

## KNOX CHUROH,

$$
\begin{aligned}
& \text { COR PORTAGE AVENUE AND FORT STREETS, } \\
& \text { WINNIPEG. }
\end{aligned}
$$

RHV. J. ROABRTEON, PAETOR.



- SABBATH SERVICEZS.

Morning, 11 o'clock.

$$
\begin{aligned}
& \text { Afternoon, s óclock - Youna Prople's Bible Class and } \\
& \text { Sabbayti Sohool. } \\
& \text { Evening, ? o'clock. }
\end{aligned}
$$

Monday Evening,<br>- Young Men's Clabs.

Wednesday Evening.
Thursday Avening,

- Prayer Mebtina. Young Men's Soolety, seats allocaten to the colleas fob atudeyts.


## KILDONAN CHURCH, REV: J. ALIACK, D.D., PAETOR.

## SABBATH SERVICES

Morning, 10 o'clock.
Bible-Class and Sabbath Sahool at 11.so.
1.4 fiernoon, 3 o'clock.

Thursday Evening,
Prayer Meftino.
BTUDENTS WELCOME

## ANNUAL CALENDAR

OF<br>\title{ MANITOBA COLLEGE, }

WINNIPEG.
1


Session 1880-1881.
)

TORONTO:
PRINTED AT THE PRESBYTERIAN PRINTING HOUSE.
1880.

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ACADEMICAL YEAR, 1880-81.


ACADEMICAL YEAR, 1880-81.


Last year the Free Church of Scotland gave a donation of $£ 150$ sterling to the College.
Presbyterian Chułch of Ireland £100.
Applications have been made to the Church of Scotland and United Presbyterian Church, with expectation of grant.

# MANITOBA COLLEGE, 

WINNIPEG.

## Board of glanageuitut.

A. G. 1. Bannatyne, Chairman.

Prof. Bryce, Prof. Hart, Dr. Black, Rey. Messrs. Allan Bell, James Robertson, Alexander Campbell, John Scott, Messrs. G. McMicken, D. McArthur, D. U. Campbell, P. R. Young, William Fraser, John Sutherland, A. W. Ross.

Seruate.
Rev. Prof. Bryge, Chairman.
Prof. Hart, Dr. Black, James Robertson, Alex. Campbell.

## 2assmbly's ©

Rev. D. H. Fletcher, Convener.
Dr. Reid, Dr. Grant, Dr. Moore, Rev. Messrs. D. J. Macdonnell, M. W. McLean, G. Bruce, E. F. Torrance; Hon. Alex. Morris, Hon. J. McMurrich, Messrs. Donald McLellan and James Croil.

## Staff of : thastructoxs.

Rev. George Bryce, M.A., LL.B., Professor of Science and Iiterature.
Rev. Thomas Hart, M.A., B.D., Professor of Classics and French.
$\left.\begin{array}{l}\text { Rev. J. Black, D.D., } \\ \text { Rev. James Robertson, }\end{array}\right\}$ Lecturers, in Theological Subjects. Mr. A. M. Campbelé, Resident Tutor.

## Courses of Study.

The objects of the College are:-
(1) To give such a higher education as the requirements of the country demand.
(2) To train such students for the Holy Ministry as are placed by the General Assembly under the supervision of the Presbytery of Manitoba.

## aluiversity © Curse.

Manitoba College, along with the Episcopal and Roman Catholic Colleges in Manitoba, is affiliated to the University of Manitoba, which was established in 1878.

The following are the privileges enjoyed by the College by virtue of its affiliation :-
(1) To elect seven representatives on the University Council of twenty-seven members.
(2) To nominate two of the eight members of the Board of Studies of the University.
(3) To have the entire management of its internal affairs, studies, worship and religious teaching.
(4) To grant, with the sanction of the General Assembly, the degrees of Bachelor of Divinity and Doctor of Divinity, which degrees shall entitle the holders to all rights and privileges, as if granted by the University.

## \%university dexamiuatious.

Manitoba College was the foremiost of the three affiliated Colleges to take advantage of the University Examinations, first held in May, 1879.

## gluiversitycturxiculum.

The University has four Examinations in its full Course:
(1) The Preliminary.
(2) The Previous.
(3) Junior Year for B.A.
(4) Senior Year for B.A.

The subjects for examination in the Preliminary are:
Latin. ....... Cesar (Bellum Brittanicum), Bks. IV., c. 20, \& V.
" ........Virgil, AGneid, Bk. I.
Greetx ........ Xenophon's Ànabasis, Bk. I.
English . . . . . .Milton's Paradise Lost, Bk. I.
Frenoh . . . . . .Télémaque, Bk. I.
History .....Roman, to 31 B.C. ; British History.
" ......Canadian History.
Evowid. . ......Bk. I.
Alcembra .....To end of Simple Equations.
Arithmetio ., To end of Cube Root.

In this Examination there are eight papers of three hours each.

The subjects for the Previous Examination are:


In this Examination there are thirteen papers of three hours each.

After passing the Previous Examination, two years must elapse before the Final Examination for B.A. can be passed. Two methods of gaining the B.A. degree are then permitted :
(1) Ordinary B.A. Course.
(2) B.A. in Honours.

The subjects for the Ordinary B.A. Examination are:

| Latin . . . . . . . . . . . . . .Tacitus' Annals, Bk. I. <br> " $\ldots \ldots \ldots \ldots$.....................Ars Poetica, and Annals, Bk. I. |  |
| :---: | :---: |
|  |  |
| Grirk . ............. ©rschylus' Prometheus Vinctus. |  |
| Mathematios . . . . . . Algebra. |  |
| " | . Luuclid : Definitions Bk. V.; Bk. VI.; |
|  | Bk. XI., 1-12 ; Bk. XII., 1, 2. |
| Plane Trige | as far as Solution of Plane Triangles. |
| Elmmantary |  |

> Ellmbntary Hydrostatics.
> Inorganic Chemistry.
> Zoology.
> Loario (Whately).
> Metaphysios (Reid's Essays).
> Moral Philosophy (Calderwood).
> Politioal Eoonomy (Roger).

In this Examination there are eleven papers of three hours each.

The Honour B.A. degree may be obtained in any one of the five departments :

Classics.<br>Mathematics.<br>Natural Scienoes.<br>Mental and Moral Science.<br>Modern Languages.

As the only course yet pursued by a student of the College, the Natural Science Honour Course only is given. (The other courses can be obtained from the Registrar of the University of Manitoba.)

\author{

Junior Year, for B.A. in Natural Sciences: <br> Inorganio Chemistry (Roscoe). <br> Comparative Physiology (Agassiz and Gould). <br> Struotural Botany (Gray). <br> Mineralogy (Dana). <br> Chemioal Physics (Miller). <br> Senior Year, for B. A. in Natural Sciences: <br> | Organic Chemistry (Fownes). | Paleontology (Nicholson). |
| :--- | :--- |
| Grology (Lyell.) | Hibtology (Carpenter). |
| Zoology (Nicholson). | Physioal Geography (Page). |
| Appled Chemistry. | Comparativr Anatomy (Rolleston). |
| Systematio Botany (Gray). | Astronomy (Lockyer). |
| Cbystallography. | Meteorology (Loomis). |

}

## A Candidate in any Honour Cpurse must also pass in : <br> Statios and Hydrostatics. <br> Trigonometry. <br> - Logio (Whately). <br> Moral Philosophy (Calderwood). <br> Inorganio Chemistry (Roscoe).

In this two years Honour Course for B.A. the Candidate has seventeen papers of three hours each in Sciences; and five papers of three hours each in the Pass subjects.

## Statistics of \&uiversity Cuxamiuations.

The following is the number of students who have passed the University Examinations during the short course of the University, with their Colleges :

|  | 1878. <br> Manitoba College. | St. John's Episcopal College. | $\begin{gathered} \text { st } \begin{array}{c} \text { Boniface. } \\ \text { R. C. } \\ \text { College. } \end{array} \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| Preliminary Examination |  | 0 | 0 |
| Previous Examination .... | 1 | 0 | 0 |
| Total... | 6 | 0 | 0 |
|  |  | - | - |
|  | 1879. |  |  |
| Preliminary Examination | 3 | 0 | 0 |
| Previous Examination... | 2 | 7 | 2 |
| Junior B.A. Year . . . . . . . | 1 | 0 | 0 |
| Total. | . 6 | 7 | 2 |
|  | - | - | - |
|  | 1880. |  |  |
| Preliminary Examination | 7 | 0 | 0 |
| Previous Examination ... | 6 | 4 | 2 |
| Junior B.A. Year ... | 1 | 2 | 1 |
| Senior B.A. Year . . . . . . | 1 | 0 | 0 |
| Total.. | 15 | 6 | 3 |

Students who have passed the Examinations of the University of Manitoba will be given an equivalent standing by the University of Toronto; Queen's College, Kingston; McGill College, Montreal; and Victoria College, Cobourg.

## Eereparatory coroust.

As up to the present time no facilities exist in Manitoba or the North-West for obtaining the necessary preparation for the University or for business, Manitoba College is compelled to open such preparatory classes as are required, under the Professors and Resident Tutor, so that parents in remote parts of the Territory, or in neglected parts of the Province, may depend upon the best care being given to their sons, and upon their being fitted for usefulness in life. This course not only fits for entrance on the University Course, but also for entrance on Agriculture and Civil Engineering in Eastern Colleges, and for the Military College at Kingston. Commercial subjects, such as Penmanship, Business Correspon ${ }^{-}$ dence, and Book-keeping, receive attention in this course.y

A large number of those who have taken this course have taken certificates as Public School Teachers, and are now engaged in teaching throughout the Province.

## \%ymstructiou iu Chtalogy.

The General Assembly has from time to time put students for Theology under the care of the Presbytery of Manitoba,
who have received instruction in Manitoba College. In the short history of the College three such young men have finished their course, and are now engaged as efficient ministers in the mission field. Other students are now upon their way. The session of the College being nine months in length, the General Assembly of 1874 permitted the course to be made one of four years, and appointed the following as the curriculum, whigh is followed as closely as can be accomplished.

| I. | II. | III. | IV. |
| :---: | :---: | :---: | :---: |
| Latin, | Hebrew. | Hebrew'Exegesis. | Hebrew |
| Greek, | Greek Exegesis. | Greek Exeges |  |
| Paley's Eviden | Butier's Analogy. | Systematio Theor- |  |
| Reid's Essays. | Whately's Logic. | Biblioal Criticism. | Oastoral Theology. |
| Ohurch Eistory. | Centuries I.-IV. | Church History, |  |
| Study of Gospels. | Homiletics. | Cent. VI.-XVI. |  |

## 

An examination will be held on the thirteenth of September for students entering the first regular college form, for three bursaries of $\$ 15, \$ 10$ and $\$ 7.50$.

Subjects of examination may be obtained from Rev. Prof. Hart, Winnipeg.
A bursary of the value of $\$ 20$, established by Adam Thom, Esq., an old resident of Red River, will be awarded as the result of the Regular Terminal Examinations.
$\$ 40$ has also been placed at the disposal of the Senate for a deserving student, by a friend of the College in Montreal.

Prizes in books are also awarded to successful students at the College Examinations.

The Governor-General's Medal will be presented to the best student of the College, who passes successfully the December and March examinations of the College, and obtains the highest number of marks at the Preliminary Examination of the University of Manitoba.

Students of Manitoba College, going up to the University Previous Examination, or University Final Honour Examination, are eligible for the Silver and Bronze medals presented by His Excellency the Governor-General to the University of Manitoba.

## CHolleye edibraxy.

The library has been largely increased during the past year by donations from friends of the College in Great Britain and Canada, and now numbers about 3,000 volumes. It comprises works in Theology, History, Science, general literature, and has a good collection of Classical authors, Commentaries and Dictionaries.

The Library will be at the disposal of the students, under suitable regulations.

## ©erms of \$tuady.

Fall Term. ........... . . September, October, November.<br>Wintrar Term.......... December, January, February.<br>Spring Trrm........... March, April, May.

## Equlidays.

> Christmas Holidays................Two Weekg. Eabter Vacation............. .....One Week.
> Sumari Vacation June, July, August. All National Holidars.

## EREs

Regular Course............ 87.50 per Term, in advanoe. Preparatory Course 8.00 "

## Bonard.

The College building is a wooden edifice, but built in the warmest manner in vogue in the country. A careful matron superintends the Boarding Department.

Board
.per Week, 83.50.
Five-Day Boardzrs 3.00.

Washing, at Current Rates.
Furl Rate.

## Besidence fegulationg.

Students are under the careful supervision of the Chairman of the Senate and are not ellowed to leave the Residence at night without his special permission. Study hours are from 9 to 12 А.м. ; 1.30 to 3 р.м.; from 7 to 9.30 p.m. for Juniors; from 7 to 11 р.м. for Seniors. Morning worship is at 8.30 ; evening worship at 9.30. Religious instruction of a non-sectarian kind is given to all students of the College, unless objected to by parents or guardians. Resident students are expected to attend morning and evening Sabbath service, and
afternoon Bible-classes in Knox Church, Winnipeg, unless other arrangements are made by the parents or guardians of such students. Breakages of College furniture, or injury done to College books or property will be charged to students.

## Centume.

University Students are required to provide themselves with College cap and gown, according to pattern adopted by the Senate, and are required to appear in their classes with proper costume.

## glumui of gatuitota Coultye,

## AND TEARS OF FINISHING:

Black, W.R........(B.A., and Silver Medallist, Univ. of Toronto), . . 1874.
Sutherland, A. M. ..(B.A., Univ. of Toronto) .............. ............ 1874.
Sutherland, W. R. ..(M.D., Toronto) .......................... ............ . 1875.
Laurie, W............................................. . ......... . ........... . . 1875.
Laurie, R.C. . . . . . . (Military College, Kingston). ........................ . 1875.
Ferguson, A. M.... (Trinity Medical School). ............................. 1878.
Gunn, W. R. ...... (1st B.A. of Univ. of Manitoba, and Governor-
General's Silver_Medallist). . . . . . . . . . . . . . . . . . . . 1880.

## 전umit in ©htalogy,

and present residence.

Duncan James. . . . . . (Ordained 1878) . . . . . 1878. . . . .Prince Albert, N. W.T.
Polson, Samuel. . . . (Ordained 1879) ..... . 1878. . . . . Millbrook, M.
MeGregor Dugald . . (Received by General
Assembly, 1880)....1880. ....Salisbury, N.W.T.

## Thudergraduates of ?university of catauitoha

 FROM MANITOBA COLLEGE.RESIDENOER, AND DATE OF ENTRANCE TO UNIVERSITY.



## 

## FOR SESSION 1879-80.

Agnew. J.
Ferguson, N.
Hargrave, J. B. Huggard, J. T. Hursell, T.
Kennedy, J. C. McLeod, $\boldsymbol{G}$. McVicar, D. McPhillips, X. Parker, G.

Scott, T. H.
Scott, T. W. Scott, W.
Stevenson, H.
Wood, R.
Bannatyne, R.
Oraig, A.
Freeman, J.
Kennedy, C. Lyon, $\mathbf{H}$.

Lyon, F.
Logan, A.
McLaren, A.
McGregor, $\mathbf{H}$.
More, T.
Nicol, 0.
Scott, James.
Strang, Robert.
Strang, Reginald.

## UNIVERSITY OF MANITOBA

## ©xamination 誓apects.

At the late University Examinations six papers were given in Preliminary Examination, twelve in Previous Examination, fifteen in Junior B.A. Year, and fourteen in Senior B.A. Year.

A few-as many as the space permits-are selected from these and given in the following pages:-

## PRELIMINARY EXAMINATION, JUNE 1, 1880.

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MODERN LANGUAGES-TELEMACHUS.
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Examiners-Rev. F. Hughes, A. C. Killam, B.A., Rev. O. Fortin, B.A.-Time, $1 \frac{1}{2}$ hours.

1. Translate:-"Jétais parti d'Ithaque pour aller demander aux autres rois revenus du siége de Troie des nouvelles de mon père. Ni Nestor, que je vis à Pylos, ni Ménélas, qui me reçut avec amitié dans Lacédémone, ne purent m'apprendre si mon père était encore en vie. Lassé de vivre toujours en suspens et dans lincertitude je me résolus d'aller dans la Sicile, où j'avais oui dire que mon pè avait été jeté par les vents. Mais le sage Mentor, que vous voyez ici présent, s'opposait à ce téméraire dessein: il me représentait d'un côté les Cyclopes, géants monstrueux qui dévorent les hommes ; de l'autre, la flotte d'Enée et les Troyens qui étaient sur ces côtes."
2. Write short historical notes on "Troie, Nestor, Pylos, Ménélas, Lacédémone, and Enée."
3. Parse and give the derivation of the following words:-siége, lassé, suspens, téméraire, dessein, Cyclopes, géants.
4. Translate :-"Cette condition me parut plus dure que la mort. Je m'écriai, $O$ roi! faites-nous mourir plutôt que de nous traiter si indignement. Sachez que je suis Télémaque, fils áu sage Ulysse, roi des Ithaciens; je cherche mon père dans toutes les mers; si je ne puis le trouver, ni rétourner dans ma patrie, ni éviter la servitude, ôtez-moi la vie, que je ne saurais supporter."
5. Mention all the verbs in this extract-which are regular and which are irregular? Give in full the present indicative, the preterite definite, the future, and the present and past participles of mourir, étre, retourner, savoir.
6. How many kinds of pronouns are there? Give the personal pronouns in all their persons. Distinguish between $l e$ pronoun, and le article. What is le in the sentence "Si je ne puis le trouver."
7. State the general rule for the comparison of adjectives. Form the degress of bon, mauvais, petit. What adjectives have neither comparatives nor superlatives?
8. Sketch briefly the plan of the 1st Book of Telemachus, and give an aperçu of the author's life.

PRELIMINARY EXAMINATION, MAY; 1880.
MATHEMATICS.-ARITHMETIC AND ALGEBRA.
Examiners-The Bishop of Rupert's Land; The Rev. Professor Cloutier; The Rev. A. Campbell, B.A.-Time, three hours.

1. Multiply $22 \dot{5} 5 \dot{5}$ of ( $7+\frac{7}{27}$ ) by $\frac{1351.55}{85 \cdot 1}$ of $\frac{21}{20.02}$
2. Add $3 \frac{3}{\frac{3}{8}}$ of $2 \frac{1}{5}$ of $7 \frac{1}{2} \frac{1}{6}$ of $£ 1,9 \frac{3}{7}$ of $3 \frac{8}{8}$ of 1 s ., and $8 \frac{1}{4}$ of $4 \frac{1}{8}$ of 1 d ., and divide the sum by $\frac{1}{2}$ of $5_{\mathrm{r}_{4}^{5}}$ of $\frac{3}{8}$ of $3 \frac{1}{2} \mathrm{~d}$.
3. What is the cost of building the walls of a house 28 feet
long, 22 feet wide, and 15 feet high, the walls being fifteen inches in thickness, at 8 cents per cubic foot?
4. If 5 compositors in 16 days, 11 hours long, can compose 25 sheets, of 24 pages in each sheet, 44 lines in each page, and 40 letters in a line; in how many days, each ten thours long, can 9 compositors compose a volume, to be printed in the same letter, consisting of 36 sheets, 16 pages to a sheet, 50 lines to a page, and 45 letters to a line?
5. A trustee held $\$ 12,686.67$ in Dominion of Canada 6 per cent. stock. The Government on paying off this stock gave the option of money or the same amount of 5 per cent. stock. When the 6 per cent. stock was paid off the 5 per cent. stock was at 1013. Supposing the trustee had accepted the 5 per cent. stock instead of cash and then sold it out, what would he have gained-the brokerage being $\frac{1}{4}$ per cent.?
6. What is the difference, to 3 places of decimals, between the square root of $\frac{2}{3}$ and the cube root of $\frac{2}{3}$ ?
7. The product of two factors is $1-\frac{8}{8} x+\frac{21}{4} x^{2}-\frac{85}{8} x^{8}+\frac{4}{4} x^{4}$ $-\frac{5}{2} x^{5}+x^{6}$, and one of them is $1-2 x+4 x^{2}-8 x^{3}$, find the other.
8. Shew that $4 a^{2} b^{2}-\left(a^{2}+b^{2}-c^{2}\right)^{2}$ equals $s(s-2 a)(s-2 b)$
$(s-2 c)$, if $s=a+b+c$.
9. Define the terms Measure, Common Measure, and Greatest Common Measure or Highest Common Factor of two algebraical expressions, and find the G; C. M. or H. C. F. of $x y-2 x^{2}$ $-3 y^{2}+4 y z+x z-z^{2}$ and $2 x^{2}-9 x z-5 x y+4 z^{2}-8 y z-12 y^{2}$.
10. Solve the equations:-

$$
\begin{aligned}
& \text { (a) } \left.\begin{array}{l}
f(6 x-5)-\frac{5}{5}(5 x-4)+\left(\frac{1}{4}-\frac{1}{6}\right)(4 x-3)=0 . \\
\text { (b) } \left.\begin{array}{l}
\frac{2}{3}(x+2 y)+\frac{4}{3}(2 x+3 y)=6 \\
\frac{3}{3}\left(x-\frac{1}{3} y\right)-\frac{2}{3}\left(x-\frac{1}{4} y\right)=0
\end{array}\right\} \\
\text { (c) } x y+2 y z+3 x z=6 x y z \\
z x+2 x y+3 y z=6 x y z \\
z x+2 z x+3 x y=6 x y z
\end{array}\right\} \\
& y z
\end{aligned}
$$

11. A messenger starts on an errand at the rate of 5 miles an hour; 40 minutes afterwards another starts to overtake him, which he did in an hour and a half. At what rate did the latter ride?
12. The interest on $\$ 10,550$ for 6 months, together with the interest of $\$ 12,660$ for 5 months, is equal to $\$ 1,688$. Find the rate of interest.

## PREVIOUS EXAMINATION, JUNE 4тн, 1880.

Greek.-Demosthenes.
Examiners-Rev. A. A. Forget Despatis; Rev. Canon O'Meara, M.A. ; Rev. Professor Hart, M.A., B.D. Time, three hours.

## I.

1. Translate:-
 (12 lines.)
 had at his commatid at this time.
2. Tá $\chi \omega \rho c a$. What places were these?
 construction. What is it called ?

## II.

1. Translate:-
 lines.)

2. חл'́ovta. Give the future of this verb, and mention five other verbs which form their future in this manner.
3. Oida. Write out the present Indicative Active, and present Imperative Active of this verb.
 historical incidents here referred to.
III.
4. Translate :-
 (13 lines.)
5. Tpıทрєts. Describe the Greek ship.
6. Xoŋцárшv. Give some account of Greek money.
7. Distinguish the methods of voting in the Greek assemblies.

8. Write a life of Demosthenes. Name any other famous Greek orators.
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## PREVIOUS EXAMINATION, JUNE 5, 1880.

Latin.-Cigero.
Examiners-Rev. A. A. Forget Despatis; Rev. Canon O'Meara, M. A ; Rev. Prof. Hart, M.A., B.D.-Time, three hours.
I.

1. Translate :
(a.) Interim satis longo intervallo, quum esset, etc., to non interfuisse, sed egisse dicit. ( 16 lines.)
(b.) Quod si ipsi hæc neque attingere, etc., to celeritatemque ingeniorum negligemus? (8 lines.)

Parse profectus, voluit, ferebatur, professus, egisse.
2. Derive intervallo, auctoritate, foederatis, nihil, negabis.
3. Give rules for the case of each of the following nouns:Heracleam, Romø, diebus, annos.
4. Give precisely the position of Sicilia, and Heraclea.
5. Give a concise statement of Cicero's argument for Archias.

Translate into Latin:
II.

A new war between the Romans and the Gauls having arisen, a certain Gaul noted for his strength and armour advanced and challenged one of the Romans to contend with him. Then M. Valerius, a tribune of the soldiers, presented himself ; and when he had advanced armed, a raven settled on his right arm. Presently, having joined battle, the raven struck the eyes of the Gaul with his wings and claws. Thus it happened that the Gaul was easily slain by Valerius, who from this circumstance received the name of Corvinus.

## PREVIOUS EXAMINATION, JUNE 1, 1880.

## Modern Languages.-English History.

Examiners-Rev. F. Hughes ; A. C. Killam, B.A ; Rev. O. Fortin, B. A.-Time, three hours.

1. Shew the difference in nature and effect between the conquest of Britain and that of any other portion of the Roman Empire by German tribes.
2. Sketch the character of William the Conqueror, and mention the principal events of his life.
3. What were the principal legislative measures introduced in the reign of Henry I. ?
4. Trace the origin of the religious orders of the 13th Century and their influence upon England.
5. What progress was made in English Parliamentary Government in the reign of Edward I. ?
6. Shew by a genealogical table the nature of the claim of Edward III. to the throne of France, and discuss its validity.
7. Give a short sketch of the effects of the Wars of the Roses and of the condition and progress of the English people during their continuance.
8. What were the results of the policy of Thomas Cromwell?
9. Discuss the characters of John Wyclif, Joan of Arc, Cardinal Wolsey, Thomas Cranmer and Sir Thomas More.

JUNIOR YEAR FOR B.A. EXAMINATION, MAY, 1880.

Mathematics-Trigonometry.
Examiners-The Bishop of Rupert's Land, the Rev. Professor
Cloutier, the Rev. A. Campbell, B.A.-Time, three hours.

1. Explain how angles are measured by degrees and grades. -What is the circular measure of an angle? If $D, G, C$ be respectively the number of degrees, grades, and units of circular measure in an angle, find the connecting equations.
If i represent $5^{\circ}$, how many degrees would there be in the unit of that measure? Express in the same measure a right angle.
2. Define the secant, cosecant, and tangent of an angle, and express the secant and cosecant in terms of the tangent.
3. (a) Determine the sines, cosines, and tangents of $30^{\circ}$ and $60^{\circ}$.
(b) A person observes the elevation of a tower to be $60^{\circ}$, and on receding from it 100 yards farther he finds the elevation to be $30^{\circ}$ : required the height of the tower.
4. Find geometrically the sine of $A+B$ in terms of the sines and cosines of $A$ and $B$, and deduce the expressions for sin $(A-B)$ and $\cos (A \pm B)$.
5. Shew that $\sin 2 A=2 \sin A \cos A, \cos 2 A=2 \cos ^{2} A-1$, and $\cos 3 A=4 \cos A-3 \cos ^{3} A$.

Shew the three different sets of angles with different values for $\cos A$ that would be obtained from the same given value of $\cos 3 A$.
6. What two exceptions are there to the statement that if any three are given of the three sides and the three angles of a plane triangle the rest can be determined?
7. In any plane triangle the sum of any two sides is to their difference as the tangent of half the sum of the opposite angles is to the tangent of half their difference.
8. If $a, b, c$ are the 3 sides, and $A, B, C$ the 3 angles of a triangle, and $2 s=a+b+c$, shew that

$$
\cos \frac{A}{2}=\sqrt{\frac{s(g-a)}{b c}}
$$

Given $a=352 \cdot 25, b=513 \cdot 27$, and $c=482 \cdot 68$ chains, find the $\angle A$, having given

$$
\begin{aligned}
& \log 67410=4 \cdot 8287243 \\
& \log 32185=5 \cdot 5076535 \\
& \log 51327=4 \cdot 7103459 \\
& \log 48268=4 \cdot 6837593 \\
& \log \cos 20^{\circ} 38^{\prime}=9 \cdot 9712184 \\
& \log \cos 20^{\circ} 39^{\prime}=9 \cdot 9111608
\end{aligned}
$$

9. Having given the 3 sides of a triangle, investigate a formula for the area.

Find the area of a triangle whose sides are 40,60 and 80 yards.
10. An object $B$ is invisible from $A$ in the same plane with it, but a base $A C=80$ feet is measured and the angle $A C B$ is found to be $144^{\circ}$; the base is produced 40 feet farther to $D$, when the angle $A D B$ is found to be the supplement of the angle $A C B$. Find the distance, $A B$.

Given the natural tangent of $36^{\circ}=7265426$.

## B.A. EXAMINATION, JUNE 3rd, 1880.

Honors.-Systematic Botany.
Examiners-Rev. Prof. Bryce ; Rev. A. A. Cherrier ; Heber Archibald, B.A.-Time, three hours.

1. Describe generally the system of Linnæus.
2. Who are the leading exponents of the Natural System? State any points in which they differ.
3. Describe the Filices and give their four suborders.

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4. Describe the fertilization of the mosses.
5. Give the mean features of the cactus family.
6. What are the medicinal characters of the plants of Solanaceæ, Lobeliaciæ, and Asclepiadaceæ respectively.
7. Give the distinguishing marks of the Labiatæ and name plants belonging to the order.
8. Describe the orders Salicaceæ and Coniferæ.
9. Describe the main features of the order Composita.

Honors B.-Meteorology.
Examiners-Rev. Prof. Bryce; Rev. A. A. Cherrier; Heber Archibald, B.A.-Time, three hours.

1. Explain the phenomena of dew, fog, clouds, rain, snow, and hail.
2. What is mirage? and explain your answer.
3. Explain how the rainbow is formed.
4. What is meant by Maxima and Minima of temperature?
5. How are the daily, monthly and yearly means calculated?
6. Winds:-How produced? Names of winds and their direction in the torrid zone?

## B.A. EXAMINATION, JUNE 4тн, 1880.

Honors A.-Mineralogy.
Examiners-Rev. Prof. Bryce, Rev. A. A. Cherrier, Heber Archibald, B.A.-Timẹ, three hours.

1. Name the different systems of crystallization and the relations of the several axes in the different systems. What do striated faces on a crystal indicate?
2. State the value of the character of hardness in determining minerals and give Mohs' scale. What peculiarity as to hardness is there in the allotropic forms of carbon?
3. Describe the following minerals:-Cinnabar, Orpiment, Bog Iron Ore, Galena, Cassiterite.
4. Give a full account of the feldspars.
5. How would you detect a limestone rock, an arsenic compound, rock salt, a strontia compound?
6. Certain minerals have the following characters. Name them :
(1) Colour, brass-yellow; tarnished deep yellow; streak metallic, greenigh-black, but little shiny. $\mathrm{H}=3 \cdot 5-4$, $\mathrm{G}=4 \cdot 15-4 \cdot 3$.
(2) Rhombohedral; vitreous lustre. $\mathbf{H}=3$. Effervesces in cold hydrochloric acid. Tooth-shaped crystal.
7. State the mode of occurrence of gold and silver, either native or in principal ores, and give Canadian localities.

## Honors B.-Organic Chemistry.

Examiners-Rev. Prof. Bryce, Rev. A. A. Cherrier, Heber Archibald, B.A.-Time, three hours.

1. Determination of the molecular weight of an organic compound-determination of the vapour density.
2. (a) Preparation-use-physical and chemical properties of cyanogen gas, prussic acid, potassium ferrocyanide.
(b) Write the formula for cyanuric acid-sulphocyanic acid-alcohol-ether-acetamide.
3. What can you say on the primary or monatomic alcohols and their general characteristics?
4. (a) How does starch differ in composition from glucose?
(b) What is the composition of gun cotton, and what advantages does it offer over gunpowder?

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5. (a) What is the constitution of narcotine?
(b) What tests may be used to ascertain the presence of morphine and strychnine?
6. (a) How may fibrin, albumin and casein be separated?
(b) Describe shortly the composition and properties of blood, milk and bile.

## EXAMEN POUR LE BACCHALAUREAT ES ARTS, JUIN 2, 1880.

Cours d'Honneur (St. Boniface College Students). Philosophie. ONTOLOGIE ET COSMOLOGIE (2).
Examenateurs-Rev. Jas. Robertson, Rev. J. T. Lavoie, O.M.I. -Temps, trois heures.

1. In quonam sistat Idealismus Subjectivus?
2. Quid sentiendum sit de idealismo subjectivo Kantii?
3. In quonam sistat idealismus objectivus?
4. Quid sentiendum sit de idealismo objectivo Malebranchii $q^{*}$
5. Refutetur systema Kantii et transcendentalium philosophorum circa essentiam corporum.
6. Utrum mundana materia sit a se?
7. Quomodo intelligi debeat axioma ex nihilo nihil fit?
8. Utrum mundus ab æterno conditus intrinsece repugnat?
9. Refutetur opinio Humi circa legum physicarum con-
10. Quid intelligatur per mundum corporeum?

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Cours d'Honneur, - Philosohie.

THEOLOGIE NATURELLE (2).
Examenateurs.—Rev. Jas. Robertson, Rev. J. T. Lavoie, O.M.I.
-Temps, trois heures,

1. Quid intelligatur per Providentiam ?
2. Utrum Dei Providentia ad singularia sese porrigat?
3. Quid intelligatur per concursum Dei naturalem $?$
4. Utrum Deus omnibus agentibus coöperatur?
5. Utrum Dei cum agentibus liberis coöperatio libertatem ledat aut minuat?
6. Quotupliciter spectari possit actus pravus?
7. Utrum Deus etsi ad actus quoque pravos concurrat, sit peccati causa?


## H

## FORM OF BEQUEST.

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