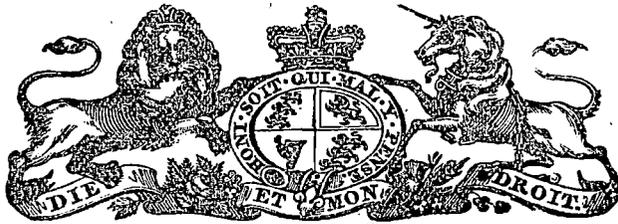


(No. 81.)



1869.

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T A S M A N I A.

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T A S M A N I A N S C H O L A R S H I P S.

EXAMINERS' REPORT FOR 1868.

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Laid upon the Table by the Colonial Treasurer, and ordered by the House to be printed, September 16, 1869.



## TASMANIAN COUNCIL OF EDUCATION.

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### TASMANIAN SCHOLARSHIPS.

THE Council of Education have directed the publication of the name of the under-mentioned Candidate who has passed the Examination for a Tasmanian Scholarship to the satisfaction of the Examiner, and to whom such Scholarship has been awarded accordingly, under "The Tasmanian Council of Education and Scholarship Act," 22 Vict. No. 21 :—

MANASSEH FEARNLEY, Age 19, Hobart Town, Tasmania, Associate of Arts, 1866. High School, Hobart Town, Rev. R. D. Harris, M.A.

The Report of the Examiners is annexed.

By Order of the Council,

Hobart Town, 23rd September, 1868.

GEO. RICHARDSON, *Secretary.*

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MR. PRESIDENT AND MEMBERS OF THE TASMANIAN COUNCIL OF EDUCATION.

I HAVE the honor to report that the Examination for the Tasmanian Scholarships commenced on Tuesday 15th at 9 A.M. and was concluded to-day at 12.30 P.M.

The papers were twelve in number,—four Mathematical, five Classical, one on English, one on French, and one on Constitutional History.

The total time of Examination was forty-three hours, sixteen of which were apportioned to Mathematics, eighteen to Classics, and nine to the three remaining subjects.

Of the four candidates one only succeeded in fulfilling the conditions imposed by the Regulations, which he did in the following manner: he obtained in all 2180 out of the possible 3750 marks, the minimum fixed for success being 1650; and in Mathematics, out of a possible 1500, he gained 871 marks, thus fulfilling the second condition which requires either 750 marks in Mathematics or 900 in Classics. Indeed it was by 3 marks only that he failed to achieve the number required in Classics as well as in Mathematics.

On opening the envelope it was found that the motto "Finis coronat opus" distinguished the papers of—

MANASSEH FEARNLEY, A.A. 1866.

who, therefore, is entitled to a Tasmanian Scholarship for 1868.

A detail of the marks obtained by the Candidates is appended.

22nd September, 1868.

M. H. IRVING, *M.A., Examiner.*

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## EXAMINATION FOR TASMANIAN SCHOLARSHIPS.—SEPTEMBER, 1868.

TABLE OF MARKS.

	VALUE.	" <i>Finis coronat opus.</i> "	" <i>Labor omnia vincit.</i> "	" <i>Nil mortalibus arduum.</i> "	" <i>Qualis ab incepto.</i> "
<b>MATHEMATICS.</b>					
I. Arithmetic and Algebra .....	375	194	115	55	122
II. Geometry and Trigonometry .....	375	272	136	45	73
III. Analytical Geometry and Conics ...	375	215	95	—	12
IV. Differential Calculus and Natural Philosophy.....	375	190	229	—	43
<i>Total</i> .....	1500	871	575	100	250
<b>CLASSICS.</b>					
I. Greek Authors .....	300	194	136	51	33
II. Latin Authors .....	300	226	144	56	54
III. Greek Composition .....	215	120	61	36	16
IV. Latin Composition .....	235	123	62	110	26
V. General Questions .....	250	132	46	24	48
VI. Ancient History .....	200	102	27	—	32
<i>Total</i> .....	1500	897	476	277	209
<b>MODERN LANGUAGES AND HISTORY.</b>					
I. The English Language.....	250	149	104	47	55
II. The French Language .....	250	123	27	91	95
III. Constitutional History .....	250	140	100	40	16
<i>Total</i> .....	750	412	231	178	166
<b>GRAND TOTAL</b> .....	<b>3750</b>	<b>2180</b>	<b>1282</b>	<b>555</b>	<b>625</b>

M. H. IRVING, M.A., *Examiner.*

## TASMANIAN COUNCIL OF EDUCATION.

## EXAMINATION FOR THE TASMANIAN SCHOLARSHIPS.—SEPTEMBER, 1868.

TUESDAY, 15TH SEPTEMBER. 9 A.M. to 1 P.M.

**Mathematics.—I.**

## ARITHMETIC AND ALGEBRA.

1. Calculate by practice the cost of 789 acres 3 roods and 15 perches of land at £7 13s. 9½d. per acre. Verify your answer by working out the result by decimals.
2. What are the exact times between 7 and 8 o'clock at which the hour and the minute hand are (a) exactly coincident in direction, (b) exactly at right angles to each other?
3. A room is 14 ft. 9 in. high, two sides are each 16 ft. 8 in. long, and the other two are each 22 ft. 11 in. Deduct for two windows 8 ft. 6 in. by 4 ft. 3 in.; and for two doors 9 ft. 3 in. by 4 ft. 1 in., and a fireplace 4 ft. 2 in. by 4 ft. 2 in., and round the remainder of the room a skirting board 10½ inches high. Find the area of the walls, and the cost of papering them at 8½d. the square yard.
4. Divide 72.36 by .00036. Prove the rule for placing the decimal point in your answer.
5. A merchant bought goods for £1700 cash, and sold them immediately for £2100 to be paid in 9 months. Find his gain in ready money, discount being 8 per cent.

6. A cistern is to hold 1200 gallons, and is to be 3 feet deep. A gallon is 277·274 cubic inches. Find (a) the length of each side supposing the cistern square, (b) the radius supposing it round.
7. Prove the rule for pointing in the extraction of the cube root.  
Extract the cube root of 4816·36 to two places of decimals, and explain the reasons for the steps you take.
8. State and prove the Rule for finding the Greatest Common Measure of two quantities: and find the G. C. M. of  $3a^6 + 15a^5b - 3a^3b^2 - 15a^2b^3$ , and  $10a^5 - 30a^4b - 10a^2b^2 + 30ab^3$ .
9. Resolve into elementary factors  $a^6 - x^6$ , and  $9x^2y^2 - 2xy^3 - 6y^4$ .
10. Investigate a formula for the sum of an infinite decreasing geometrical series.  
Shew how this is involved in the rule for reducing to a vulgar fraction such a decimal as ·153̄.
11. Find two numbers such that their sum shall be equal to the difference of their squares.
12. £100 a year remains unpaid for 30 years. Find the amount due at the end of the time, reckoning 8 per cent. compound interest.
13. A throws two dice, B four, and C six. Compare the chances of A's throwing one six, B's throwing two sixes, and C's throwing three sixes.
14. Prove that the square of any odd number greater than 1, diminished by 1, is divisible by 8.
15. Shew how a quadratic surd may be converted into a continued fraction; and find three convergents to  $\sqrt{7}$ .
16. Find the general term of the following series:—  
 $1 + 5 + 13 + 29 + 61 + \&c.$ , and find the value of 10 terms of it.
17. Solve these equations—

$$(1.) \sqrt{x} + \sqrt{x - \sqrt{1 - x}} = 1.$$

$$(2.) \frac{3}{1 + \sqrt{x}} + \frac{3}{1 - \sqrt{x}} = 4.$$

$$(3.) \begin{cases} (x + 5)(y + 7) = (x + 1)(y - 9) + 112; \\ 2x + 10 = 3y + 1. \end{cases}$$

$$(4.) \frac{x}{2} - \frac{\frac{1}{2}(2x - 3) - \frac{1}{4}(3x - 1)}{\frac{1}{2}(x - 1)} = \frac{3}{2} \cdot \frac{x^2 - \frac{1}{3}x + 2}{3x - 2}$$

18. Solve the following equations—

$$(1.) \sqrt{x} - \frac{8}{x} = \frac{7}{\sqrt{x} - 2}$$

$$(2.) 11x^2 - 9x = 11\frac{1}{4}$$

$$(3.) \frac{\sqrt{a^2 - x^2} - \sqrt{b^2 + x^2}}{\sqrt{a^2 - x^2} + \sqrt{b^2 + x^2}} = \frac{a}{b}$$

$$(4.) \begin{cases} x^4 + y^4 = 272 \\ x - y = 2 \end{cases}$$

$$(5.) (x - 3)(x - 4)(x - 5)(x - 6) = 24$$

$$(6.) \begin{cases} \frac{y}{x} - \frac{x}{x + y} = \frac{x^2 - y^2}{y} \\ \frac{x}{y} - \frac{x + y}{x} = \frac{y}{x} \end{cases}$$

TUESDAY, 15TH SEPTEMBER. 2 to 5·30 P.M.

**Classics.—I.**

LATIN COMPOSITION.

1. Translate into Latin Prose in the style of Livy—

In the arduous task which Claudius had undertaken, of restoring the empire to its ancient splendour, it was first necessary to revive among his troops a sense of order and obedience. With the authority of a veteran commander, he represented to them, that the

relaxation of discipline had introduced a long train of disorders, the effects of which were at length experienced by the soldiers themselves; that a people ruined by oppression, and indolent from despair, could no longer supply a numerous army with the means of luxury, or even of subsistence; that the danger of each individual had increased with the despotism of the military order, since princes who tremble on the throne will guard their safety by the instant sacrifice of every obnoxious subject. The emperor expatiated on the mischiefs of a lawless caprice, which the soldiers could only gratify at the expense of their own blood; as their seditious elections had so frequently been followed by civil wars, which consumed the flower of the legions either in the field of battle, or in the cruel abuse of victory.

2. Translate into Latin Hexameters—

So that the deep transported mind may soar  
 Above the wheeling poles, and at heaven's door  
 Look in, and see each blissful Deity  
 How he before the thunderous throne doth lie,  
 List'ning to what unshorn Apollo sings  
 To the touch of golden wires, while Hebe brings  
 Immortal nectar to her kingly sire;  
 Then passing through the spheres of watchful fire,  
 And misty regions of wide air next under,  
 And hills of snow, and lofts of piled thunder,  
 May tell at length how green-eyed Neptune raves,  
 In heaven's defiance mustering all his waves.

Or,

2. Translate into Elegiacs—

Of old sat Freedom on the heights,  
 The Thunders breaking at her feet,  
 Above her shook the starry lights,  
 She heard the torrents meet.  
 In her own place she did rejoice  
 Self-gather'd in her prophet-mind,  
 Yet fragments of her mighty voice  
 Came rolling down the wind.  
 Then stept she down, through town and field  
 To mingle with the human race,  
 And, part by part, to man reveal'd  
 The brightness of her face.

3. Give a full explanation of the name Populus Ennianus.
4. Trace the history of Satire at Rome.
5. State what you know of the life and writings of Catullus, Lucretius, and Nævius.
6. State fully and clearly the principal rules for converting Oratio Recta into Oratio Obliqua, and construct a passage in both forms to exemplify your answer.

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WEDNESDAY, 16TH SEPTEMBER. 9 A.M. to 1 P.M.

**Mathematics.—II.**

GEOMETRY. GEOMETRICAL CONICS. TRIGONOMETRY.

1. Prove that if any side of a triangle be produced the exterior angle is equal to the two interior and opposite angles: and that the three interior angles of every triangle are together equal to two right angles.  
 State the first corollary to this proposition. Hence deduce the ratio between the interior angle of a regular hexagon and that of a regular octagon.
2. Prove that in a right-angled isosceles triangle, the lines drawn from any angle to the opposite angles of the square described on the opposite side are all equal.
3. If a straight line be divided into any two parts the square on the whole line is equal to the squares on the two parts together with twice the rectangle contained by the parts.  
 If the sum of the complements is equal to the sum of the squares on the two parts, prove that the line is bisected.

4. Describe an isosceles triangle having each base angle double of the vertical angle.

Hence divide a right angle into five equal parts.

5. Describe a circle passing through a given point and touching a given straight line in a given point.
6. The exterior angle of a triangle is bisected by a straight line which meets the opposite side produced. State and prove the consequent Theorem.
7. Prove that if a straight line be perpendicular to each of two straight lines at the point of their intersection, it is also perpendicular to the plane in which they both lie.
8. Give the general definition of the ordinate and the abscissa in the parabola. Prove that the square of a semiordinate of the diameter at any point is equal to four times the rectangle under the focal distance of the point and the abscissa.
9. Define an ellipse. Draw an ellipse, and define and indicate in your figure the foci, the centre, a diameter, the axes, the vertices, the latus rectum, the directrix, conjugate diameters.
10. Prove that if in the ellipse  $CD$  be a semidiameter conjugate to  $CP$ ,  $CP$  is conjugate to  $CD$ .
11. Prove that in the hyperbola the perpendiculars from the foci on the tangent intersect the tangent in the circumference of a circle having the axis major for diameter.
12. Prove that, if a right cone is cut by a plane meeting the cone on both sides of the vertex, the section is an hyperbola.
13. Find the number of degrees, minutes, and seconds in the angle subtended at the centre of a circle by an arc equal in length to the radius.

Find the diameter of a globe if an arc of the meridian of  $34^\circ$  is 6 feet long.

14. Prove that  $\text{chord}^2 A = \text{vers}^2 A + \sin^2 A = 2 - 2 \cos A$ .

$$\text{and that } \frac{\cos^2 A - \cos^2 B}{\cos^2 A \cos^2 B} = \tan^2 A - \tan^2 B.$$

$$\text{and that } \cos A (1 - \tan 2 A \tan A) = \cos 3 A (1 + \tan 2 A \tan A).$$

15. Find the sines and the cosines of  $18^\circ$  and  $15^\circ$ .

$$\text{Hence prove that } \sin 3^\circ = \frac{1}{8} \left\{ (1 - \sqrt{3}) \sqrt{5 + \sqrt{5}} + (1 + \sqrt{3}) (\sqrt{3} - \sqrt{5}) \right\}$$

16. State the formulæ for solving a triangle when  $a$ ,  $b$ , and  $A$  are given. Explain clearly in what cases there is but one triangle, and when there may be two.

Ex. :  $a = 157$  yards,  $b = 139$  yards,  $A = 57^\circ 40'$ . Solve the triangle and find its area in acres, roods, and perches.

17. Find the distance between the centres of the circles inscribed in and described about a given triangle in terms of the radii.
18. The summits of two mountains are observed to be in the same line and due east of the observer. After travelling  $9\frac{1}{2}$  miles to the south east, he observes them again and finds that one bears due north and the other north east from him. Find the distance in miles from summit to summit accurately to four places of decimals.

WEDNESDAY, 16<sup>TH</sup> SEPTEMBER. 2 to 5 P.M.

### **Constitutional History of England.**

1660—1688.

1. What was the doctrine of the Royalist Lawyers as to the acts of the Convention Parliament? How was this view of great practical importance?
2. On what grounds does Hallam condemn the Execution of Vane?
3. "Assure yourselves, if I should think otherwise, I would never suffer a Parliament to come together by the means prescribed by that Bill." Whose declaration was this, and when made? Describe the past enactments to which it referred, and the subsequent legislation to which it led.

4. What is the principle of "the appropriation of supplies?" Under what circumstances did it first become an accepted constitutional principle in England, and what previous instances were there of its earlier application? To what further measures on the part of the Commons did it lead?
5. What was the date of Clarendon's fall? Name some of the articles of impeachment against him. Give Hallam's estimate of him as a statesman.
6. "This memorable transaction may be reckoned as the first act of a drama which ended in the Revolution." Detail the transaction which is thus characterized by Hallam.
7. When was Danby impeached? What great constitutional principle was established by this impeachment? Three important questions arose out of it. Explain them briefly, and give Hallam's decision upon them.
8. Who was Sir Edmonbury Godfrey? What are the circumstances of his death? What various hypotheses are there regarding it, and what are the difficulties of each?
9. When were the names Whig and Tory first used of English political parties? What were the great questions which then made the distinction broad and intelligible?
10. "A commoner cannot be impeached for high treason." Mr. Hallam calls this dictum of Blackstone inadvertent. Under what circumstances was the question raised in Charles II.'s reign? What previous precedents were there, and how and when was it finally decided?
11. On what grounds was the charter of the City of London declared forfeited? What was the real object of this attack on the Corporations?
12. "The Habeas Corpus Act introduced no new principle, and conferred no new right on the subject." Explain this statement of Hallam's, and shew what the benefits of this Act were. How long had it been under discussion, and when did it pass?
13. What was the question between the two Houses as to money bills? What were the two occasions on which it arose in Charles II.'s reign? How has it been settled?
14. What are the four theories as to the right of the franchise in boroughs?
15. What does Hallam urge in support of the 'justice and necessity' of the Revolution of 1688?
16. Narrate briefly the proceedings of the Convention.
17. What were the main provisions of the following, and when were they passed—The Test Act, the Exclusion Bill, the Licensing Act, the Conventicle Act?
18. What do you know of the following persons in connexion with the history of England:—Barillon, Coleman, Hales, Plunket, Shaftesbury, Skinner?

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THURSDAY, 17<sup>TH</sup> SEPTEMBER. 9 A.M. to 1 P.M.

**Mathematics.—III.**

ANALYTICAL TRIGONOMETRY AND ANALYTICAL GEOMETRY.

1. Explain generally the mode of construction of Trigonometrical Tables. State the various theorems and formulæ involved.
2. Find  $\theta$  from the equation  $\cos \theta \cos 3\theta = \cos 5\theta \cos 7\theta$ .
3. State and prove the Exponential Theorem. Point out and justify any assumption made in your proof.
4. State the values of  $\sin a$  and  $\cos a$  in series of powers of  $a$ .  
Hence deduce the Exponential values of  $\sin a$  and  $\cos a$ ; and prove that if  $\sin x = n(\sin x + a)$ ,  $x = n \sin a + \frac{n^2}{2} \sin 2a + \frac{n^3}{3} \sin 3a + \&c.$
5. Find an expression for  $\cos^n a$  in cosines of multiples of  $a$ , hence deduce an expression for  $\cos^3 a$ .
6. Prove that  $\frac{1}{\cos \theta + \cos 3\theta} + \frac{1}{\cos 3\theta + \cos 5\theta} + \frac{1}{\cos 5\theta + \cos 7\theta} \dots$  to  $n$  terms =  $\frac{1}{2} \operatorname{cosec} \theta (\tan (n+1)\theta - \tan \theta)$

7. What points on the axis of  $x$  are at a perpendicular distance  $a$  from the line  $\frac{x}{a} + \frac{y}{b} = 1$ .
8. Find the polar equation to the straight line. Draw the line  $l = \cos\left(\theta - \frac{\pi}{4}\right)$
9. Find the locus of the vertex of a triangle, if the base be given, and the difference of the base angles be constant.
10.  $ABCDEF$  is a regular hexagon. Take  $AB$  as the axis of  $x$ , and  $AT$  perpendicular to  $AB$  as that of  $y$ , find the equations to the lines  $AC$  and  $BF$ .
11. Find the tangent to the angle between the lines  $y = mx + c$ ,  $y = m, x + c$ . Hence deduce the conditions which must subsist between the constants in order that they may be parallel, and at a distance  $d$  from each other.
12. Turning the axes through  $\tan^{-1}2$ , find the new value of  $4xy - 3x^2 = a^2$ .
13. Define the subtangent in a conic section.  
Find the length of the subtangent in the circle. What condition must subsist in order that it may be infinite or  $r$ , and what in each case is the position of the tangent?
14. Prove that in the ellipse the normal bisects the angle between the focal distances.
15. Shew that in the parabola the portion of the tangent intercepted between the directrix and the point of contact subtends a right angle at the focus.
16. The focus of an ellipse is the common focus of two parabolas whose vertices are at the end of the axis major. Prove that these parabolas will intersect at right angles, and that the distance between the points of intersection is twice the minor axis.
17.  $P$  is any point on an ellipse. Join  $A$  the vertex to  $Q$  the middle point of  $HP$ . Shew that the locus of  $R$  the point in which  $AQ$  meets  $SP$  is an ellipse.
18. Prove that the term containing  $xy$  may always be eliminated from the general equation of the second degree by changing the direction of the axes.  
Find the new axes to which the equation  $xy = a^2$  must be transformed and write down the new equation.

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THURSDAY, 17<sup>TH</sup> SEPTEMBER. 2 to 5 P.M.

**English,**

1. Analyse the following—

The habit of thorough investigation into the meaning of words, and of exact discrimination in the use of them, is indispensable to precision and accuracy of thought; and it is surprising how soon the process becomes spontaneous, and almost mechanical and unconscious, so that one often finds himself making nice and yet sound distinctions between particular words which he is not aware that he has ever made the subject of critical analysis. The subtle intellect of the Greeks was alive to the importance of this study; and we not only observe just discrimination in the employment of language in their best writers, but we not unfrequently meet with discussions as to the precise signification of words, which show that their exact import had become a subject of thoughtful consideration before much attention had been bestowed upon grammatical forms.

2. Name every phrase in the preceding, and indicate its precise relation to the word or words on which it depends.
3. Discriminate the words of the first sentence of the preceding according to their origin into English, Latin, and Greek, and indicate briefly their derivations.
4. Discuss fully the grammatical structure of these sentences—
  - (a) Let me have about me  
Sleek-headed men, and such as sleep o' nights. SHAKESPERE.
  - (b) Iris there  
Waters the odorous banks, that blow  
More colours than her scarf can show. MILTON.
  - (c) He had been denied admittance. GIBBON.

5. When did the Danes first obtain a settlement in England? What part of England did they principally occupy? What traces of Danish influence in the English language can you mention?
6. "The earlier the stage of a given language is, the greater the amount of its inflectional forms, and the converse." Whose proposition is this, and how is its absurdity shewn by Marsh?
7. Give Marsh's explanation of the following old forms:—*nerechi*, *nyle*, *sithence*, *goddilge*.
8. Discuss the etymology of the principal Latin and English words relative to books (*e.g.* volume, paper, vellum, liber, book, &c.)
9. Shew by examples that there are two different words of distinct meaning represented in English by such a form as building.
10. Shew by examples how the English *half* has been in compounds replaced by a Greek, a Latin, a French, or an Italian equivalent, and give the etymologies of these substitutes.
11. Decline throughout the Anglo-Saxon pronoun *se*, *seo*, *thæt*. What portions of its declension are still preserved in the Language? and with what modifications?
12. *Clove*, *clave*, *Sung*, *sang*, *Ran*, *run*. Can you give any explanation of these double forms in English?
13. "Be pleased then  
To pay that duty which you truly owe  
To him who owes it."  
Explain this passage: discuss and illustrate the history of the verb to owe, and its variations of meaning.
14. "Why is it that the Gothic Languages have always possessed a past tense, never a future?" Explain the meaning of this, and account for the English use of *shall* and *will*, and the German use of *werden* as denoting a future.
15. "Interjections are sometimes syntactical." Explain and illustrate this statement.
16. Discuss the etymology of the words italicized in the following:—
  - (a) Who you are is out of my *welkin*; I might say, *element*.
  - (b) I said an older *soldier* not a *better*.
  - (c) In youth he learned had a good *mistere*,  
He was a *wel* good *wright*, a *carpentere*.
  - (d) *Mislike* me not for my *complexion*.
  - (e) I will *discharge* it in your *purple-in-grain* beard.
17. Distinguish the root and the forming affix in the following. Illustrate the formation of each, and state the meaning of the affix—*Aboard*, *Bedew*, *Bless*, *Flood*, *Forbid*, *Main*, *Might*, *Sleepy*, *Spinster*, *Withdraw*, *Yclept*.
18. What do you know of the following writers and of their dates:—*Chaucer*, *Dryden*, *Langland*, *Layamon*, *Sidney*, *Spenser*?

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FRIDAY, 18TH SEPTEMBER. 9 A.M. to 1 P.M.

**Mathematics.—IV.**

DIFFERENTIAL CALCULUS AND NATURAL PHILOSOPHY.

1. Explain precisely what is meant by saying that  $\frac{x}{1+x}$  equals unity when  $x$  is infinite, and that  $\frac{\sin \theta}{\theta} = 1$  when  $\theta = 0$ : and define the limiting value of a Function.
2. Find the differential coefficient of  $x^n$ ,  $\sin x$ ,  $\log_a x$ ,  $\tan^{-1}x$ ,  $y^z$ ,  $\log(\sin x)$ .
3. Differentiate  $\frac{x^3}{(1-x^2)^{\frac{3}{2}}}$ ,  $\log(e^x + e^{-x})$ ,  $x + \log \cos\left(\frac{\pi}{4} - x\right)$ ,  $\sin^{-1}\sqrt{\sin x}$ ,  
 $\log \frac{\sqrt{1+x} + \sqrt{1-x}}{\sqrt{1+x} - \sqrt{1-x}}$ ,  $\frac{1}{x} + \frac{3}{x^2} + \frac{3}{x^3}$ ,  $(3x^2 - 2a^2)(a^2 + x^2)^{\frac{3}{2}}$ ,  $(2+x^2)\sqrt{1-x^2}$ .

4. Find the second differential coefficient of  $\sec 2x$ , the second of  $\frac{(1-x+x^2)^2}{1+x^2}$ , the second of  $e^{2\sqrt{x}}$ , the fourth of  $xe^x$ , the third of  $\frac{1+x}{1-x}$ , and the  $n$ th of  $\sin x$ .
5. State the proposition known as the Parallelogram of Forces.  
Give Goodwin's Proof for direction, (a) for commensurable, (b) for incommensurable forces.
6. Describe fully the principle of the common balance. State the conditions of a good balance. Explain clearly why the greater weight in one scale does not continue to descend; and how with unequal weights a position of equilibrium is attained.
7. Find the centre of gravity of a pyramid on a triangular base.  
Hence determine the centre of gravity of a solid cone.
8. If a corner of a triangle equal to one fifth of its area be cut off by a line parallel to the opposite side, find the centre of gravity of the remaining figure.
9. If the angle of a rough plane be  $30^\circ$ , and the coefficient of friction be .6, prove that it will be easier to lift a weight than to drag it up by a cord parallel to the plane.
10. State in the screw the ratio of the power to the weight when there is equilibrium. If the cylinder be 4 inches diameter, the weight 200 lbs., the power 6 lbs. acting on a three feet arm: find the inclination of the thread to the horizon.
11. Explain the meaning of the equation  $s = \frac{ft^2}{2}$ ; and Goodwin's two proofs of it.
12. Determine generally the relation which must subsist between the velocity and the angle of projection in order that a projectile may strike a given point.  
Ex.: Let the angle of projection be  $30^\circ$ , the vertical height of the point above the point of projection be 30 feet, and the horizontal distance 600 yards: find the needful initial velocity.
13. Explain the construction of the Centrifugal Railway. Neglecting friction, and supposing the arc circular, determine the height down which a descent must be made in order that the passage of the concave portion may be safe.
14. A body has fallen 50 feet, when a second is projected vertically downwards from the same point, and overtakes the first in 10 seconds. Find the velocity of projection of the second.
15. A ball of elasticity  $\frac{1}{2}$  impinges on the middle point of the side of a square of 16 feet at an angle of  $60^\circ$  with the side. Find the point at which it will strike the next side of the square and its velocity after the second impact, the velocity at the first being 30 feet per second.
16. Calculate a formula connecting the different heights of stations with the difference of readings of the Barometer.  
What will be the difference of elevation between two points  $A$  and  $B$  at which the readings are 30 inches and 29.65 respectively.
17. Explain the principle of the siphon. Shew how by it the action of intermittent springs may be explained.
18. One body weighs 10 lbs. in air, and another 5 lbs. in water. Their volumes are 8 and 72 cubic inches respectively: compare their specific gravities; a cubic foot of water weighing 1000 ounces, and the specific gravity of air being .00125.

FRIDAY, 18TH SEPTEMBER. 2 to 5 P.M.

*French.*

1. Explain the negative forms *ne - pas*, *ne - point*, *ne - rien*, *ne - que*, used in French.
2. State clearly and illustrate by examples the rule for inflecting the past participle in the compound tenses of an active verb.
3. Write down throughout the imperative of *acquérir*, the present indicative (negative and interrogative) of *s'asseoir*, the preterite indicative of *mourir*, the conditional of *savoir*, the imperfect subjunctive of *vaincre*, and the present subjunctive of *vouloir*.

4. Distinguish between *je suis allé, j'ai été* : *ce mot a passé, ce mot est passé* : *ce mot m'a échappé, ce mot m'est échappé*.
5. What termination in French expresses the *-ish* of the English *reddish*? Give, with examples, some of the modes of forming diminutive nouns in French.
6. Verbs in the infinitive are connected with their governing verbs in three ways in French : state and exemplify these, and so far as you can discriminate the principle of their employment.
7. Give the French for the following :—
  - (1.) He is richer than he was four years ago.
  - (2.) What you propose now is worse than what was proposed yesterday evening.
  - (3.) If you have not yet given them to him, give me some to-day to take to his house.
  - (4.) It is tiresome for him that his best friends should be in the country, when he wants them in town to help him.
8. What Latin tense is generally represented by the preterite definite of the derived French verb? Prove your answer by reference to *aimer* and some of the irregular verbs.
9. Translate into English—

Le Conseil d'État s'assembla en hâte pour délibérer sur les mesures à prendre contre un tel acte de rébellion. Il y avait deux partis dans le Conseil ; les plus modérés n'osaient parler que du danger de l'entreprise ; Scott les combat et les ramène : " Monk, dit-il, s'est prononcé contre l'insolence de la Cité, et a déclaré qu'il défendrait le parlement." Invité à se rendre au conseil, Monk y trouve l'affaire décidée, et les ordres de contraindre la Cité à l'obéissance déjà signés et adressés aux sept commissaires préposés au gouvernement de l'armée. Il n'avait que le choix de laisser exécuter la mesure par quelque autre et de s'annuler, ou de la combattre et de se compromettre, ou de s'en charger et de demeurer le maître. Soit instinct, soit combinaison, il se range avec les plus emportés, exagère la nécessité des actes de rigueur, offre de tout faire, et répond du succès. Enfin, on convient qu'il entrera le lendemain avec son armée dans la Cité, pour abattre les portes et les herses, enlever et briser les chaînes qui ferment les rues, ainsi que les poteaux qui servent à les attacher, faire arrêter onze des membres les plus prononcés et les plus influents du Conseil commun, et se loger avec ses troupes dans la Cité, jusqu'à ce qu'elle soit revenue à l'obéissance. Il rentre à deux heures du matin chez lui, où ses amis domestiques l'attendaient dans les plus vives inquiétudes. Quelques jours auparavant, on était venu les avertir que le fils de Scott avait confié à l'homme chez lequel il logeait un projet formé, et près d'éclater, pour faire mettre Monk à la Tour et lui intenter un procès criminel, au moyen duquel on se serait promptement défait de lui. Ses amis le croyaient perdu, lorsqu'en le voyant revenir leur chagrin changea bientôt d'objet. Consternés de l'ordre que Monk a reçu et de la résolution qu'il a prise de l'exécuter, vainement cherchent-ils à l'en dissuader ; il demeure inflexible, se retire pour échapper à leurs importunités, et venait de se mettre au lit lorsque ceux des conseillers d'État qui avaient, comme lui, refusé le serment d'abjuration, arrivent pour le détourner de son projet. Profitant de l'heure avancée, il les écoute à peine, et ils sont obligés de se retirer.

10. Translate and explain fully, as to construction and meaning,—
  - (1.) On lui demanda ce qu'il allait faire.—Prendre, dit-il, la mesure d'un habit.—Quoi ! avec une bêche et une pioche?—Oui.
  - (2.) Ils se décidaient rarement à quitter avant le terme le drapeau auquel ils avaient loué pour un temps leur courage.
  - (3.) On y conserve encore dans une caisse de bois et revêtue de son armure l'effigie qui servit à ses funérailles.
  - (4.) Cromwell avait imprudemment engagé son armée dans un terrain resserré entre la mer et les collines qu'occupait l'ennemi.
  - (5.) Mais qu'avait à faire cette corneille au milieu d'une bande d'oiseaux de proie ?
  - (6.) Si vous et les vôtres vous avisez de vouloir abattre, j'abattraï aussi de mon côté.
11. Give the meaning and the derivation of the following common French words :—*Alors, assez, autant, beaucoup, encore, enfin, hors, lendemain, mais, même*.
12. Give the derivation and illustrate the formation of the following :—*Cheval, droit, échauffer, fâcher, gré, Noël, prêt, pousser, roi, ville*.
13. Give the meanings of *conte, croit, des, doux, parti, peu, sort, sourit, suit, très*. Write down with their meanings words similarly sounded but differently spelt.
14. Give the French for—the arrears of pay, the eldest son, a hearth, a snare : obstinate, overthrown : to exhaust, to favour, to frighten, to rally.

15. Give the English of—s'aboucher, confiture, congédier, élu, entraves, épargner, escouade, naguère, pavillon, trêve.

16. Translate into English—

Une heure après, on commençait à voir clair dans le dommage et à rétablir un peu d'ordre dans les bâtiments épargnés; monsieur Servais remerciait avec effusion tous ceux qui lui avaient apporté un si énergique secours, serrait la main aux magistrats, aux prêtres et aux bons Frères, et ordonnait qu'on mît tout le vin de sa cave à la disposition des travailleurs, lorsqu'un des gendarmes amena par le collet un homme qui se débattait vainement sous son robuste poignet. Monsieur Servais le reconnut à l'instant, malgré sa blouse déchirée, sa casquette enfoncée sur ses yeux et sa figure noire de suie et de fumée. C'était Janrin, le plus violent des ouvriers qui lui avaient fait sa première ovation démocratique, qui avaient ensuite demandé une augmentation de paie et répondu à son refus pas d'atroces menaces. Le rapport du gendarme fut bref et significatif: il venait de surprendre Janrin sautant de la fenêtre d'un grenier attenant à la fabrique: il y avait été repoussé par les flammes, pendant qu'il essayait de s'introduire dans la chambre du régisseur, où il espérait trouver de l'argent. Il aurait pu alléguer quelque prétexte valable; mais, à peine échappé au feu, à demi fou de frayeur, et troublé d'ailleurs par la vue de cet uniforme dont on connaît l'effet immanquable sur les consciences chargées, il avait balbutié, s'était démenti, et avait fini par laisser pressentir des aveux d'une gravité telle, que le gendarme, sans lui en demander davantage, l'avait empoigné et le conduisait au procureur du roi;—lequel, convaincu déjà que le sinistre devait être imputé à la malveillance, se préparait à commencer son enquête.

17. Translate into French—

An event was now impending which was to shake Europe to its foundations. To all outward appearance France was in a most prosperous condition. She was at peace with all Europe; she had achieved a triumph over England, her ancient rival, by helping to emancipate her rebellious colonies; yet she was herself on the brink of a terrible convulsion. To trace the causes, or to detail the events, of the French revolution, comes not within the scope of this book; and we shall here confine our view to those results which, from the vicinity of the two countries, and the constant intercourse between them, could not fail to produce a great effect in England. The French had been regarded in England as the slaves of an absolute monarch, and the first efforts of the revolution were looked upon by a large number of persons in this country as the first steps towards a system of constitutional freedom. The storming of the Bastille was almost as much applauded in London as in Paris. But the burnings, the plundering, the murders which ensued, by which the politest nation in the world seemed to be degrading itself by acts which would disgrace a horde of savages, soon alienated most English hearts.

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SATURDAY, 19TH SEPTEMBER. 9 to 1 P.M.

Classics.—II.

SOPHOCLES—Œd. Col. HOMER—Iliad, Book VI. THUCYDIDES—Book III. HERODOTUS—Thalia.

1. Translate, with such brief notes as you may consider necessary to explain your rendering, the following passages:—

(a) ὦ πάντα τολμῶν κἀπὸ παντὸς ἂν φέρων  
 λόγου δικαίου μὴ χάνημα ποικίλον,  
 τί ταῦτα πειρᾷ κἀμὲ δεύτερον θέλεις  
 εἰλεῖν, ἐν οἷς μάλιστ' ἂν ἀλγοῖν ἄλους;  
 πρόσθεν τε γάρ με τοῖσιν οικείοις κακοῖς  
 νοσοῦνθ', ὅτ' ἦν μοι τέρψις ἐκπεσεῖν χθονός,  
 οὐκ ἤθελες θέλοντι προσθέσθαι χάριν,  
 ἀλλ' ἠνίκ' ἤδη μεστός ἦν θυμούμενος,  
 καὶ τοῦν δόμοισιν ἦν διαιτᾶσθαι γλυκὸν,  
 τότε' ἐξεώθεις κἀξέβαλλες, οὐδέ σοι  
 τὸ συγγενὲς τοῦτ' οὐδαμῶς τότε' ἦν φίλον·  
 νῦν τ' αὖθις ἠνίκ' εἰσορᾷς πόλιν τέ μοι  
 ξυνοῦσαν εὐνονν τήνδε καὶ γένος τὸ πᾶν,  
 πειρᾷ μετασπᾶν, σκληρὰ μαλθακῶς λέγων.  
 καίτοι τίς αὐτῆ τέρψις ἄκοντα φιλεῖν,  
 ὥσπερ τις εἶ σοι λιπαροῦντι μὲν τυχεῖν  
 μηδὲν διδοίη μηδ' ἐπαρκέσαι θέλοι,  
 πλήρη δ' ἔχοντι θυμὸν ὦν χηρίζεις, τότε

δωροῖθ', ὅτ' οὐδὲν ἢ χάρις χάριν φέροι  
 ἄρ' ἂν ματαίου τῆσδ' ἂν ἡδονῆς τύχοις ;  
 τοιαῦτα μέντοι καὶ σὺ προσφέρεις ἔμοι,  
 λόγῳ μὲν ἐσθλά, τοῖσι δ' ἔργοισιν κακά.

- (b) Μή μοι οἶνον ἄειρε μελίφρονα, πότνια μήτηρ,  
 Μή μ' ἀπογυιώσης, μένεος δ' ἀλκῆς τε λάθωμαι.  
 Χερσὶ δ' ἀνίπτουσι Διὶ λείβειν αἴθοπα οἶνον  
 "Ἄζομαι" οὐδέ πη ἔστι κελαϊνεφεῖ Κρονίωνι  
 Αἵματι καὶ λύθρῳ πεπαλαγμένον εὐχετάσθαι.  
 Ἄλλα σὺ μὲν πρὸς νηὸν Ἀθηναίης ἀγελείης  
 Ἔρχεο σὺν θυέσσιν, ἀολλίσσασα γεραίας  
 Πέπλον δ', ὅς τις τοι χαριέστατος ἠδὲ μέγιστος  
 Ἔστιν ἐνὶ μεγάρῳ καὶ τοι πολὺ φίλτατος αὐτῆ,  
 Τὸν θεὸς Ἀθηναίης ἐπὶ γούνασιν ἠῦκόμοιο,  
 Καὶ οἱ ὑποσχέσθαι δυοκαίδεκα βούς ἐνὶ νηῷ  
 Ἦνις ἠκέστας ἱερευσέμεν, αἶ κ' ἐλεήσῃ  
 Ἄστυ τε καὶ Τρώων ἀλόχους καὶ νήπια τέκνα,  
 Αἶ κεν Τυδέος υἱὸν ἀπόσχη Ἰλίου ἱρῆς,  
 Ἄγριον αἰχμητῆν, κρατερὸν μήστωρα φόβοιο.  
 Ἄλλα σὺ μὲν πρὸς νηὸν Ἀθηναίης ἀγελείης  
 Ἔρχεο· ἐγὼ δὲ Πάριν μετελεύσομαι, ὄφρα καλέσω,  
 Αἶ κ' ἐθέλῃσ' εἰπόντος ἀκουέμεν· ὥς κέ οἱ αὖθι  
 Γαῖα χάνοι· μέγα γάρ μιν Ὀλύμπιος ἔτρεφε πῆμα  
 Τρωσὶ τε καὶ Πριάμῳ μεγαλήτορι τοῖό τε παισίν.  
 Εἰ κείνόν γε ἴδομι κατελθόντ' Ἀἴδος εἴσω,  
 Φαίην κε φρέν' ἀτέρπου οἴζυος ἐκλελαθέσθαι.

(c) Ἀλκίδα καὶ Πελοποννησίων ὅσοι πάρεσμεν ἄρχοντες τῆς στρατιάς, ἔμοι δοκεῖ πλεῖν ἡμᾶς ἐπὶ Μυτιλήνην πρὶν ἐκπύστους γενέσθαι ὡσπερ ἔχομεν. κατὰ γὰρ τὸ εἶκος ἀνδρῶν νεωστὶ πόλιν ἐχόντων πολὺ τὸ ἀφύλακτον εὐρήσομεν, κατὰ μὲν θάλασσαν καὶ πάνυ, ἢ ἐκεῖνοί τε ἀνέλπιστοι ἐπιγενέσθαι ἂν τινα σφίσι πολέμιον καὶ ἡμῶν ἢ ἀλκῆ τυγχάνει μάλιστα οὔσα· εἶκος δὲ καὶ τὸ πεζὸν αὐτῶν κατ' οἰκίας ἀμελέστερον ὡς κεκρατηκότων διεσπάρθαι. εἰ οὖν προσπέσοιμεν ἄφνω τε καὶ νυκτὸς, ἐλπίζω μετὰ τῶν ἔνδον, εἰ τις ἄρα ἡμῖν ἐστὶν ὑπόλοιπος εὐνους, καταληφθῆναι ἂν τὰ πράγματα. καὶ μὴ ἀποκνήσωμεν τὸν κίνδυνον, νομίσαντες οὐκ ἄλλο τι εἶναι τὸ καινὸν τοῦ πολέμου ἢ τὸ τοιοῦτον, ὃ εἰ τις στρατηγὸς ἐν τε αὐτῷ φυλάσσοιτο καὶ τοῖς πολέμοις ἐνορῶν ἐπιχειροίη, πλεῖστ' ἂν ὀρθοῖτο.

- Οἱ (d) Καὶ τις αὐτὸν ἤρετο ὅ τι θαυμάζοι καὶ ὁπόσοι αὐτῶν τεθνήσκουσιν, οἰόμενος αὖ ὃ ἐρωτῶν εἶναι τὸν κήρυκα ἀπὸ τῶν ἐν Ἰδομέναις. ὃ δ' ἔφη διακοσίους μάλιστα. ὑπολαβὼν δ' ὃ ἐρωτῶν εἶπεν, "Οὐκοῦν τὰ ὄπλα ταυτὶ φαίνεται, ἀλλὰ πλεόν ἢ χιλίων." αὐθις δὲ εἶπεν ἐκεῖνος, "Οὐκ ἄρα τῶν μεθ' ἡμῶν μαχομένων ἐστίν." ὃ δ' ἀπεκρίνατο, "Ἔτι περ γὰρ ὑμεῖς ἐν Ἰδομένη χθὲς ἐμάχεσθε." "Ἄλλ' ἡμεῖς γὰρ οὐδενὶ ἐμαχόμεθα χθὲς, ἀλλὰ πρῶν ἐν τῇ ἀποχωρήσει." "Καὶ μὲν δὴ τούτοις γὰρ ἡμεῖς χθὲς ἀπὸ τῆς πόλεως βοήθησας τῆς Ἀμπρακιωτῶν ἐμαχόμεθα." ὃ δὲ κήρυξ ὡς ἤκουσε καὶ ἔγνω ὅτι ἢ ἀπὸ τῆς πόλεως βοήθεια διέφθαρται, ἀνομιώξας καὶ ἐκπλαγεὶς τῷ μεγέθει τῶν παρόντων κακῶν ἀπήλθεν εὐθὺς ἄπρακτος καὶ οὐκέτι ἀπῆται τοὺς νεκρούς.

(e) Ἐνθαῦτα, εἰκοστῷ μηνί, Ζωπύρῳ τῷ Μεγαβύζου τούτου, ὃς τῶν ἐπτά ἀνδρῶν ἐγένετο τῶν τὸν Μάγον κατελόντων, τούτῳ Μεγαβύζου παιδί Ζωπύρῳ ἐγένετο τέρας τόδε· τῶν οἱ σιτοφόρων ἡμίονων μία ἔτεκε. ὡς δὲ οἱ ἐξαγγέληται, καὶ ὑπὸ ἀπιστίας αὐτὸς ὁ Ζώπυρος εἶδε τὸ βρέφος, ἀπείπας τοῖσι δούλοισι μηδενὶ φράζειν τὸ γεγονός, ἐβουλεύετο. καὶ οἱ πρὸς τὰ τοῦ Βαβυλωνίου ῥήματα, ὃς κατ' ἀρχὰς ἔφησε, ἐπεὰν περ ἡμίονοι τέκωσι, τότε τὸ τεῖχος ἀλώσεσθαι, πρὸς ταύτην τὴν φήμην Ζωπύρῳ ἐδόκεε ἀλώσιμος εἶναι ἤδη ἢ Βαβυλῶν· σὺν γὰρ θεῷ ἐκεῖνόν τε εἰπεῖν, καὶ ἐωυτῷ τεκεῖν τὴν ἡμίονον. Ὡς δὲ οἱ ἐδόκεε μόρσιμον εἶναι ἤδη τῇ Βαβυλῶνι ἀλίσκεσθαι, προσελθὼν Δαρείῳ ἀπεπυνθάνετο, εἰ περὶ πολλοῦ κάρτα ποιεῖται τὴν Βαβυλῶνα ελεῖν. πυθόμενος δὲ ὡς πολλοῦ τιμῶτο, ἄλλο ἐβουλεύετο, ὅπως αὐτὸς τε ἔσται ὁ ἐλὼν αὐτήν, καὶ ἐωυτοῦ τὸ ἔργον ἔσται· κάρτα γὰρ ἐν τοῖσι Πέρσησι αἱ ἀγαθοεργίαι ἐς τὸ πρόσω μεγάθεος τιμῶνται. Ἄλλῳ μὲν νυν οὐκ ἐφράζετο ἔργῳ δυνατὸς εἶναι μιν ὑποχειρίην ποιῆσαι, εἰ δ' ἐωυτὸν λωβησάμενος αὐτομολήσειε ἐς αὐτούς. Ἐνθαῦτα ἐν ἐλαφρῷ ποιησάμενος, ἐωυτὸν λωβᾶται λώβην ἀνήκεστον· ἀποταμῶν γὰρ ἐωυτοῦ τὴν ῥίνα καὶ τὰ ὄτα, καὶ τὴν κόμην κακῶς περικείρας, καὶ μαστιγῶσας, ἦλθε παρὰ Δαρείου.

## 2. Translate and explain fully the following passages :—

- (1.) καὶ τίς ἐστὶ Ἑλλήνων εὐεργέτης ᾧ ἐγὼ προαιδεῦμαι νεωστὶ μὲν τὴν ἀρχὴν ἔχων ;  
 ἀναβίβηκε δὲ τίς ἢ οὐδεὶς κω παρ' ἡμέας αὐτῶν ;

- (2.) ἦν δὲ γυνὴ κάμη, ὡσαύτως αἱ ἐπιχρεώμεναι μάλιστα γυναικες ταυτὰ τοῖσι ἀνδράσι ποιεύσι· τὸν γὰρ δὴ ἐς γῆρας ἀπικόμενον θύσαντες κατεωχέονται.
- (3.) παράνοιχον δὲ φρυκτοὺς πολλοὺς πρότερον παρέσκευασμένους ὅπως ἀσαφῆ τὰ σημεῖα τῆς φρυκτωρίας ἢ τοῖς πολεμοῖσι καὶ μὴ βοηθοῖεν.
- (4.) ἐγένετο σπουδὴ τοῦ πλοῦ τοιαύτη ὥστε ἠσθιὸν τε ἅμα ἐλαύνοντες οἶνω καὶ ἐλαίῳ ἄλφιστα πεφυραμένα, καὶ οἱ μὲν ὕπνον ἠροῦντο κατὰ μέρος οἱ δὲ ἤλαννον.
- 5.) οὐ γὰρ μετὰ τῶν κειμένων νόμων ὠφελίας οἱ τοιαῦται ξύνοδοι, ἀλλὰ παρὰ τοὺς καθεστῶτας πλεονεξίᾳ.
- (6.) Δᾶερ ἐμεῖο κυνὸς κακομηχάνου ὀκρυσέσσης,  
Ὡς μ' ὄφελ' ἤματι τῷ, ὅτε με πρῶτον τέκε μήτηρ,  
Οἴχεσθαι προφέρουσα κακῇ ἀνέμοιο θύελλα  
Εἰς ὄρος ἢ εἰς κῦμα πολυφλοίσβοιο θαλάσσης,  
"Ἐνθα με κῦμ' ἀπόερσε πάρος τάδε ἔργα γενέσθαι.
- (7.) ἄγε νυν σύ με, παῖ,  
Ἴν' ἂν εὖσεβίας ἐπιβαίνοντες  
τὸ μὲν εἴπομεν, τὸ δ' ἀκούσαιμεν,  
καὶ μὴ χρεῖα πολεμῶμεν.
- (8.) ὦ ξεῖνε, μὴ θαύμαζε, πρὸς τὸ λιπαρὸς  
τέκν' εἰ φανέντ' ἄελπτα μηκύνω λόγον.  
ἐπίσταμαι γὰρ τήνδε τὴν ἐς τάσδε μοι  
τέρψιν παρ' ἄλλου μηδενὸς πεφασμένην.  
σὺ γὰρ νιν ἐξέσωσας, οὐκ ἄλλος βροτῶν.

3. Discuss the meaning and the derivation of ἀκροβολίζεσθαι, ἀμφιλαφής, ἀπερείσιος, γνωσιμαχεῖν, δαφιλής, ἐπίσταμαι, εὐήθης, ἐφόρμησις, ζωγρεῖν, κηώδης, παιδοτρόφος, πυκνόςτικτος.
4. Where and what are the following :—Ambracia, Cydonia, Dascylium, Ecbatana, Eridanus, Himera, Lycia, Myconus, Nisæa, Placus ?
5. Εὐβοικὰ τάλαντα μύρια καὶ τετρακισχίλια καὶ πεντάκοσια καὶ ἐξήκοντα. Whose revenue was this? Calculate its amount, and give a brief table of Greek money, with English equivalents.
6. Οἱ Κορίνθιοι καὶ οἱ Κερκυραῖοι αἰεὶ διαφοροὶ ἐόντες ἐωντοῖσι. What was the original relation between Corinth and Corcyra? What feud between them is recorded by Herodotus? To what event and at what date did a subsequent quarrel lead?
7. Give with dates a brief account of (1) The Tearless Battle, (2) The peace of Antalcidas, (3) The Conspiracy of the 400, (4) The battle of Arginusæ.
8. Give some account of the government and constitution of Athens at the time of the Peloponnesian war.
9. With what events of the Peloponnesian war and at what dates are the names of Brasidas and of Demosthenes severally associated?
10. Give a brief account of Alexander's campaigns from the fall of Tyre till his death.
11. What were the Long Walls of Athens? when were they built, and under what circumstances?

MONDAY, 21ST SEPTEMBER. 9 A.M. to 1 P.M.

Classics.—III.

CICERO—Pro Milone. LIVY—Book II. VIRGIL—Second Georgic. HORACE—Epistles, II.

1. Translate, with such brief notes as you judge necessary—

(a) Neve tibi ad solem vergant vineta cadentem ;  
Neve inter vites corulum sere ; neve flagella  
Summa pete aut summa destringe ex arbore plantas ;  
Tantus amor terræ ; neu ferro læde retuso  
Semina ; neve oleæ silvestris insere truncos.  
Nam sæpe incautis pastoribus excidit ignis,  
Qui, furtim pingui primum sub cortice tectus,

Robora comprehendit, frondesque elapsus in altas  
 Ingentem cœlo sonitum dedit; inde secutus  
 Per ramos victor perque alta cacumina regnat,  
 Et totum involvit flammis nemus, et ruit atram  
 Ad cœlum picea crassus caligine nubem :  
 Præsertim si tempestas a vertice silvis  
 Incubuit, glomeratque ferens incendia ventus.  
 Hoc ubi, non a stirpe valent, cæsæque reverti  
 Possunt, atque ima similes revirescere terra :  
 Infelix superat foliis oleaster amaris.

- (b) Poscit opem chorus et præsentia numina sentit,  
 Cœlestes implorat aquas docta prece blandus,  
 Avertit morbos, metuenda pericula pellit,  
 Impetrat et pacem et locupletem frugibus annum.  
 Carmine Dî superi placantur, carmine Manes.  
 Agricolaë prisci fortes parvoque beati  
 Condita post frumenta levantes tempore festo  
 Corpus et ipsum animum spe finis dura ferentem,  
 Cum sociis operum, pueris et conjuge fida,  
 Tellurem porco, Silvanum lacte piabant,  
 Floribus et vino Genium memorem brevis ævi.  
 Fescennina per hunc inventa licentia morem  
 Versibus alternis opprobria rustica fudit,  
 Libertasque recurrentes accepta per annos  
 Lusit amabiliter, donec jam sævus apertam  
 In rabiem cœpit verti jocus et per honestas  
 Ire domos impune minax. Doluere eruento  
 Dente lacessiti; fruit intactis quoque cura  
 Conditione super communi; quin etiam lex  
 Pœnaque lata, malo quæ nollet carmine quemquam  
 Describi; vertere modum, formidine fustis  
 Ad bene dicendum delectandumque redacti.

(c) Me quidem, judices, exanimant et interimunt hæc voces Milonis, quas audio assidue et quibus intersum quotidie. Valeant, inquit, valeant cives mei; sint incolumes, sint florentes, sint beati; stet hæc urbs præclara mihique patria carissima, quoquo modo erit merita de me; tranquilla re publica mei cives (quoniam mihi cum illis non licet) sine me ipsi, sed per me tamen, perfruantur; ego cedam atque abibo; si mihi bona re publica frui non licuerit, at carebo mala, et quam primam tetigero bene moratam et liberam civitatem, in ea conquiescam. O frustra, inquit, mei suscepti labores! O spes fallaces! O cogitationes inanes meæ! Ego, quum tribunus plebis, re publica oppressa, me senatui dedissem, quem extinctum acceperam, equitibus Romanis, quorum vires erant debiles, bonis viris, qui omnem auctoritatem Clodianis armis abjecerant, mihi umquam bonorum præsidium defuturum putarem? ego, quum te (mecum enim sæpissime loquitur) patriæ reddissem, mihi putarem in patria non futurum locum? Ubi nunc senatus est, quem secuti sumus? ubi equites Romani illi, illi, inquit, tui? ubi studia municipiorum? ubi Italiæ voces? ubi denique tua illa, M. Tulli, quæ plurimis fuit auxilio, vox atque defensio? mihine ea soli, qui pro te toties morti me obtuli, nihil potest optulari?

(d) Senatus tumultuose vocatus, tumultuosius consulitur, quæstionem postulantibus iis qui pulsati fuerant, decernente ferocissimo quoque, non sententiis magis, quam clamore et strepitu. Tandem quum iræ resedissent, exprobrantibus consulibus nihilo plus sanitatis in curia, quam in foro esse, ordine consuli cœpit. Tres fuere sententiæ. P. Virginius rem non vulgabat: de iis tantum, qui fidem secuti P. Servilii consulis, Volco, Aurunco, Sabinoque militassent bello, agendum censebat. T. Lartius, Non id tempus esse, ut merita tantummodo exsolventur, totam plebem ære alieno demersam esse: nec sisti posse, ni omnibus consulatur, quin, si alia aliorum sit conditio, accendi magis discordiam, quam sedari. Ap. Claudius, et natura immitis, et efferatus hinc plebis odio, illinc Patrum laudibus, Non miseris, ait, sed licentia tantum concitum turbarum: et lascivire magis plebem, quam sævire. Id adeo malum ex provocatione natum quippe minas esse consulum, non imperium; ubi ad eos, qui una peccaverint, provocare liceat. Agedum, inquit, dictatorem, a quo provocatio non est, creemus. Jam hic, quo nunc omnia ardent, conticescet furor. Pulset tum mihi lictorem, qui sciet jus de tergo vitæque sua penes unum illum esse, cujus majestatem violarit.

2. Translate and explain fully—

- (1.) Orchades, et radii, et amara pausia baca  
 Pomaque, et Alcinoi silvæ; nec surculus idem  
 Crustumis Syriisque piris gravibusque volemis.
- (2.) An memorem portus Lucrinoque addita claustra,  
 Atque indignatum magnis stridoribus æquor  
 Julia qua ponto longe sonat unda refuso  
 Tyrrhenusque fretis immittitur æstus Avernis.

- (3.) Festinat calidus mulis gerulisque redemptor,  
Torquet nunc lapidem, nunc ingens machina tignum,  
Tristia robustis luctantur funera plaustis,  
Hac rabiosa fugit canis, hac lutulenta ruit sus.
- (4.) Licuit semperque licebit  
Signatum præsente nota producere nomen.  
Ut silvæ foliis pronos mutantur in annos,  
Prima cadunt : ita verborum vetus interit ætas  
Et juvenum ritu florent modo nata vigentque.
- (5.) Nisi forte eo mors atrocior erit P. Clodii, quod is in monumentis majorum suorum sit interfectus—hoc enim ab istis sæpe dicitur—proinde quasi Appius ille Cæcus viam muniverit, non qua populus uteretur, sed ubi impune sui posteri latrocinarentur.
- (6.) Iter solenne ante diem XIII. Kal. Feb. Miloni fuit Lanuvium ad flaminem pro-  
dendum.
- (7.) P. Valerius, anno post, moritur, gloria ingenti, copiis familiaribus adeo exiguis ut funeri sumtus deesset. De publico est elatus.
- (8.) Sibi ludis præsultatorem displicuisse, nisi magnifice instaurarentur hi ludi periculum urbi fore.
3. Give fully the meaning and the etymology of *argilla*, *castigare*, *chelydrus*, *eculeus*, *examen*, *obnoxius*, *pullulare*, *rixa*, *rursus*, *sciscitare*, *sequi*, *sermo*.
4. Where and what are the following—*Anticyra*, *Benacus*, *Clanias*, *Cumæ*, *Ephyre*, *Garganus*, *Hernici*, *Ister*, *Oriculum*, *Satricum*, *Thasos*, *Tmolus*?
5. Write brief notes on *Quinquatria*, *prætextæ*, *oscilla*, *morbus regius*, *equestris summa*, *Saturnalia*.
6. Bello cum longa cohortes  
Explicuit legio et campo stetit agmen aperto  
Directæque acies.  
Translate and explain. Give some account of the Roman Legion, and the changes in its formation and array.
7. Extulit hæc Decios, Marios, magnosque Camillos,  
Scipiadas duos bello.  
Give with dates some account of the persons here mentioned, and of their achievements.
8. Septemque una sibi muro circumdedit arces.  
Name the seven hills of Rome. Draw a rough sketch shewing their position and the line of Servius' wall. When were the fortifications of Rome extended and by whom? What were the main Viæ leading from Rome?
9. Unde simul primum me dimisere Philippi.  
Give a brief account of events from the death of Cæsar to this battle.
10. Who were the Shield and the Sword of Rome? How and when did these Generals severally distinguish themselves?
11. Give the dates of the following events in Roman History :—The Social war, the capture of Rome by the Gauls, the Decemviral Legislation, the conspiracy of Catiline, the expulsion of the Kings, the battle of Actium, the appointment of Tribunes of the Commons, the battle of Cynoscephalæ.
12. Occidi non Spurium Mælium, non Tib. Gracchum.  
Give some account with dates of these two persons.

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MONDAY, 21<sup>ST</sup> SEPTEMBER. 2 to 5 P.M.

Classics.—IV.

1. Translate the following—

εἶην ὅθι δαίτων ἀνδρῶν τάχ' ἐπιστροφῆαι τὸν χαλκοβόαν Ἄρη μίξουσιν, ἢ πρὸς Πυθίαις, ἢ λαμπάσιν ἀκταῖς, οὗ πότνια σεμνὰ τιθνοῦνται τέλη θνατοῖσιν, ὧν καὶ χρυσέα κλῆς ἐπὶ γλώσσο βέβακε προσπόλων Εὐμολπιδᾶν· ἐνθ' οἶμαι τὸν ἐγρεμάχαν Θησέα καὶ τὰς διστόλους ἀδμῆτας ἀδελφὰς αὐταρκεῖ τάχ' ἐμίξεν βοᾷ τοῦσδ' ἀνὰ χώρους.

2. Arrange the preceding metrically and discuss the scansion of the several lines.
3. Explain, and, so far as you can, quote, Horace's views as to the duty of the Chorus in a Greek play: and shew briefly how far they are borne out in the *Œdipus at Colonus*.
4. Write notes on the scansion of the following lines:—
  - (a) καὶ μὴ χρεῖα πολεμῶμεν.
  - (b) ἔνθα οἱ ἠπιόδωρος ἐναντίη ἦλυθε μήτηρ.
  - (c) Tenuis ubi argilla et dumosis calculus arvis.
  - (d) Regis opus sterilisve diu palus aptaque remis.
5. To what three types are all the varieties of Latin perfects reducible? Illustrate these so far as you can from Greek and English verbs.
6. What do you take to have been the relations originally denoted by the oblique cases in Greek and in Latin?
 

Hence explain clearly the construction in the following:—

  - (a) dives opum. (b) muros circumdedit urbi. (c) καλλίων πατρός. (d) melior patre. (e) Italiam venit. (f) imprudens laborum.
7. Et si non alium late jactaret odorem  
Laurus erat.  
Explain and illustrate this construction.
8. Explain the idiomatic uses in Latin of *tristior*, with the meanings of somewhat sad, and too sad.
9. Mention six peculiar Greek idioms, and construct an example of each.
10. Explain, and so far as you can illustrate, the principles of euphonic change involved in the formation of these words,—*ἀνδρός*, *ἐπίσω*, *πράσσω*, *κεκμηώς*, *bellum*, *hospes*, *amare*, *bobus*.
11. What are the main peculiarities of the Ionic Greek of Herodotus? Which of them have you retained in the Attic of the Tragedians?
12. Write brief notes on the formation of the following words:—*oscillum*, *ætas*, *stipendium*, *ἀστήρ*, *πλευσοῦμαι*, *ὄδοιπορεῖν*, *πεμφαίαιτο*.
13. What do you take to be the roots involved in the following:—*πάτηρ*, *ἔδρα*, *ἕδωρ*, *ιδεῖν*, *gnosco*, *primus*, *fenus*, *pelagus*? Give the meaning of the roots, and trace their parallel forms in English and Latin or Greek.
14. δ γ' ἐνθάδ' ἄν εἴποι λέως νιν. Translate, with a note on the construction used, and also on the employment of ἄν generally in Greek.

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TUESDAY, 22ND SEPTEMBER. 9 A.M. to 12.30 P.M.

Classics.—V.

GREEK COMPOSITION.

1. Translate into Greek Prose, in the style of Thucydides,—

Confederates, we can no longer accuse the Lacedæmonians, they having both decreed the war themselves, and also assembled us to do the same. For it is fit for them who have the command in a common league, as they are honoured of all before the rest, so also, administering their private affairs equally with others, to consider before the rest of the common business. And though as many of us as have already had our turns with the Athenians need not be taught to beware of them; yet it were good for those that dwell up in the land, and not as we, in places of traffic on the sea-side, to know, that unless they defend those below, they shall with a great deal the more difficulty both carry to the sea the commodities of the seasons, and again more hardly receive the benefits afforded to the inland countries from the sea; and also not to mistake what is now spoken, as if it concerned them not; but to make account, that if they neglect those that dwell by the sea, the calamity will also reach unto themselves; and that this consultation concerneth them no less than us, and therefore not to be afraid to change their peace for war.

## 2. Translate into Greek Iambics—

Thou cam'st a sharer in a herald's office  
 Ensuing peace ; and cloaked in that disguise,  
 With money for thy purposes provided,  
 Thou hast bought treason . This may never pass  
 Unvisited with penalties extreme ;  
 Else what security is mine that faith  
 Is not put up to auction in my camp,  
 'Till each man sell his brother ? Who provokes  
 Treason in others, to a traitor's death  
 Justly condemns himself. Such is thy lot :  
 Yet do I rue the judgment I pronounce,  
 And wish it undeserved.

## 3. ὀρθῶς δοκεῖ μοι Πίνδαρος ποιῆσαι, Νόμον πάντων βασιλεία.

Translate. By whom is this said, and on what occasion ? Give some account of Pindar and his writings.

4. Give some account of the Homeric poems and of the controversy concerning their authorship.
  5. State briefly with dates what you know of these Greek writers,—Archilochus, Aristophanes, Plato.
  6. Give some account of the construction, the mode of production, and representation of a Greek Tragedy in the time of Sophocles, naming when you can the appropriate Greek terms.
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## TASMANIAN COUNCIL OF EDUCATION.

Hobart Town, 11th April, 1867.

## EXAMINATION FOR TASMANIAN SCHOLARSHIPS, 1868.

THE Council of Education have directed the publication of the following Scheme of Examination for the Tasmanian Scholarships for the year 1868.

The Regulations in regard to these Scholarships, together with a List of Subjects and Books which have been adopted by the Council of Education, are subjoined for general information.

By Order of the Council,

MURRAY BURGESS, *Secretary*.

## SCHEME of the Examination for the TASMANIAN SCHOLARSHIPS for the Year 1868.

## I.—CLASSICS.

GREEK.—Thucydides, *Book III.*; Herodotus, *Book III.*; Homer's *Iliad*, *Book VI.*; Sophocles, *Oedipus Coloneus*.

LATIN.—Virgil, *Georgics*, *Book II.*; Horace, *Epistles*, *Book II.*, and *Epistola ad Pisones*; Livy, *Book II.*; Cicero, *Pro Milone*.

Papers will be set for translation from English into Greek and Latin Prose, and from English Verse into Greek and Latin Verse.

ANCIENT HISTORY.—Questions will be given upon the historical and geographical allusions contained in the above-named Greek and Latin Books, and in the philology of the Greek and Latin languages. Candidates will also be examined in Smith's History of Greece and Liddell's History of Rome.

## II.—MATHEMATICS.

Arithmetic; Algebra, except Theory of Equations; Euclid, *Books I. to VI. inclusive, and XI. to the 21st Proposition inclusive*; Plane Trigonometry, including Logarithms; Conic Sections, treated both geometrically and analytically; and Simple Differentiations.

## III.—NATURAL PHILOSOPHY.

Elementary Statics, Dynamics, and Hydrostatics, as treated in Goodwin's Course of Mathematics.

## IV.—MODERN HISTORY.

Hallam's Constitutional History of England, *Reigns of Charles II. and James II.*

## V.—MODERN LANGUAGES.

The grammatical structure of the English Language, and French or German. Candidates may submit themselves for examination in either French or German, at their option.

FRENCH.—Passages will be given from Guizot's *Monk le Général* for translation into English, with questions on the parsing, and the historical and geographical allusions; also a passage from some other French author for translation into English, and from some English author into French.

GERMAN.—Passages will be given from Schiller's *Maria Stuart*, with questions on the parsing, and the historical and geographical allusions; also a passage from some other German author for translation into English, and from an English author into German.

NOTE.—The following values have been affixed to the several subjects of examination:—

1. Classics	-	-	-	-	-	1500	Marks.
2. Mathematics and Natural Philosophy	-	-	-	-	-	1500	"
3. Modern History	-	-	-	-	-	250	"
4. Modern Languages—							
(a.) English	-	-	-	-	250	500	"
(b.) French or German	-	-	-	-	250		
TOTAL	-	-	-	-	-	3750	Marks.

It shall be essential to success that a Candidate gain at least 1650 Marks; of which either 900 shall have been gained in Classics or 750 in Mathematics.

## BOOKS RECOMMENDED.

- History of England, Hallam's Constitutional History, 3 vols., cr. 8<sup>vo</sup>, 18s., Murray.  
 ——— Greece, Student's, Smith, W., 7s. 6d., Murray.  
 ——— Rome, Student's, Smith, W., 7s. 6d., Murray.  
 Arithmetic, Colenso, J. W., 4s. 6d., Longman.  
 Algebra, Colenso, J. W., Parts I. and II., p. 1, 4s. 6d., p. 2, 6s., Longman.  
 ———, Wood, J., edited by Lund, 15th Ed., 12s. 6d., Longman.  
 Trigonometry, Hall, T. G., 7s. 6d., Fellowes.  
 ———, Todhunter, J., 5s., Macmillan.  
 Conic Sections, Analytical, Treatise on Conic Sections, Todhunter, J., 10s. 6d., Macmillan.  
 ———, Geometrical, Goodwin, H., Course of Mathematics, 15s., Deighton, Bell,  
 and Co.  
 Differential Calculus, Todhunter, J., 10s. 6d., Macmillan.  
 Elementary Statics, Dynamics, and Hydrostatics, (Goodwin's Course of Mathematics),  
 see above.  
 Mathematical Tables, 3s., Chambers.  
 Guizot's Monk le Général, 12<sup>mo</sup>, 3s. 6d., Dulau.  
 Student's History of the English Language, Marsh, G. P., 7s. 6d., Murray.

## REGULATIONS FOR THE TASMANIAN SCHOLARSHIPS.

Every Candidate for a Scholarship must, by the provisions of the Act, be above the age of sixteen and under the age of twenty years. He must also have been resident in the Colony for the period of five years next before the time of his examination, and have taken the Degree of Associate of Arts.

By the 14th Section of the Act, the examination for Tasmanian Scholarships must comprise the following subjects:—

1. Classics—Translations from Greek and Latin authors into English, Greek and Latin composition, Ancient History, Philology.
2. Mathematics—Arithmetic, Algebra, Euclid, Plane Trigonometry.
3. Natural Philosophy—Elementary Statics, Dynamics, and Hydrostatics.
4. Modern History—The History of England.
5. The grammatical structure of the English Language, and French or German, at the option of the Candidate.

Every Scholar shall forward to the Secretary of the Council a certificate from the proper authority, testifying to his having become a Member of some University of the United Kingdom; and until such certificate be received by the Secretary to the Council, or by their accredited Agent in Great Britain, the Council will not authorise the payment of the annual value of the Scholarship: provided always, that this condition shall not apply in any case where it has been proved to the satisfaction of the Council that the Scholar has been prevented by sickness or other sufficient cause from entering himself on the books of an University.

The Council will order to be paid by the Secretary, or an accredited agent in Great Britain, quarterly, to the said Scholar, the amount of his Scholarship for the quarter, upon the receipt by their Secretary, or by such accredited agent, of a testimonial from the authorities of the College or University to which he may belong, stating that he is conducting himself diligently and steadily.

In the event of any Tasmanian Scholar not being able to produce such a testimonial for any three months, he shall forfeit the amount to which he would be otherwise entitled for the said three months; and should he fail to do so for twelve months, his Scholarship shall be declared vacant, and he shall have no claim for moneys accruing therefrom: provided always, that this Rule shall not apply to Scholars when they have been incapacitated by illness from attending to their College or University duties.

For the further encouragement of Tasmanian Scholars to prosecute their studies diligently in the University to which they belong, the Council of Education will cause to be published in the Government *Gazette* the names of such as may have obtained Prizes, Scholarships, or Exhibitions, or whose names may have appeared in the "Honour List," together with the description or class of Honour which may have been awarded to them.