, nos vulnerum ac caedium viris ac parentibus sumus. Melius peribimus, quam sine alteris vestrum viduae aut orbae vivemus. Movet res tum multitudinem, tum duces. Silentium et repentina fit quies. Inde ad foedus faciendum duces prodeunt: nee pacem modo, sed et civitatem unam ex duabus facieut.
> b. Hoc caverat mens provida Reguli

> Dissentientis conditionibus
> Foedis et exemplo trahentis
> Perniciem veniens in aevum,

Si non periret immiserabilis
Captiva pubes. "Signa ego Punicis
Adfixa delubris et arma
Militibus sine caede," dixit,
" Derepta vidi ; vidi ego civium
Retorta tergo brachia libero
Portasque non clausas et arva
Marte coli populata nostro.
Auro repensus scilicet acrior
Miles redibit. Flagitio additis
Damnum : neque amissos colores
Lana refert medicata fuco, Nec vera virtus cum semel excidit Curat reponi deterioribus."
2. Analyse the sentence beginning Tum Sabinae mulieres into principal and subordinate clauses. Translate the first stanza of extract $b$ according to another reading.
3. Turn ne se sanguine . . . progeniem into oratio recta,-Si affinitatis . . . sumus into oratio obliqua.
4. Account for the cases of affinitatis, conditionibus, militibus, Marte, delubris. What relation is expressed by ad foedus faciendum? How else might the same relation be expressed? When does the Gerundive agree with a noun, and when does it govern one? What is the equivalent form in Greek ?
5. Parse these verbal forms, and give their principal parts: ortum, passis, scissu, victo, ausae, dirimere, respergerent, vivemus, caverat, adfixa, retorta, populata, repensus, excidit.
6. Write short explanatory notes on spolia opima, Quirites, Janus, menses intercalares, Salii,-Danai genus infame, inclusam Danaen, concidit auguris Argivi domus ob lucrum, quantum distet ab Inacho Codrus.
7. Give a scheme of the Sapphic stanza. Scan the first stanza of extract $b$.
8. When is the relative pronoun followed by the Subjunctive mood? How is the want of a Past Active Participle and a Present Passive Participle supplied? When is ut followed by the Indicative mood, and when by the Subjunctive ?
9. What events in Horace's life are known to us? What materials did Livy possess for writing his History? What period was covered by it? How much of it has come down to us?
10. Translate into Latin :-W hen Tanaquil had shown her almost lifeless husband to Servius, who had been hastily summoned, she grasps his right hand and begs him not to let his father-in-law's death go unrevenged. "The kingdom is yours, Servius," she says, "if you are a man ; not theirs who have committed a most heinous crime by the hands of others. Rouse yourself and follow the gods as your guides, who have foretold that this head would be illustrions by the divine fire kindled round it. We have reigned though foreigners. Think of what you are, not of whence you are sprung.


[^0]:    * Suffice for the course, except Geometry.
    t For Students of the First Year, the Mathomatical Books used in the Schools are for the most part sufficient.

    The Books in Weale's Series are mentioned principally for their cheapness.

