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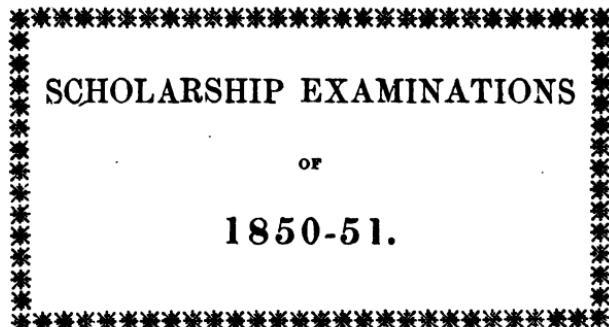


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**SCHOLARSHIP EXAMINATIONS**

**OF THE**

**GOVERNMENT COLLEGES AND SCHOOLS,**

**IN**

**BENGAL,**

**FOR**

**1850-51.**



**CALCUTTA:**

**F. CARBERY, MILITARY ORPHAN PRESS.**

**1852.**



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## SENIOR AND JUNIOR SCHOLARSHIPS ANSWERS.

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# PUBLIC EXAMINATIONS OF 1851.

The papers on the various subjects were prepared by the undermentioned gentlemen:—

## English Scholarships.

### *Senior.*

ENGLISH ESSAY, .....	J. Kerr, Esq., M. A.
RHETORIC, .....	R. Jones, Esq.
LITERATURE PROPER,.....	J. Kerr, Esq., M. A.
HISTORY, .....	H. Woodrow, Esq., M. A.
PURE MATHEMATICS, .....	R. Thwaytes, Esq.
MIXED MATHEMATICS, .....	
VERNACULAR ESSAY, .....	The Rev. K. M. Banerjee.
LATIN ESSAY, .....	H. Woodrow, Esq., M. A.

### *Junior.*

ENGLISH GRAMMAR, .....	A. S. Harrison, Esq., B. A.
HISTORY, .....	G. Lewis, Esq.
GEOGRAPHY, .....	W. Brennand, Esq.
MATHEMATICS, .....	V. L. Rees, Esq.
TRANSLATION,.....	Babu Ramchunder Mitter.
LITERATURE, .....	Dr. F. J. Mouat.

## Arabic Scholarships.

CALCUTTA MUDRISSA, .....	{ Senior and Junior, }	Dr. A. Sprenger.
HOOGHLY MUDRISSA, .....	{ Senior and Junior, }	

## Sanskrit Scholarships.

Senior and Junior: Major G. T. Marshall.

The senior and junior scholarship answers were examined by the gentlemen who set the questions.

The Arabic and Sanscrit scholarship answers were examined by the Principal of the Calcutta Mudriissa and by Major G. T. Marshall.

I. The scholarship examinations of all the Colleges and Schools in Bengal were held upon the dates and at the hours specified below:—

DATES.	SUBJECTS.
1851.	<i>Senior Scholarships. Junior Scholarships.</i>
Wednesday Sept. 17th,..	Literature Proper, .. . . . . Grammar.
Thursday, „ 18th, ..	{ Mental and Moral Philo- } History.
Friday, „ 19th,..	sophy, .. . . . . Mathematics.
Saturday, „ 20th,..	Pure Mathematics, .. . . . Geography.
Monday, „ 22nd,..	Mixed Mathematics, .. . . . Translations.
Tuesday, „ 23rd,..	English Essay,.. . . . Literature.
Wednesday, „ 24th,..	Vern. or Latin Essay.

The examinations were held daily from 10 A. M. to 1½ P. M., and from 2 to 5½ P. M. precisely, at which hours all answers to the morning and afternoon papers, respectively, were given in.

II. The following is the manner in which the examinations are conducted :—

1. Sets of questions on the various branches of study in the senior and junior departments, are prepared by the examiners selected by the Council of Education.

2. In Calcutta one of the members of the Council of Education presides at the examination of each day, in the Mofussil a member of the Local Committee performs the same duty ; each is furnished with copies of the scholarship questions under a sealed cover, with a superscription specifying the subject of the contained paper, and the day on which it is to be opened in the presence of the scholarship candidates.

3. The students assemble in a room without books, papers, or references of any kind, are not allowed to communicate with each other during the examination, and on that account are placed at a proper distance from each other.

4. They are required to answer the questions, and to write the essays without any assistance whatever : to ensure this, one of the members of the Council remains in the room, and superintends the whole examination.

5. Any attempt at, or practice of unfair means, subjects the offending party to a fine of 100 Rs in cases of senior, and 50 Rs. in cases of junior scholarships: non-payment of the fine within one month subjects the offender to exclusion from the Institution till payment, and no offender is capable of then, or again competing for any scholarship.

6. At the hour fixed for the close of each day's examination, every student delivers his answers, signed by himself, to the superintending member of the Council or Local Committee.

7. The examiners fix an uniform standard of value for each question according to its importance. A perfectly correct and complete answer obtains the full number of marks attached to the question ; an imperfect answer obtains a part only of the full number, in proportion to its approximation to correctness and completeness.

8. The award of scholarships is determined in accordance with the rules laid down in the late Hon'ble J. E. D. Bethune's Minute on the subject, published in the Annual General Report of the Council for 1849-50, p. 6.

9. No student, not being already a scholarshipholder, or a free-scholar, is allowed to compete for a scholarship whom the Principal of the College or the Head Master of the School to which he belongs, does not consider competent to attain the requisite standard.

FRED. J. MOUAT, M. D.,

*Secretary to the Council of Education.*

October, 1851.

# SCHOLARSHIP QUESTIONS.

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## SENIOR SCHOLARSHIPS, 1851.

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### Literature Proper.

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*For the Senior Classes—Morning Paper.*

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#### HAMLET.

*Marcellus.* “ ‘Tis gone !  
We do it wrong, being so majestical,  
To offer it the show of violence ;  
For it is, as the air, invulnerable,  
And our vain blows malicious mockery.

*Bernardo.* It was about to speak when the cock crew.

*Horatio.* And then it started like a guilty thing  
Upon a fearful summons. I have heard  
The cock, that is the trumpet to the morn,  
Doth with his lofty and shrill-sounding throat  
Awake the god of day ; and, at his warning,  
Whether in sea or fire, in earth or air,  
The extravagant and erring spirit hies  
To his confine : and of the truth herein  
This present object made probation.

*Marcellus.* It faded on the crowing of the cock.  
Some say, that ever 'gainst that season comes  
Wherein our Saviour's birth is celebrated,  
The bird of dawning singeth all night long :  
And then, they say, no spirit dares stir abroad ;  
The nights are wholesome ; then no planets strike,  
No fairy takes, nor witch hath power to charm,  
So hallow'd and so gracious is the time.

*Horatio.* So have I heard, and do in part believe it.  
 But, look, the morn, in russet mantle clad,  
 Walks o'er the dew of yon high eastern hill :  
 Break we our watch up ; and, by my advice,  
 Let us impart what we have seen to-night  
 Unto young Hamlet : for upon my life,  
 This spirit, dumb to us, will speak to him :  
 Do you consent we shall acquaint him with it,  
 As needful in our loves, fitting our duty ?”

1. “ For it is, as the air, invulnerable,  
 And our vain blows malicious mockery.”  
 What is the meaning of the last line ?
2. “ The cock, that is the trumpet of the morn,  
 Doth with his lofty and shrill-sounding throat  
 Awake the god of day.” [poets.]  
 Explain this. Illustrate the passage by quotations from other
3. “ And at his warning,  
 Whether in sea or fire, in earth or air,  
 The extravagant and erring spirit hies  
 To his confine.”  
 What popular belief is alluded to in the line  
 “ Whether in sea or fire, in earth or air” ?  
 In what sense do you understand the words “ extravagant ”  
 and “ erring ” ? In what significations are they more frequently used ?
4. “ And of the truth herein,  
 This present object made probation.”  
 What is the meaning of “ made probation ” ? Of what truth  
 did the object make “ probation ” ?
5. “ Some say, that ever 'gainst that season comes  
 Wherein our Saviour's birth is celebrated,  
 The bird of dawning singeth all night long.”  
 What is the name of that season, “ wherein our Saviour's  
 birth is celebrated ” ?  
 What bird is it which is here called “ the bird of dawning ” ?  
 Explain the grammatical construction of the words “ 'gainst  
 that season comes.”

6. Explain the lines, "then no planets strike,  
No fairy takes, nor witch hath power to charm,  
So hallow'd and so gracious is the time." [cious"?  
What circumstance made the time "so hallow'd and so gra-

7. "But look, the morn, in russet mantle clad,  
Walks o'er the dew of yon high eastern hill."  
Turn these lines into plain prose.  
Quote a similar description of "morn" from Shakespear  
himself, or from Milton.

8. Explain  
"As needful in our loves, fitting our duty."

9. Give a correct paraphrase of the following passage, substituting, in every instance, common expressions for those which are figurative.  
"So, oft it chances in particular men,  
That for some vicious mode of nature in them,  
As, in their birth (wherein they are not guilty  
Since nature cannot choose his origin),  
By the o'ergrowth of some complexion,  
Oft breaking down the pales and forts of reason;  
Or by some habit, that too much o'erleavens  
The form of plausible manners; that these men,  
Carrying, I say, the stamp of one defect;  
Being nature's livery, or fortune's star,  
Their virtues else (be they as pure as grace,  
As infinite as man may undergo),  
Shall in the general censure take corruption  
From that particular fault."

---

BACON'S NOVUM ORGANUM.

*Afternoon Paper.*

APHORISM 59.

"But none are so troublesome as the idols of the market, which insinuate themselves into the mind from the association of words and terms. For though men believe that their reason governs words, it also happens that words retort, and reflect their force upon the understanding; whence philosophy and the sciences have been rendered sophistical and unactive.

Words are generally imposed according to vulgar conceptions, and divide things by lines that are most apparent to the understanding of the multitude: and when a more acute understanding, or a more careful observation, would remove these lines, to place them according to nature, words cry out and forbid it. And hence it happens that great and serious disputes of learned men frequently terminate about words and terms, which it were better to begin with, according to the prudent method of the Mathematicians and reduce them to order by definitions. But in natural and material things, even these definitions cannot remedy the evil; because definitions themselves consist of words, and words generate words."

**APHORISM 73.**

"But of all the signs of philosophies, none are more certain and noble than those taken from their fruits; for fruits, and the discoveries of works, are as the vouchers and securities for the truth of philosophies.

"And, therefore, as it is a caution in religion that faith be manifested by works; an admirable rule may be hence derived into philosophy that it be judged by its fruit, and held as vain if it prove barren; and this the more, if, instead of grapes and olives, it produce the thistles and thorns of disputes and altercations."

1. "For though men believe that their reason governs words, it also happens that words retort and reflect their force upon the understanding."

Explain this sentence, and point out the concealed figure in the latter part of it.

2. "Words are generally imposed according to vulgar conceptions, and divide things by lines that are most apparent to the understanding of the multitude." Explain this, and shew that the opinion is correct. What is the meaning of "words cry out?"

3. Does not the objection that "definitions consist of words, and words generate words," apply to the terms used in mathematics as well as to those which denote "natural and material things?" Or is there any fundamental difference between the two subjects, which makes the objection apply to one of them but not to the other?

4. "For fruits and the discoveries of works are as the vouchers and securities for the truth of philosophies." Give some examples in illustration of this truth.

5. What things are meant by the figurative expressions "grapes and olives" and "thistles and thorns"? Give examples from History of systems of philosophy which, instead of "grapes and olives" have produced "the thistles and thorns of disputes and altercations."

6. In one place Bacon says, " The sovereignty of man lieth hid in knowledge ; wherein many things are reserved which kings with their treasure cannot buy, nor with their force command ; their spials and intelligencers can give no news of them, their seamen and discoverers cannot sail where they grow." Explain this passage.

7. What, according to Bacon, is the true " end" or object of the sciences ? What other end or object has been proposed by some other writers ? Shew that that other object did not escape Bacon's observation, and that he purposely kept it in the back ground.

8. Mention some of the leading principles of the first book of the *Novum Organum*.

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#### FOURTH CLASS.

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#### GRAY'S POEMS.

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#### ODE TO ADVERSITY.

##### *Morning Paper.*

" Thy form benign, oh goddess ! wear,  
 Thy milder influence impart,  
 Thy philosophic train be there  
 To soften, not to wound my heart.  
 The generous spark extinct revive,  
 Teach me to love and to forgive,  
 Exact my own defects to scan,  
 What others are to feel, and know myself a man."

#### ELEGY.

" Perhaps in this neglected spot is laid,  
 Some heart once pregnant with celestial fire ;  
 Hands, that the rod of empire might have sway'd,  
 Or wak'd to ecstacy the living lyre :

" But knowledge to their eyes her ample page  
 Rich with the spoils of time did ne'er unroll ;  
 Chill penury repressed their noble rage,  
 And froze the genial current of the soul."

## THE BARD.

“ Girt with many a baron bold  
 Sublime their starry fronts they rear ;  
 And gorgeous dames, and statesmen old  
 In bearded majesty, appear.  
 In the midst a form divine !  
 Her eye proclaims her of the Briton line ;  
 Her lion-port, her awe-commanding face,  
 Attemper'd sweet to virgin-grace.  
 What strings symphonious tremble in the air,  
 What strains of vocal transport round her play !  
 Hear from the grave, great Taliessin, hear ;  
 They breathe a soul to animate thy clay.  
 Bright Rapture calls, and soaring as she sings,  
 Waves in the eye of heaven her many-coloured wings.

“ The verse adorn again  
 Fierce war, and faithful love,  
 And truth severe, by fairy fiction drest.  
 In buskin'd measures move  
 Pale grief, and pleasing pain,  
 With horror, tyrant of the throbbing breast.  
 A voice, as of the cherub choir,  
 Gales from blooming Eden bear ;  
 And distant warblings lessen on my ear,  
 That lost in long futurity expire.”

1. “ Thy milder influence impart.”  
 What two things are compared ?  
 “ Thy philosophic train be there.” [lo sophic train ?”  
 What are those fruits of adversity which the Poet calls “ her phi-
2. “ Teach me to love and to forgive”  
 Give the full meaning of this line.  
 Explain clearly and concisely the two following lines.  
 “ Exact my own defects to scan,  
 What others are to feel, and know myself a man.”
3. What is the meaning of “ celestial fire” ?  
 Explain the line  
 “ Or wak'd to ecstacy the living lyre.”

4. "Rich with the spoils of time."

What are "the spoils of time" which enrich the "ample page" of knowledge? Shew that the word "ample" is well chosen.

5. "For who, to dumb forgetfulness a prey,

This pleasing anxious being e'er resign'd,  
*Left the warm precincts of the cheerful day,*  
 Nor cast one longing, lingering look behind?

"On some fond breast the parting soul relies,  
 Some pious drops the closing eye requires;  
 Even from the tomb the voice of nature cries,  
*Even in our ashes live their wonted fires.*"

Explain the two lines in *italics*. What is the meaning of "this pleasing anxious being"?

6. "In the midst a form divine!

Her eye proclaims her of the Briton line."

What celebrated Queen of England is alluded to? Was she of "the Briton line," and why does the Bard refer with satisfaction to this circumstance?

7. "What strings symphonious tremble in the air,

What strain of vocal transport round her play!"

To what circumstance in the reign of this Queen does the Poet allude? Point out any beauties of expression in these lines.

8. "The verse adorn again

Fierce war, and faithful love,  
 And truth severe in fairy fiction drest.

In buskin'd measures move  
 Pale grief, and pleasing pain,  
 With horror, tyrant of the throbbing breast."

What Poets are alluded to? Point out the words which most clearly mark what particular Poets are meant.

9. "A voice, as of the cherub choir,

Gales from blooming Eden bear."

Explain these two lines, and point out the application of "cherub choir" and "Gales from blooming Eden" to the particular Poet referred to.

## FOURTH CLASS.

## COLLINS.

—  
ODE TO FEAR.*Afternoon Paper.*

“ In earliest Greece, to thee, with partial choice,  
 The grief-ful muse address her infant tongue ;  
 The maids and matrons, on her awful voice,  
 Silent and pale, in wild amazement hung.

“ Yet he, the bard who first invoked thy name,  
 Disdained in Marathon its power to feel ;  
 For not alone he nursed the poet’s flame,  
 But reached from virtue’s hand the patriot’s steel.

“ O Fear, I know thee by my throbbing heart,  
 Thy withering power inspir’d each mournful line,  
 Though gentle pity claim her mingled part,  
 Yet all the thunders of the scene are thine.”

## ODE TO THE PASSIONS.

“ But thou, O Hope ! with eyes so fair,  
 What was thy delighted measure ?  
 Still it whispered promised pleasure,  
 And bade the lovely scenes at distance hail !  
 Still would her touch the strain prolong,  
 And from the rocks, the woods, the vale,  
 She called on Echo still through all the song.”

## RASSELAS.

“ Wherever I went, I found that poetry was considered as the highest learning, and regarded with a veneration somewhat approaching to that which man would pay to angelic nature. And yet it fills me with wonder, that, in almost all countries, the most ancient poets are considered as the best : whether it be that every other kind of knowledge is an acquisition gradually attained, and poetry is a gift conferred at once ; or that the first poetry of every nation surprized them as a novelty, and retained the credit by consent which it received by accident at first ; or whether, as the province of poetry is to describe nature and passion, which are always the

same, the first writers took possession of the most striking objects for description and the most probable occurrences for fiction, and left nothing to those that followed them but transcription of the same events, and new combinations of the same images. Whatever be the reason, it is commonly observed, that the early writers are in possession of nature, and their followers of art; that the first excel in strength and invention, and the latter in elegance and refinement."

1. "In earliest Greece, to thee, with partial choice,  
The grief-ful muse addrest her infant tongue."  
What is the meaning of "partial choice" and "addrest her infant tongue"? Why does the Poet say "earliest" Greece?
2. "For not alone he nursed the poet's flame,  
But reach'd from virtue's hand the patriot's steel."  
Explain these two lines.
3. "Though gentle pity claim her mingled part,  
Yet all the thunders of the scene are thine."  
In what does Pity "claim her mingled part"? What are "the thunders of the scene"?
4. "But thou, O Hope! with eyes so fair,  
What was thy delighted measure"?  
State in your own words the Poet's reply to this question.
5. "O Music! sphere-descended maid,  
Friend of pleasure, wisdom's aid."  
Explain in what sense Music is the "friend of pleasure," and in what sense it may be called "wisdom's aid."
6. "Wherever I went I found that poetry was considered as the highest learning," &c.  
What reasons are given by Dr. Johnson in this paragraph to account for the fact that in almost all countries the most ancient poets are considered as the best? Are there any other reasons?
7. Give the meaning of the following clauses.  
"Approaching to that which men would pay to angelic nature."  
"Knowledge is an acquisition gradually attained, and poetry is a gift conferred at once."  
"The province of poetry is to describe nature and passion."  
"The most probable occurrences for fiction."

8. "It is commonly found that the most ancient writers are in possession of nature, and their followers of art; that the first excel in strength and invention, and the latter in elegance and refinement." Explain this passage, and give illustrations of it from the history of English Poetry.

---

## MENTAL PHILOSOPHY.

10 A. M. TO 1½ P. M.

1. What is meant by laws of mind? Name some of the most general of these laws, and explain how they are ascertained.
2. State briefly the principal causes which have retarded the progress of mental science.
3. Mention the different senses in which the word "Reason" is used; and distinguish between Intuition and Reasoning.
4. What according to Stewart is the essential distinction between the axioms and the definitions of Geometry, and how does he illustrate this distinction?
5. What is meant by Fundamental Laws of belief? What analogies or coincidences are traceable between them and the axioms of Geometry?
6. Define the term Abstraction. In what way are general terms formed? Explain the nature of the aid they afford in general reasoning.

---

*Thursday, September 18, 1851.*

2 TO 5½ P. M.

1. Stewart remarks, that in order to arrive at a general conclusion in Mathematics and the other sciences, two different processes of reasoning are necessary. Explain them.
2. The field of mathematical demonstration being limited entirely to hypothetical truths, whence arises the extensive utility of mathematical knowledge in physical researches and in the arts of life?
3. After telling us that "laws, in their most extensive signification are the necessary relations which arise from the nature of things, and that in this sense all beings have their laws;" Montesquieu proceeds to remark, "that the moral world is far from being so well governed as

the material ; for the former, although it has its laws, which are invariable, does not observe these laws so constantly as the former." Point out the fallacy contained in the above passage.

4. Distinguish between the logical and the popular meaning of the word Probability.

5. Explain the difference between the evidence of experience and that of analogy ; and show that there are two kinds of general notions essentially different from each other.

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FOR THE FOURTH CLASS.

10 A. M. TO 1½ P. M.

1. Explain clearly the object of Mental Science.

2. What is the origin of our knowledge of facts relative both to matter and mind ?

3. What are the primary objects of vision ? How do we acquire our notions of distance and magnitude ?

4. Define Reflection. To what heads would you refer the knowledge which we derive from this source ?

5. What are the principles by which a man of cultivated mind is influenced in receiving upon testimony statements which are rejected by the vulgar as totally incredible ?

6. What are the evils likely to arise from much indulgence in works of fiction ?

---

2 TO 5½ P. M.

1. Define Reason. Explain and illustrate the distinction between intuitive and discursive reasoning.

2. What is meant by First Truths ? Upon what evidence do they rest, and by what characters are they distinguished ?

3. Explain the meaning of necessity as applied to the operation of moral causes.

4. What are the elements into which any particular piece of reasoning may be resolved.

5. State briefly the rules to be observed in deducing a general principle.

*History.*

## ARNOLD'S LECTURES.

*Morning Paper.*

8. Were the revolutionary party in France consistent in magnifying the names of Brutus and Cato?

9. Is the popular party always a movement party? Support your answer by examples.

10. What does Arnold mean when he says "it is a fatal error in all political questions to mistake the clock"?

Illustrate it by the great quarrel between the Guelfs and Ghibelines.

11. What were the principles of the three great parties in England at the close of the sixteenth century?

12. Why was the cause of revolution more popular in France than in England?

13. Shew that there was no inconsistency in the popular party in England supporting the war of 1703 and opposing that of 1793.

14. Shew by examples the necessity in an historian of an earnest craving after truth and utter impatience not of falsehood merely but of error.

*Afternoon Paper.*

1. Where does Arnold place the commencement of modern history, and why so?

2. "Well might Niebuhr protest against the practice of making quotations at second-hand instead of going to the original source."

Illustrate this remark from the mistakes into which three celebrated modern writers have been led from one garbled extract.

3. "I wished to give an example of what I meant by a real and lively geography," &c.

Describe Italy in this manner.

4. Shew that the general tendency of the last three centuries has been to consolidate small independent states into large kingdoms.

5. Trace the "centres of action and resistance" in Europe during the last three centuries.

6. Does history justify the belief of an inherent superiority in some European nations over others?

7. On what grounds does Arnold advocate the expediency of a standing army?

## ELPHINSTONE'S HISTORY OF INDIA.

*Morning Paper.*

1. Draw a Map of India shewing
  - (1.) The basins of the principal rivers.
  - (2.) The parts still covered by unexplored forests.
  - (3.) The two highest peaks of the Himalaya range.
  - (4.) The territorial limits of the chief languages now spoken.
  - (5.) The supposed localities of some of the great towns before the Moohummudan invasion.
2. What regulations in the code of Menu with respect to war and the treatment of women shew a humane disposition on the part of the Hindus?
3. Describe an Indian township, and the duties of its principal officers.
4. How does Elphinstone sum up the arguments on the question of "right of property in the soil"?
5. Give a sketch of the evidence on which it is asserted that the names Sandracoptus and Chandragupta refer to the same person.
6. Describe the steps by which Mr. Prinsep was enabled to decipher the inscription on Firuz Shah's column.

---

*Afternoon Paper.*

7. What is the general character of the Hindu drama?
8. Point out the extent of the commerce of the Hindus in early times.
9. On what grounds does Tod suppose that some of the Rajput tribes are of Scythian descent?
10. Shew by a table the states which existed in India before the Moohummudan conquest, and where they are first and last mentioned.
11. Give the date and some of the circumstances of the invasion of India by Cassim.
12. In which of his expeditions did the Sultan Mahmud plant the first permanent garrison of Moohummudans beyond the Indus. Give an account of the storming of Somnauth.

## Mathematics.

### FIRST CLASS.

#### DIFFERENTIAL AND INTEGRAL CALCULUS.

##### *Morning Paper.*

(1.) Having given  $u = o$  a relation between  $x$  and  $y$ , shew how to find the differential co-efficient of  $y$  with respect to  $x$ , find  $\frac{dy}{dx}$

from  $y e^{ny} = ax^m$  and from  $y = \cos^{-1} \sqrt{\frac{a^2 - x^2}{b^2 - x^2}}$

and if  $y = \cos mx$  find  $\frac{d^n y}{dx^n}$

(2.) Apply the method of limits to find the equation to a straight line which touches the curve at a given point.

Find the asymptotes to the curve  $y^2 = ax^2 + x^3$

(3.) Shew how to determine the value of a vanishing fraction in all cases

$$(1) \frac{\sqrt{a} - \sqrt{x} + \sqrt{a-x}}{a - \sqrt{2ax-x^2}} \text{ when } x = a$$

$$(2) \frac{\sin m\theta - \cos(m\frac{\pi}{2} - n\theta)}{\sin n\theta + \cos(\frac{n\pi}{2} + m\theta)} \text{ when } \theta = o \text{ m be a whole number}$$

ber of the form  $4p + 1$  and  $n$  of the form  $4p + 3$ .

(4.) Shew how the maximum and minimum values of a function of one variable may be determined.

If this method be applied to find those conjugate diameters in an ellipse, of which the sum is a maximum or a minimum, it appears to fail in the latter case—Explain the cause of this.

(5.) Explain the transformation of the independent variable and transform the equation  $\frac{d^2y}{dx^2} - \frac{x}{1-x^2} \frac{dy}{dx} + \frac{y}{1-x^2} = o$ , where  $x$  is the independent variable, into one where  $\theta$  is the independent variable,  $\theta$  being equal to  $\cos^{-1}x$

If  $R$  represent the radius of curvature, it may be proved equal to  $\frac{ds^2}{\sqrt{(d^2x)^2 + (d^2y)^2}}$  where  $x$  and  $y$  are co-ordinates of a point in the curve, and  $S$  the length of it.

(6.) If  $AP$  be any curve referred to a pole  $S$ ; find the differential expression for the area: and if  $u$  be the solid generated by the revolution of the area  $ASP$ , about  $AS$ ,  $SP = r$  and the angle  $ASP = \theta$ .

Shew that  $\frac{du}{d\theta} = \frac{1}{3} \pi r^3 \sin \theta$

(7.) Shew that  $\frac{d\theta}{du}$  is the polar subtangent of a curve,  $u$  being the reciprocal of the radius vector; and there is generally a point of inflexion where  $u + \frac{d^2u}{d\theta^2} = 0$ .

Find the asymptotes and points of inflexion in the curve whose equation is  $r = a \frac{\theta}{\sin \theta}$  and trace the curve.

(8.) Integrate the following expressions :

$$\frac{dx}{(a^2 + x^2)^{\frac{3}{2}}}, \quad \frac{xdx}{(x^2 + a^2)(x^2 + 5a^2)}, \quad \frac{x\sqrt{x}}{(1+x^2)^3}, \quad \frac{x^3 dx}{(\log x)^{\frac{1}{2}}}$$

Find the value of  $\int_{0^4}^{\pi} dx (\tan x)^n$

(9.) What is meant by integration between limits? When the function to be integrated changes its sign between the limits, how is the true value of the definite integral to be found?

Trace and find the area of the curve  $r = a(2 \cos \theta - 1)$ .

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### SECOND CLASS.

#### GEOMETRY OF TWO DIMENSIONS, AND NEWTON.

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##### *Morning Paper.*

(1.) Shew how to draw a straight line by means of its equation both when the co-ordinate axes are rectangular and oblique, the angle between the axes being  $108^\circ$ —draw the straight lines.

$$(1) y = \sqrt{\frac{5+1}{2}}(x-a), (2) y = \sqrt{\frac{5-1}{2}}x + a, (3) x + y = \frac{3 + \sqrt{5}}{2}a$$

and shew that if (1) and (3) be produced to meet the axes, and (2), the lines intercepted between the origin and the successive points of intersection, will form a rectangular pentagon.

(2.) If  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$  be the equation to an ellipse ( $hk$ ) a given point, what does the equation  $\frac{hx}{a^2} + \frac{ky}{b^2} = 1$  represent, (1) when ( $hk$ ) is in the circumference of the ellipse, (2) when without it, (3) when within it.

(3.) Define an hyperbola and thence find its polar equation, the centre being pole. If the transverse axis be indefinitely increased the hyperbola passes into a parabola.

(4.) If a right cone be cut by a plane, find the equation by the section, and shew that it will be an ellipse, hyperbola, or parabola.

(5.) Shew that the equation to the parabola referred to any two tangents as axes may be put under the form  $\sqrt{\frac{x}{a}} + \sqrt{\frac{y}{b}} = 1$  where  $a$  and  $b$  are portions of the tangents between the curve and their intersection.

(6.) Explain the mode of reasoning by which Newton determines the ratio of quantities which vanish together; and prove that the ultimate ratio of the arc, chord and tangent to each other is one of equality.

(7.) Enunciate Lemma XI. What is meant by saying that every curve of finite curvature is ultimately a parabola? How is this proved?

(8.) If a body revolve round a fixed centre of force, the areas described by lines drawn from the body to the centre of force lie in one plane, and are proportional to the times of describing them.

Point out the laws of motion assumed in the proof of this proposition.

(9.) State Kepler's laws; and enunciate the various propositions in Newton by means of which they may be deduced from the theory of universal gravitation.

(10.) A body moves in a parabola, to find the law of force tending to the focus, and compare its velocity at any point with that of a body moving in a circle radius =  $SP$  and described round the same centre of force..

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### THIRD CLASS.

#### THEORY OF EQUATIONS AND CONIC SECTIONS.

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##### *Morning Paper.*

(1.) Shew that the equation whose roots are

$$\cos \frac{\cos^{-1}a}{3}, \cos \frac{2\pi + \cos^{-1}a}{3}, \cos \frac{2\pi - \cos^{-1}a}{3}$$

$\text{is } x^3 - \frac{3}{4}x - \frac{a}{4} = 0.$

(2.) An equation must have an even number of impossible roots, or none. How far is this true of irrational possible roots? Having given one root of the equation  $x^4 - 6x^2 - 48x - 11 = 0$  is  $2 + \sqrt{5}$  solve the equation.

(3.) If  $f(x)$  be a rational and integral function of  $x$ ; Explain the formation of its successive derived functions; Shew that an odd number of roots of  $f'(x) = 0$  lies between every two possible roots of  $f(x) = 0$  and that if

$$f(x) = 0, f'(a) = 0, f''(a) = 0, \dots, f^{(r)}(a) = 0$$

$f(x)$  is divisible by  $(x - a)^{r+1}$

(4.) Investigate a method for finding the commensurable roots of an equation whose co-efficients are rational. If the constant term have many divisors, how may the operation be shortened?

Solve the equation  $x^5 - 3x^4 - 9x^3 + 21x^2 - 10x + 24 = 0$ .

(5.) An equation of  $m$  dimensions has  $n$  equal roots, shew how to find them; Solve the equation

$$x^4 + 13x^3 + 33x^2 + 31x + 10 = 0 \text{ which has 3 equal roots.}$$

(6.) Give Waring's method of separating the roots of an equation ex.  
 $x^3 - 11x + 11 = 0$ .

(7.) If from either extremity  $QVQ'$  of a parabola a perpendicular  $QD$  is let fall on the diameter then ( $QD^2 = 4AS. PV$ .)

(8.) In the ellipse the rectangle under the abscissæ of the axis major is to the square of the semiordinate, as the square of the axis major to the square of the axis minor ( $AN \cdot NM : PN^2 = AC^2 : BC^2$ )

(9.) The rectangle under the perpendiculars drawn from the foci of an hyperbola on the tangent is equal to the square of the semi-axis minor ( $Sy \cdot Hz = BC^2$ ).

(10.) In the hyperbola parallelograms formed by the tangents at the vertices of pairs of congregate diameters have all the same area.

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#### FOURTH CLASS.

#### EUCLID AND ALGEBRA.

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#### *Morning Paper.*

(1.) In any right angled triangle, the square which is described upon the side subtending the right angle is equal to the squares described upon the other two sides which contain the right angle.

Is this proposition included in any more general one?

(2.) To divide a given straight line into two parts, so that the rectangle contained by the whole and one of the parts, shall be equal to the square of the other part.

Can this be solved arithmetically? if so, find approximately into how many parts the given line must be divided.

(3.) Prove that the opposite angles of any quadrilateral figure which can be inscribed in a circle are together equal to two right angles.

(4.) If a straight line be drawn parallel to one of the sides of a triangle, it shall cut the other sides or those produced proportionally, and if the sides or the sides produced be cut proportionally, the straight line which joins the point of section shall be parallel to the remaining sides of the triangle.

Hence shew how a line may be drawn on the ground through a given point, parallel to a given straight line by means of a piece of string.

(5.) Every solid angle is contained by plane angles, which together, are less than four right angles.

(6.) A person who had a  $9\frac{1}{4}$  anna share in an Indigo factory, made his younger brother a present of 75 per cent. of his share, and sold the remainder to his cousin, who soon after purchased  $\frac{1}{4}$  of the younger brother's share, but now offers to dispose of half his interest in the factory for Rs. 7000. Estimating at the same rate what was the value of the whole factory, and each brother's share?

(7.) If  $a$  and  $b$  be two integral numbers prime to one another and the product  $a \times c$  be divisible by  $b$ , shew that  $c$  must be divisible by  $b$ .

Find the form of the denominator of a vulgar fraction in its lowest terms when it is reducible to a terminating decimal. Is  $\frac{1}{15}$  so reducible?

(8.) To extract when possible the cube root of a binomial surd, one of whose terms is a rational quantity, and the other a quadratic surd.

*Ex.*  $-4 - 10\sqrt{-2}$

(9.) Solve the equations

$$\frac{a^3 + x^3}{a + x} + \frac{a^3 - x^3}{a - x} = 4 a^2 \quad \dots \quad \dots \quad \dots \quad (1)$$

$$(x^2 + 1)(x + 2) = 2 \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

$$\left. \begin{array}{l} \frac{m}{x} + \frac{n}{y} = a \\ \frac{n}{x} + \frac{m}{y} = b \end{array} \right\} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (3)$$

In equation (3) explain the result when the values of  $x$  and  $y$  assume the form of 8

(10.) Insert  $m$  harmonical means between  $a$  and  $b$ .

The distance between Calcutta and Barrackpore is 14 miles, now if a single stone were laid upon every yard of that distance, and the first one was a yard from the basket, what distance would a man travel in bringing the stones one by one to the basket.

(11.) Write down the number of variations of  $m$  things taken  $r$  and  $r$  together.

Find the greatest term in the expansion of  $(1 + x)^m$  without regard to sign  $m$  being positive and  $x$  a proper fraction. Will the same investigation hold when  $m$  is negative?

(12.) Find the amount of an annuity, left unpaid for  $m$  years, at simple interest.

Explain why it is not consistent with the principle of simple interest to consider the amount of an annuity, to be sum of the present values due at the periods 1, 2, 3, ...  $m$ , years.

(13.) Investigate a rule for forming the consecutive converging fractions.

How may converging fractions be employed to find the logarithm corresponding to any number?

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### FIRST CLASS.

#### DIFFERENTIAL AND INTEGRAL CALCULUS.

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##### *Afternoon Paper.*

(1.) If  $u$   $v$  be functions of  $x$  prove the theorem :

$$\frac{d^n(uv)}{dx^n} = v \frac{d^n u}{dx^n} + n \frac{dv}{dx} \cdot \frac{d^{n-1}u}{dx^{n-1}} + \frac{n(n-1)}{1.2} \cdot \frac{d^2v}{dx^2} \cdot \frac{d^{n-2}u}{dx^{n-2}} + \text{etc.}$$

$$\text{Shew that } \left( \frac{d}{dx} - a \right)^n \int (x) = e^{ax} \left( \frac{d}{dx} \right)^n e^{-ax} \int (x)$$

(2.) Within a given parabola inscribe the greatest parabola, the vertex of the latter being at the bisection of the base of the former.

(3.) Investigate a differential expression for the radius of curvature, and shew that it is identical with Newton's expression,

$$\frac{1}{2} \lim_{\text{subtense } \perp \text{ to the tangent}} \frac{(\text{arc})^2}{}$$

In the curve  $y = \frac{c}{2} \left( \frac{x}{\epsilon} + \frac{-x}{\epsilon} \right)$  the ordinate at any point is a mean proportional to the radius of curvature there and at the point  $x = 0$ .

(4.) Define the evolute of a curve. Investigate the property on which it depends; find the evolute to the cycloid.

(5.) Determine the nature of the curve whose equation is  $y^3 + x^3 - ax^2 = 0$ , find the maximum ordinate, and point of inflexion. Trace and find the area of the curve whose equation is

$$x^4 + y^4 - a^2 xy = 0$$

(6.) If in the radius vector  $SP$  of a parabola, (the vertex of which is  $A$ , and  $Sy$  the perpendicular from the focus  $S$  upon the tangent at  $P$ ) a point  $Q$  be taken, such that  $SA : Sy = SQ : SP$ , find the equation to the curve which is the locus of  $Q$ ; trace the curve and shew that the areas of the curve and parabola between the vertex and the *latus rectum* of the parabola are as 3 : 4.

(7.) Shew how to find the length of a curve referred (1) to rectangular co-ordinates, (2) to polar co-ordinates. Prove that the length of the curve whose equation is  $x^{\frac{3}{2}} + y^{\frac{3}{2}} = a^{\frac{3}{2}}$  intercepted between the axes of  $x$  and  $y$  is  $\frac{3a}{2}$

(8.) Find the volume of the solid generated by the revolution, about the axis of  $x$ , of the lemniscata the equation of which is

$$(x^2 + y^2)^2 = a^2 (x^2 - y^2)$$

#### SECOND CLASS.

##### Afternoon Paper.

(1.) State the steps in the reasoning by which it is shewn that  $f(x + h)$  admits of development in a series proceeding by ascending positive and integral powers of  $h$ .

(2.) If  $(u)$  be a function of  $y$ ,  $y$  a function of  $x$ ,  $\frac{du}{dx} = \frac{du}{dy} \cdot \frac{dy}{dx}$  Employ

$$\frac{x}{a} \quad \frac{k}{b}$$
  
this proposition to differentiate by *substitution* the function.

Required the differentials

$$\text{hyp. log. } \sqrt{\frac{a^2 - x^2}{a^2 + x^2}} \cdot x^m x \text{ and } \frac{x\sqrt{-1}}{\epsilon} - \frac{x\sqrt{-1}}{\epsilon}$$

$$\text{hyp. log. } \sqrt{\frac{a^2 - x^2}{a^2 + x^2}} \cdot x^m x \text{ and } \frac{2\sqrt{-1}}{\epsilon} (\epsilon x\sqrt{-1} + \epsilon^{-x\sqrt{-1}})$$

(3.) Define a multiple point, and shew from the definition that if  $\frac{dy}{dx}$  be obtained from the equation to the curve made free of radicals, the co-ordinates of the multiple point will make it assume the form  $\frac{0}{0}$

Take as an example the curve  $x^2y^2 = a^2 (x^2 - y^2)$  and determine the direction of its branches at the multiple point.

(4.) A curve is convex or concave to the axis of  $x$ , according as  $\frac{d^2y}{dx^2}$  has, or has not, the same sign as the ordinate.

Determine the minimum value of  $(x - a)^m$   $m$  being odd.

(5.) Find the differential expression for the radius of curvature, and shew that it agrees with Newton's.

If  $y$  and  $x$  be functions of a third variable  $\theta$ , the expression for the radius of curvature is

$$\frac{\left\{ \left( \frac{dx}{d\theta} \right)^2 + \left( \frac{dy}{d\theta} \right)^2 \right\}^{\frac{3}{2}}}{\frac{dy}{d\theta} \cdot \frac{d^2x}{d\theta^2} - \frac{dx}{d\theta} \cdot \frac{d^2y}{d\theta^2}}$$

determine what this expression becomes when  $\theta$  is the arc of the curve.

(6.) Trace the curves defined by the equations

$$y = x \sqrt{\frac{x^2 - a^2}{x^2 + a^2}}, y = x \sqrt{\frac{x^2 + a^2}{x^2 - a^2}}, y = x \sqrt{\frac{a^2 + x^2}{a^2 - x^2}}$$

(7.) Investigate the differential expression for a surface of revolution; and find the surface generated by the revolution of the lemniscata, the polar equation of which is  $r^2 = a^2 \cos 2\theta$ .

(8.) Find the locus of the intersection of the perpendicular, drawn from the vertex, and tangent to any point of a parabola. Trace the curve and find the area between the curve and its asymptote.

(9.) Integrate  $\int_x \frac{x}{(a + bx^3)^{\frac{3}{2}}} \int_x \frac{x^3}{(a^2 + x^2)^n} \int_\theta \sin m\theta \cos n\theta$ .

Make the integral of  $\int_x \frac{1}{(a^2 + x^2)^n}$  depend on that of  $\int_x \frac{1}{(a^2 + x^2)^{n-1}}$

(10.) Obtain the integral of  $\int_x \frac{1}{\sqrt{a + bx + cx^2}}$

### THIRD CLASS.

#### THEORY OF EQUATIONS AND CONIC SECTIONS.

##### *Afternoon Paper.*

(1.) Shew how to transform an equation into one which shall want the second or third term; under what circumstances can both be made to disappear at one operation?

Form an equation of six dimensions having the co-efficients of the 2nd and 3rd term so related that they can both be taken away at one operation.

(2.) The limiting equation must always have as many possible roots as the original wanting one.

Hence prove that if  $m$  consecutive terms be wanting in an equation, it cannot have more than  $(n-2m.)$  possible roots. How many possible roots can the equation  $x^n - ax^2 + b = 0$  have.

(3.) Give Cardan's method for the solution of a cubic equation.

Shew that it fails when all the roots are *real*, and succeeds when two roots are *imaginary*, or when all real but *two equal*.

$$Ex. x^3 - 3x^2 - 3x - 7 = 0.$$

(4.) If several roots of an equation lie between two consecutive integers, how may Sturm's Theorem be applied to find an approximation to each?

Find by this method an approximate value of a root of the equation  $x^3 - x^2 - 5 = 0$ . Correct to three places of decimals.

(5.) Explain Newton's method of approximating to the roots of an equation, and shew when it may safely be applied.

Obtain an approximate value of a root of  $x^3 + 4x^2 - 1 = 0$ . Correct to two places of decimals.

(6.) Define the asymptotes of an hyperbola. If any straight line  $Qq$  perpendicular to either axis of an hyperbola meet the asymptotes in  $Q$  and  $q$  and  $y$  the curve in  $P$  the rectangle  $Q P. Pq$  is invariable.

(7.) In the Ellipse the sum of the squares of the conjugate diameters is constant ( $C P^2 + C D^2 = A C^2 + B C^2$ .) If the normals at  $P$  and  $D$  intersect in  $K$  shew that  $K C$  is perpendicular to  $P D$ .

(8.) If any chord  $AP$  through the vertex of an hyperbola be divided in  $Q$  so that  $AQ : QP = AC^2 : BC^2$ , and  $QM$  be drawn perpendicular to the foot of the ordinate  $MP$  shew that  $QO$  at right angles to  $QM$  cuts the transverse axis in the same ratio.

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#### FOURTH CLASS.

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#### EUCLID AND ALGEBRA.

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##### *Afternoon Paper.*

(1.) Upon stretching two chains,  $AC, BD$ , across a field  $ABCD$ , I find that  $BD$  and  $AC$  make equal angles with  $DC$ , and that  $AC$  makes the same angle with  $AD$ , that  $BD$  does with  $BC$ . Hence prove that  $AB$  is parallel to  $CD$ .

(2.) Determine the regular polygons which by juxtaposition may fill space about a point, all of them being situated in the same plane. What advantages arise from the honeycomb consisting of hexagonal cells.

(3.)  $ABC$  is an equilateral triangle;  $E$ , any point in  $AC$ ; in  $BC$  produced take  $CD = CA$ ,  $CF = CE$ ;  $AF$ ,  $DE$ , intersect in  $H$ .

$$\frac{HC}{EC} = \frac{AC}{AC + EC}$$

(4.) If three clocks were regulated to go in the following manner; being set at 12 o'clock at noon on the first of January 1852; the first to keep the exact time, the second to gain a minute, and the third to lose a minute per day; what day, month and year would they meet again at the same hour.

(5.) Shew how to transform a number from one scale of notation to another. Having given 16·34 in the octenary scale and ·0545 in the senary, find their product in the undenary scale. Find the area of the rectangle 4 yards, 1 foot, 2 inches long, 3 yards, 2 feet, 4 inches wide.

(6.) Find the sum of the series

$$mn + (m-1)(n-1) + (m-2)(n-2) + \dots \dots \dots$$

Hence find the number of balls in an incomplete rectangular pile, of 22 courses, which contains 68 balls in the length and 44 in the breadth of the bottom row.

(7.) Expand  $a^x$  in a series ascending by powers of  $x$ .

Shew that

$$1 + 1 + \frac{1}{1 \cdot 2} + \frac{1}{1 \cdot 2 \cdot 3} + \frac{1}{1 \cdot 2 \cdot 3 \cdot 4} + \text{ &c. to infinity}$$

is convergent, and that its limit cannot exceed 3.

(8.) An urn contains 20 balls, 4 of which are white,

If a person draw 5 at a venture, find

(1.) the probability of drawing only one white ball.

(2.) the probability of drawing at least one white ball.

(9.) If the terms of the expansion  $(a + b)^m$  be multiplied respectively by the quantities  $\frac{m}{r}$ ,  $\frac{m-1}{r-1}$ ,  $\frac{m-2}{r-2}$  . . . and  $m$  be a whole number, find the sum of the resulting series.

(10.) Find the present value of a scholarship of Rs. 40 per month (payable monthly), the enjoyment of which is to commence 5 weeks from this date, and to continue for 12 months, at 5 per cent. simple interest.

(11.) A railway train after travelling for one hour meets with an accident, which delays it one hour, after which it proceeds at  $\frac{2}{3}$ ths of its former rate and arrives at the terminus 3 hours behind time; had the

accident occurred 50 miles further on, the train would have arrived one hour and twenty minutes sooner; required the length of the line.

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### FIRST CLASS.

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#### OPTICS.

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##### *Morning Paper.*

(1.) Define a pencil of rays, converging rays, diverging rays, and the focus of a pencil of rays.

If diverging or converging rays be reflected at a plane surface, the foci of the incident and reflected rays are on contrary sides of the reflector, and equally distant from it.

Why does the common looking glass give more than one image at a point?

(2.) Find the geometrical focus and aberration for a pencil of rays converging to a given point between the centre and principal focus of a convex mirror, and shew that, whether the rays be divergent or convergent, the aberration is *towards* the mirror.

(3.) A small pencil of rays is incident obliquely on a concave refracting surface; find the positions of the focal lines, and shew for what values of  $\mu$  the primary focus is further from the surface than the secondary, drawing the requisite figures.

(4.) Find the deviation of a ray after two successive reflections at plane mirrors inclined to each other at a given angle, the course of the ray lying in a plane perpendicular to their line of intersection.

What must be the first angle of incidence that at a third reflection the course of the ray may be exactly reversed?

(5.) If a ray of light passes through a glass prism shew that it is bent towards the thicker part of the prism, and that the deviation =  $(\mu-1)r$  when the reflecting angle  $r$ , and the angle of incidence are both small. Hence deduce the position of the principal focus of a double convex lens.

Why is  $\frac{1}{f}$  called the power of the lens.

(6.) Find the principal focus of a refracting sphere. How may a sphere be used as a microscope?

(7.) What is the dispersive power of a transparent medium, and how is it measured? What is a table of dispersive powers? Give a short account of irrationality of dispersion, and secondary and tertiary spectra.

(8.) Having given two concave mirrors and two convex lenses, the focal length of the former being 4 feet and 4 inches, and of the latter 3 inches and 1 inch respectively, construct a Gregorian telescope with Huyghen's eye-piece and find the magnifying power.

(9.) Explain what is meant by a lens equivalent to a system of lenses.

Two lenses whose focal lengths are  $3l$  and  $l$ , have a common axis, and are separated by an interval  $2l$ ; if the axis of a pencil of rays crosses the axis of the lenses at a distance  $= 120l$  from the first, determine the focal length of the equivalent lens, and compare its effect with that of each of the lenses taken singly.

(10.) In the simple astronomical telescope shew when the apertures of the two lenses are proportional to their focal lengths, the field of view (*as seen by single pencils*) is a single point.

If the simple astronomical telescope be adjusted to an ordinary eye, what change must be made to suit a short-sighted person?

#### SECOND CLASS.

#### HYDROSTATICS AND SPHERICAL TRIGONOMETRY.

##### *Morning Paper.*

(1.) What is the principle of the transmission of fluid pressure? How far is it necessary to prove it by experiment? When a body is immersed in a fluid, prove that the pressure of the surrounding fluid acts everywhere in a normal to the surface.

(2.) Explain the phenomena of reciprocating springs, and shew that they will not reciprocate in very wet or very dry weather.

(3.) The surface of a fluid at rest is a horizontal plane. If a vessel be filled with oil and water, explain why they will not mix, and shew that their common surfaces will be horizontal.

(4.) Find the pressure of a fluid upon any plane surface immersed in it, and the point of application of the single resultant force. Compare the pressure on the side and on the base of a regular tetrahedron (or solid bounded by four equilateral and equal triangles) when immersed in a fluid.

(5.) A body floats in water; find the condition of equilibrium.

A cylinder with its axis vertical floats in two fluids of different densities; find the ratio of two parts into which the cylinder is divided by the common surface of the two fluids.

(6.) Describe Nicholson's Hydrometer and the mode in which it is used in practice.

(7.) Describe the process of filling and graduating a mercurial thermometer. Are the lowest points the same under all circumstances? What point in Reaumur's and in Centigrade scale correspond to 44° Fahrenheit.

(8.) The sum of the angles of a spherical triangle is greater than two right angles, and less than six. Show that the angles at the base of an isosceles triangle are equal.

(9.) Express the cosine of an angle of a spherical triangle in terms of the cosines and sines of the sides.

(10.) Prove Napier's rules for the solution of a right angled triangle when one of the sides is the middle part. Having given one side and an angle opposite to it, solve the triangle and explain whether there is any ambiguity.

(11.) Given the angles of a spherical triangle, shew to find its area.

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### THIRD CLASS.

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#### STATICS.

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##### *Morning Paper.*

(1.) How is force estimated in Statics? A horizontal prism or cylinder will produce the same effect, as if it were collected at its middle point.

(2.) If several forces in the same plane tend to turn a body round a fixed point, and keep it in equilibrium, the sum of the moments of the forces tending to turn it in one direction is equal to the sum of the moments of those tending to turn it in the other.

How does the moment of a force measure its effect to turn it round a fixed point?

(3.) Assuming the parallelogram of forces, determine the resultant of any number of forces in the same plane acting on a point.

At any point in the circumference of a circle two equal forces act in directions passing through two fixed points on the circumference. Shew that the resultant of these forces passes through a fixed point.

(4.) Find the ratio of the power and weight in that system of pulleys where each hangs by a separate string (1) when the strings are parallel, (2) when they are inclined to the horizontal bar at angles  $\theta_1$ ,  $\theta_2$ ,  $\theta_3$ , &c., respectively.

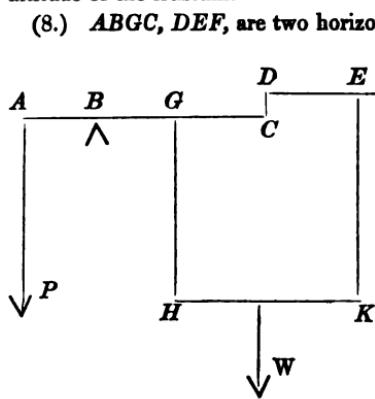
Suppose the number of parallel strings to be 8 and 1, 2, 3, &c., inches, their respective distances from each other, find where the weight must be attached to the cross bar in order that it may be horizontal: the weights of the pulleys not being taken into consideration.

(5.) Explain the term virtual velocity; and apply it to find the condition of equilibrium on the screw. Would it be applicable if there were no friction between the outer and inner screw?

(6.) All couples tending to turn a system in the same direction, are statically equivalent whose planes are parallel and moments equal.

How are couples estimated numerically and why?

(7.) Find the distance of the centre of gravity of the frustum of a cone from the base;  $a$  and  $b$  being the radii of the two ends, and  $c$  the altitude of the frustum.

(8.)  $ABGC, DEF$ , are two horizontal levers without weight,  $B$  and  $F$  their fulcrums, the end  $D$  of one lever rests upon the end  $C$  of the other,  $Hk$  is a rod without weight suspended by two equal parallel strings, from the points  $E$  and  $G$ . Prove that a weight  $P$  at  $A$  will balance a weight  $W$  placed anywhere on  $Hk$ .  


$$\text{if } \frac{EF}{DF} = \frac{BG}{BC} \text{ and } \frac{P}{W} = \frac{BG}{AB}$$

(9.) A uniform rod rests on a smooth fulcrum with one end on a rough horizontal plane, shew that the extreme position in which it will rest is given by the equation

$$a \sin 2\theta \sin (\theta + a) = 2h \sin a.$$

$2a$  being the length of the rod  $h$ , the height of the fulcrum above the plane, and  $\mu = \tan a$ .

#### FOURTH CLASS.

#### PLANE TRIGONOMETRY.

##### *Morning Paper.*

(1.) Explain the principle by which the signs of the Trigonometrical lines in the different quadrants are determined; and from this give the proper signs to the tangent, secant, and versed sine in the third quadrant.

(2.) Expand  $\cos(A-B)$  when  $A$  is  $> 180$ , and  $< 270^\circ$ , and  $B$  of the form  $(180 - C)$ , where  $C$  is  $< 45^\circ$ . Construct the figure for the quadrant in which the angle  $(A-B)$  may be situated.

(3.) Find the number of degrees both French and English in an arc, which is equal to the length of the radius.

Find the length of an arc subtending an angle of  $11^\circ 9' 36''$  in a circle whose radius is 50 yards.

(4.) Prove the following formulæ—

$$(1.) \tan^2 A - \tan^2 B = \frac{\sin(A-B) \sin(A+B)}{\cos^2 A \cdot \cos^2 B}$$

$$(2.) \frac{1 + \sin A}{1 + \cos A} = \frac{1}{2} (1 + \tan \frac{A}{2})^2$$

$$(3.) \frac{\sin 3A + \cos 3A}{\sin 3A - \cos 3A} = \frac{2 \sin 2A + 1}{2 \sin 2A - 1} \tan(45 - A)$$

adapt the formula (3) to radius ( $r$ ).

(5.) Express  $\sin \frac{A}{2}$  and  $\cos \frac{A}{2}$  in terms of the sides of a triangle,

and explain the meaning of the double sign in both results.

(6.) Prove Demoivre's theorem when the index is fractional, and shew that it has as many values as units in the denominator of the index.

(7.) Express the length of an arc in terms of its tangent, and apply the formula to obtain a rapidly converging series for calculating  $\pi$ .

(8.) A person standing at the edge of a river observes that the top of a tower on the edge of the opposite side subtends an angle of  $55^\circ$  with a line drawn from his eye parallel to the horizon; receding backwards 30 feet, he then finds it to subtend an angle of  $48^\circ$ . Determine the breadth of the river.

$$\log. \sin 7^\circ = 9.08589$$

$$\log. \sin 35^\circ = 9.75859$$

$$\log. \sin 48^\circ = 9.87107$$

$$\log. 3 = .47712$$

$$\log. 1.0493 = .02089$$

(9.) Having given the logarithm of two consecutive numbers to find the logarithm of a number next superior.

Construct a table of proportional parts by which the logarithms of all numbers between 3.75450 and 3.75460 may be computed, and prove the process.

(10.) Shew fully how to construct a table of natural sines.

What is the use of formulæ of verification? Prove one.

## FIRST CLASS.

## ASTRONOMY.

*Afternoon Paper.*

(1.) Define the terms *Pole of the heavens, Meridian, Zenith, Equator*. What two causes principally prevent the line joining the centre of the earth with a point on its surface from being, in general, the vertical line at that point? At what point on the Earth's surface is it vertical.

(2.) Explain the cause of the change of the seasons. In different years are they of different lengths?

(3.) Describe the transit instrument and the errors of adjustment to which it is liable.

Find the azimuthal deviation from the meridian of a transit instrument, from the observed superior and inferior transits of the same circumpolar star.

(4.) Enumerate the different methods of finding the latitude of a place on the Earth's surface.

Shew how to find the latitude and hour angle, from two altitudes of the sun and the time between.

(5.) What different kinds of time are employed in Astronomy?

When is it  $0^h 0^m 0^s$  according to each. What is Equinoctial Time?

Given the length of the mean tropical year equal to  $365^d 5^h 48^m 51.6^s$  find the length of the sidereal day.

(6.) Explain the physical causes of the Precession of the Equinoxes. And shew that the precession of a star in right ascension in  $t$  years

$$= t 50''.2 (\cos \omega + \sin \omega \tan \delta \sin \alpha.)$$

(7.) Explain the cause of Astronomical refraction and the effect produced by it on the apparent positions of the heavenly bodies.

Determine the coefficient of refraction from observations of circumpolar stars.

(8.) What is parallax? Express the parallax of a heavenly body in terms of its distance from the earth, its observed zenith distance, and the radius of the earth.

If  $p$  be the moon's parallax, find approximately the greatest proportional error which would arise in putting  $\sin p = p$ ,  $\cos. p. = 1$  supposing the greatest horizontal parallax of the moon to be  $1^{\circ}$ .

(9.) Explain the cause of aberration. By whom was it discovered and in what manner? By what observations had the velocity of light been previously determined.

Shew how to find the aberration of a given star in latitude and in right ascension.

(10.) What is the equation of time? Explain the cause to which it is principally due. Shew that whatever be the position of the perihelion of the earth's orbit, it must vanish four times a year.

(11.) What is the reason that in tropical climates the twilight generally is very short compared with its duration in higher latitudes?

Find at what times of the year the twilight is shortest, and its duration then in London, the latitude being  $51^{\circ} 30'$ , assuming that near the equinoxes (March 21, September 22,) the sun moves with a motion in declination of  $23'$  daily.

$$\text{Given log. tan. } 9^{\circ} = 9.19971 \quad \text{log. sin. } 9^{\circ} = 9.19433$$

$$\text{log. sin. } 51^{\circ} 30' = 9.89354 \quad \text{log. cos. } 51^{\circ} 30' = 9.79415$$

$$\text{log. sin. } 7^{\circ} 7' = 9.09304 \quad \text{log. sin. } 14^{\circ} 33' = 9.40006$$

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### SECOND CLASS.

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#### PROBLEMS.

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#### *Afternoon Paper.*

(1.) It is found that on mixing 63 pints of sulphuric acid, whose specific gravity is 1.82, with 24 pints of water, one pint is lost by their mutual penetration; find the specific gravity of the compound.

(2.) Suppose a vessel one foot long, nine inches wide, and  $1\frac{1}{4}$  feet deep, to be filled with water to  $1\frac{1}{5}$  of the top: what sized cube whose specific gravity is  $\frac{1}{2}$  heavier than water, should be placed in it to make the water reach the brim.

(3.) A cylinder floats in water, its base being 4 inches below the surface, when an ounce weight is placed upon it it sinks another inch; shew that its weight is 4 ounces.

(4.) A person employs three sets of men to pump the water from a well which is 20 feet deep and 6 feet in diameter; the pressure of the atmosphere being equal to a column of water 32 feet in height—and the pump discharges 1017.8784 cubic inches of water at every stroke. How must they divide the work so that each may do an equal share of it, supposing the well to be quite full at the commencement, and that the first

set of men finish their work previous to the commencement of the second, and the second before the third.

(5.) Two conjugate diameters are produced to intersect the same directrix of an ellipse, and from the point of intersection of each one a perpendicular is drawn on the other, prove that these perpendiculars will cut one another in the nearer focus.

(6.) Find the locus of a point such that if from it a pair of tangents be drawn to an ellipse, the product of the perpendiculars dropped from the foci upon the line joining the points of contact shall be constant.

(7.) Shew that the equation to the locus of the middle points of all chords of the same length ( $QC$ ) of an ellipse is

$$C \frac{a^4 y^2 + b^4 x^2}{a^4 y^2 + b^4 x^2} + \frac{x^2}{a^2} + \frac{y^2}{b^2} - 1 = 0.$$


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### THIRD CLASS.

#### DYNAMICS.

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#### *Afternoon Paper.*

(1.) State the third law of motion, and explain the several terms in it, apply it directly to the following question. Two bodies, whose masses are given, are placed on a horizontal table, at the extremities of a fine elastic string, which is stretched; determine the motion. If the bodies are inelastic and impinge on each other with the velocity acquired, what will be the motion after impact.

(2.) Two smooth bodies of given masses moving with given velocities strike directly against each other. It is required to find the velocity of each, after impact.

(3.) Prove the formulæ  $v = ft$ ,  $s = \frac{1}{2} ft^2$

Divide the length of an inclined plane into two parts, so that the times of descent down them may be equal.

(4.) Shew that the curve described by a projectile is a parabola, and the velocity at any point is that acquired by falling from the directrix.

(5.) To find a point where a projectile will strike an inclined plane through the point of projection, and its distance, or range on the inclined plane; find the greatest height which the projectile attains above the plane.

(6.) What must be the inclination of a cannon to the horizon, and the velocity of a ball projected from it, that the latter may strike the ground at two miles distance, after having just passed over a hill 100 feet high at the distance of one mile, neglecting the resistance of the atmosphere.

(7.) If a body be thrown directly upwards with a given velocity, the resistance of the air being  $= k v^2$  where  $k$  is small, find the height to which it ascends and the time of ascent.

(8.) A body oscillates in a cycloidal arc, acted upon by gravity and by a small constant retarding force ( $f$ ) in the direction of its motion at every point; shew that the time of oscillation is the same as if this force had not acted, and that the decrement of the arc described in one oscillation  $= \frac{2fl}{g}$

(9.) A perfectly elastic ball falls from a height  $h$ , on a plane inclined 30 degrees to the horizon, shew that it will strike the plane again after an interval equal to twice the time of its fall, and that its range on the plane will be 4 h.

(10.) A spherical particle of which  $\epsilon$  is the elasticity, is projected with a velocity  $v$  at any angle of projection  $\alpha$ , and at the instant of attaining the greatest altitude strikes a similar equal particle falling *downwards*, with a velocity equal to  $\frac{v}{2}$  at the point of collision; to find the distance of the particles at the end of  $t$  seconds after impact.

#### FOURTH CLASS.

#### PLANE TRIGONOMETRY.

#### *Afternoon Paper.*

(1.) Having given the three sides of a triangle, give the different methods of calculating the angles; and shew which is best when one side is very large compared with the other two.

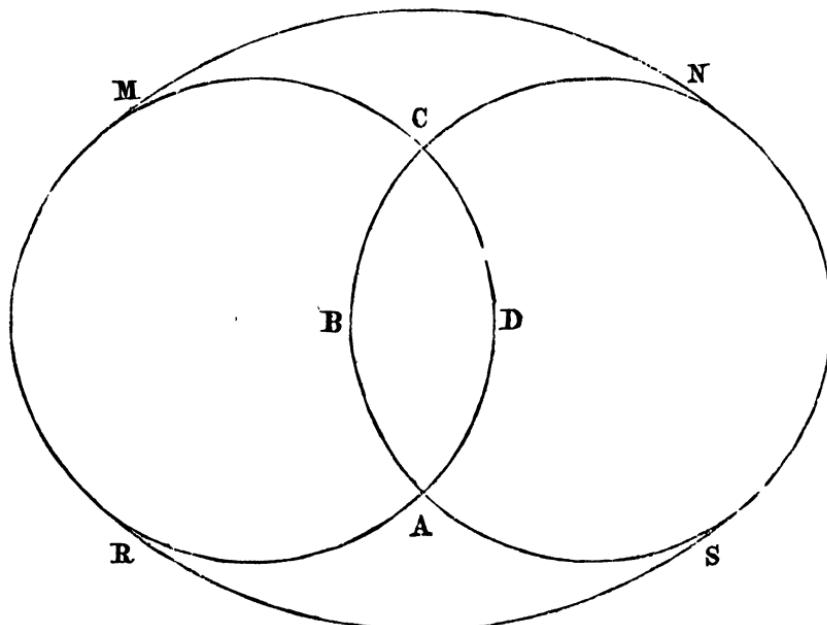
(2.) Explain the apparent absurdity of assuming  $x + \frac{1}{x} = 2 \cos \theta$

Assuming  $(\cos m\theta - \sqrt{1 - \sin^2 m\theta}) = (\cos \theta - \sqrt{1 - \sin^2 \theta})^m$  express  $\tan m\theta$  in terms of  $\tan \theta$ , and its powers, and shew clearly how you determine the sign of the last term in numerator and denominator.

ex.  $\tan 7\theta.$

(3.) If  $a, b, c, A, B, C$ , be the sides and angles of a triangle then the radius of a circle described about a triangle whose sides are,  $a \cos A$ ,  $b \cos B$ , and  $c \cos C = \frac{1}{2}$  that described about the original triangle.

(4.) Two equal circles intersect at right angles, and with the points of intersection, as centres two arcs are drawn touching the circles, so as to form an oval ; shew that the space common to the two circles is equal to each of the spaces exterior to both.



(5.) If two observers  $A$  and  $B$ , at the distance of one mile from each other, see at the same moment a large bird, directly West and North-West of them respectively,  $A$  finds the angle of elevation made by the bird and a horizontal line to be  $45^\circ$ , and  $B$  finds it to be  $30^\circ$ ; required the distance of the bird from each of the observers, and its perpendicular height above the plane.

(6.) If  $(r)$  be the radius of the circle inscribed between the base of a right angled triangle, and the other two sides produced and  $r'$  be the radius of the circle inscribed between the altitude of the same triangle and the other two sides produced; the area of the triangle shall be equal to the rectangle  $rr'$

(7.) Expand  $\cos \theta$  in a series ascending by powers of  $\theta$ , and thence prove that

$$\cos \theta = \frac{\theta \sqrt{-1} - \theta \sqrt{-1}}{2}$$

Deduce  $\cos(\theta + \phi) = \cos \theta \cos \phi - \sin \theta \sin \phi$

(8.) Having given the chord of an arc of a circle; deduce an approximate rule for finding the length of the arc.

A semicircular arch is made with stones 3 feet long, the span of the arc being 40 feet, and its height 16 feet, what is the area of the front of the arch?

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### English Essay.

#### FOR ALL THE CLASSES.

On language as an instrument of civilization, with special reference to the effects which may be expected from the diffusion of knowledge through the medium of the English language in India.

### Vernacular Essay.

Diligence, Industry and Honesty are the principal means of increasing national wealth.

যত্ন পরিশুম এবং সরলতা দেশীয় সম্মতি বৃক্ষির প্রধান উপায়।

### Latin Essay.

Quis inter Romanos summum Imperatoris laudem, quis boni sanctique viri præ ceteris meruerit?

## JUNIOR SCHOLARSHIPS, 1851.

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CROMBIE'S ETYMOLOGY AND SYNTAX, PART II.*Morning Paper.*

(1.) Give rules for prefixing or rejecting the article in the phrases subjoined

“*A man* considered as a moral being may be defined to be *the* responsible animal.”

“Whoever has power abuses it: every page of history proves the fact:—*individual, body, the people*,—it is all the same,—power is abused.”

“More I try, less I succeed.”

(2.) In what cases does the verb precede its nominative case?

(3.) Certain nouns of the singular form, require sometimes a plural, sometimes a singular, verb.

Why is this? Give an example.

(4.) Priestley contends for the expression, “He is greater than *me*,” in preference to “greater than *I*.” Explain his reasons, and Crombie’s answer to them.

(5.) Adverbs have sometimes an article (definite or indefinite) prefixed to them. State the reasons and give examples of the above usage.

(6.) With what cases are interjections joined?

(7.) What is necessary to form a complete sentence?

In punctuation how does the colon differ from the period?

(8.) Name the different members of the following sentence.

“Though for no other cause, yet for this; that posterity may know we have not loosely through silence permitted things to pass away as in a dream, there shall be for men’s information extant thus much concerning the present state of the church established amongst us, and their careful endeavour which would have upheld the same.”

(9.) The relative agrees with its antecedent in what particulars?

Point out the antecedents to *this* and *it* in the subjoined.

“The more methods there are in a state for acquiring riches without industry or merit, the less will there be of either in that state; this is as evident, as the ruin which attends it.

### *Afternoon Paper.*

(1.) Point out the distinction between the following expressions.

{ A dark, scowling, infernal face appeared.  
Hither came a dark, a scowling, an infernal face.  
{ On his landing few espoused his cause.  
On his landing a few espoused his cause.

{ When I heard his speech.  
When I heard of his speech.

If we do good we shall do well, but how few that do well do good !

(2.) When the relative *who* refers to a personal pronoun as its antecedent, explain the difference of meaning according as the verb is in the first or third person.

*Example.* "I am he who commands you, or command you."

(3.) Under what circumstances do intransitive verbs govern the objective case?

(4.) When would you employ the subjunctive or conditional mood after a conjunction?

(5.) Certain prepositions only follow particular verbs and nouns. What prepositions may follow the verb "to start," and the adjective "disappointed," and what is the meaning of the resulting phrases?

(6.) Briefly correct *if necessary* the subjoined sentences.

The messenger came and told Brutus that his son has just died; and that he therefore cannot perform the sacrifice.

In consequence of the inundation the price of corn rose too much, and the people suffered great distress.

By this a Newton, a Lagrange, a Laplace were famous in their age.

Troubridge having run aground, signalled to the other ships to warn them of the danger.

In this eminent danger these first principals of defence were neglected: but the governor, when the matter was investigated, ingeniously confessed his error, and saved the rest from disgrace.

"When he inquired, Will I wait on you? I answered. By no means, I shall not allow it."

Andrien pleaded earnestly that he had no right to be hanged as a spy when he had merely obeyed the instructions of his general.

That we are capable of forming to ourselves an imperfect idea even of the infinite mind is, I think, a strong presumption of our own immortality.

“ Happily to me I had retreated back from the edge of the cliff.

“ The victories of Hannibal at land contrasted with those of the consul's on sea left little absolute advantage on either side.”

(7.) Modernise the following.

“ That which hath been ordained ill at the first, may wear out that evil in tract of time, and then what doth let but that the use thereof may stand without offence ?

“ Alcidamas the sophister hath many notable arguments to prove that voluntary and extemporal far excelleth premeditated speech.”

### HISTORY : STEWART'S BENGAL.

#### *Morning Paper.*

(1.) The date, and most remarkable circumstances of the first conquest of Bengal by the Mohammedans.

A brief account of the last expedition of the conqueror.

(2.) The slave viceroys of Bengal originally purchased by Altumsh and Bulbun (Balin), with the date and particulars of the revolt of the last of them.

The policy of promoting foreign slaves to the highest offices.

(3.) The date of the accession of the first of the independent Mohammedan Kings of Bengal ; with that of the expulsion of the last of them.

What King introduced African slaves into Bengal ?

The names of those who mounted the throne. By whom were they finally driven from the country ; and where, and under what name, did they afterwards settle ?

(5.) The circumstances and date of the death of the last of the Affghan Kings.

In what respects did the government of the Affghans resemble the Feudal system of Western Europe ?

(6.) An outline of the services performed by the Rajahs Todermul and Mān Sing.

(7.) The name and situation of the ancient capital of Bengal.

The dates, and circumstances of the removal of the seat of Government to the following cities, viz.

Gour.

Rajmahel.

Tondah, or Tonra.

Dacca.

Moorshedabad.

(8.) A brief account of the expiring effort made by the Affghans to recover superiority in Bengal, with its date.

Who ruled at Dacca at the time ?

*Afternoon Paper.*

(1.) The dates and particulars of two remarkable occasions on which the East India Company were indebted to British Medical Officers for privileges obtained by them ; with the nature of the privileges.

(2.) The dates of the establishment in Bengal of the Portuguese, the French, the Danes, and the Dutch; and the localities selected by them respectively.

(3.) When, and by what Viceroy, was Chittagong attached to Bengal? Whence did the expedition for its conquest set out?

(4.) The object of the deputation of Sir William Norris to the Court of Aurungzebe: and the result of the mission.

Trace the route pursued by him, after landing, to the Emperor's camp.

(5.) The changes introduced by Moorshed Kooly Khan in the collection of the revenue.

What sum did he annually remit to Delhi after paying all the expenses of his government?

(6.) The date of the accession, and that of the death of Ali Verdy Khan.

How was his reign for the most part occupied.

What means of protection against the common enemy did he permit the English to have recourse to?

(7.) The principal events which brought on the battle of Plassey; with its immediate consequences.

(8.) Does Stewart's History represent the life and action of a nation?

For the most part do glorious actions adorn, or great crimes stain its pages?

Select from it those facts which, in your estimation, are most praiseworthy.

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**Mathematics.**

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*Morning Paper.*

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**ARITHMETIC.**

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(1.) Sum up the fractions  $\frac{1}{2} + \frac{3}{4} - \frac{2}{3} + \frac{5}{6}$  and reduce each fraction to its corresponding decimal fraction.

(2.) How many cubic feet are there contained in a ship cabin  
feet. inch.

whose length is 7 1 $\frac{1}{2}$

,, breadth 5 5

,, height 5 11 $\frac{1}{2}$

(3.) Multiply  $(1 + \sqrt{-1})$  by  $(1 - \sqrt{-1})$ .

Divide 16 into two such parts that their product may be = 67.

### SIMPLE EQUATIONS.

(4.) Express the exact times when the hour and minute hands of a watch, will form straight lines between the hours of one and four.

(5.) Two different kinds of metal, weighing together more than  $P$  pounds, one of which is  $m''$  times as heavy as water, the other  $m'$  times, are to be united and to weigh  $m$  times as much as water. How many pounds must be taken from each piece?

### THEORY OF NUMBERS.

(6.) Shew that the product of any three consecutive whole numbers is divisible by 6.

(7.) Prove that when a number is represented in the form  $n = a^q \cdot b^r \cdot c^s$  &c., it will have  $(q - 1)(r - 1)(s - 1)$  &c. different divisors. By how many numbers is 720 divisible?

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### THEORY OF NUMBERS.

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#### *Afternoon Paper.*

(1.) Express the common number 70 in the binary scale; and reduce 123,46 of the denary to the duodenary scale.

(2.) The number 4504511 in the senary is expressed by 170571 in an unknown scale; find it.

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### Geometry.

(3.) Shew that similar right-lined figures are in the duplicate ratio of their homologous sides.

(4.) If from any point  $O$  within a triangle  $ABC$  there be drawn  $Oa$ ,  $Ob$ ,  $Oc$ , to the sides, and from the angles  $Aa'$ ,  $Bb'$ ,  $Cc'$ , be drawn parallel to these; shew that:  $\frac{Oa}{Aa'} + \frac{Ob}{Bb'} + \frac{Oc}{Cc'} = 1$

(5.) Planes to which the same right line is perpendicular are parallel to each other.

## Geography.

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### *Morning Paper.*

- (1.) Give a comparative description of Great Britain, France, and Russia.
- (2.) What republics are there in America? Give a description of each, and state of what countries they were formerly colonies.
- (3.) Describe the courses of the Mississippi, the Paraguay, the Euphrates, the Indus, the Brahmapootra, and the Irrawady.
- (4.) What four rivers have their sources in the Altain range, and in what lakes have the Sutledge, the Oxus, and the Oby, their sources?
- (5.) Describe the situations of lake Chad, the desert of Shams, the Volcano Demavend, the Prairies, the Pampas, Gibraltar, Singapore, Hong-Kong and Demerara. And on what islands are Stockholm, Copenhagen, Venice and Cape Horn?
- (6.) Give an account of the mountain chains of Asia, their situations, directions, extent, and elevations. Where is Kunchinginga, the highest known mountain?

Give a description of the Northern Provinces and States of India, their situations, chief cities, &c., name those under British protection, and those which are independent.

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### *Afternoon Paper.*

- (1.) The day, hour, and place, being given, how may we find by the globe, where the sun is then rising or setting, and where it is noon, or midnight?
- (2.) If the time at Greenwich indicated by a chronometer, be 2 hrs. 6 m. 30 s. at the same instant that it is 8 o'clock in Calcutta, what is the longitude of Calcutta? and for the same instant what time will it be at Bombay, the longitude of which is  $72^{\circ} 49' 19''$ .
- (3.) What are the trade winds and the Monsoons? In what regions do they respectively prevail? In what directions, and at what times do they occur? Where is the region of calms?
- (4.) Make a map of the Atlantic Ocean, and put down the situation of the principal capes, seaports, islands, &c.
- (5.) Make a map of the Malay Peninsula, including China, and the Philippine and Sunda islands.

## English Translation.

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### USE OF TIME—PUNCTUALITY—AND DISPATCH.

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#### *Morning Paper.*

Very few persons are good economists of their fortune, and still fewer of their time; and yet of the two the latter is the more precious. Young people are apt to think they have so much time before them, that they may squander what they please of it, and yet have enough left; as the possession of very great fortunes has frequently seduced people to a ruinous profusion—fatal mistakes, always repented of, but always too late.

“ Time is every man’s estate.”

I would earnestly recommend the care of those minutes and quarters of hours, in the course of the day, which people sometimes think too short to deserve their attention: and yet, if summed up at the end of the year, would amount to a very considerable portion of time.

Many people lose a great deal of their time by laziness, they loll and yawn in a great chair, telling themselves that they have not time to begin any thing then, and that it will do as well another time. This is a most unfortunate disposition, and the greatest obstruction, to both knowledge and business. Young persons have no right nor claim to laziness: being but just listed in the service of the world, they must be active, diligent, and indefatigable. Never put off till to-morrow what you can do to-day.

One method I will recommend to you, by which I have found great benefit in every part of my life: that is, to rise early; and at the same hour every morning, how late soever you may have sat up the night before. This secures you an hour or two, at least, before the common interruptions of the morning begin.

Our lives, says Seneca, are spent either in doing nothing at all, or in doing nothing to the purpose, or in doing nothing that we ought to do. We are always complaining that our days are few, yet acting as though there would be no end of them: and though we, in general, seem grieved at the shortness of life, we are wishing every period of it at an end. The youth longs to be of age, then to be a man of business, then to make up an estate, then to arrive at honours, then to retire.

### Bengali Translation.

#### Afternoon Paper.

অহ সত্যবীর কথা ।

পুর্বকালে হিন্দু নগরে মহামন্ত্র নামে এক যবনরাজ ছিলেন তিনি সমুদ্রপর্যন্ত ভূমণ্ডল শাসনকরিয়া রাজ্য করেন। মহামন্ত্রের ঐশ্বর্য্যাসহনশীল কাফররাজ সৈন্য সমুহেতে বেষ্টিত হইয়া মহা মন্ত্রের সহিত যুক্ত করিতে তাহার নিকটে গেলেন। যবনেশ্বর কাফররাজকে নিকটোপস্থিত জানিয়া বাহ্যিক দেশজ এবং অন্য দেশীয় লক্ষ লক্ষ অঙ্গোভূমেতে পরিবৃত হইয়া বগরোপান্তে গিয়া সমর স্বীকার করিলেন। তদনন্তর উভয় পক্ষের যুক্তে যবনরাজের ঘোকা সকল কাফররাজের বলবান বীরগণ কর্তৃক তাত্যমান হইয়া রুগ্ভূমি হইতে পলায়ন করিল। পশ্চাত যেমন সিংহভয়েতে হিন্দুযুধ পলায়ন করে সেই প্রকার মরণ ভয়ে পলায়মান নিজ ঘোকাগণকে দেখিয়া যবনেশ্বর কহিতেছেন হে আমার ঘোকা সকল তোমারদের মধ্যে রাজা কিম্বা রাজপুত্র এমত কেহ নাই যে সন্তুতি অরি ভয়েতে ভগ্ন আমার সেনাগণকে নিজ বাহ্যলে কিঞ্চিতকালের নিমিত্তে হির করিতে পারে। যবনস্বামির এই বাক্য শুনিয়া কর্ণাটজাতি নরসিংহদেব নামা রাজকুমার এবং চৌহানজাতি চাচিকদেব নামে এক রাজপুত্র এই দুই জন রাজাকে নিবেদন করিলেন হে স্বামি মীচগামি সলিল প্রায় শত্রুয়ে পলায়মান যে তোমার সেনাগণ তাহারদিগকে সন্তুতি কে নিবারণ করিতে পারে, যদি আপনি একক্ষণ ইতস্ততো ত্রুমণ করিয়। এখানে পুনশ্চ আসিয়া দেখেন তবে আমরা তোমার শত্রুকে খড়গ ধারের পরিচিত কিম্বা চিতাশায়ী করি।

বৰবাধিপতি কহিলেন তোমরাই সাধু তোমাদের দুই জন ব্যক্তিকে অন্য কোন পুরুষ এমত সাহস করিতে পারে। তাহার পর নৱসিংহদেব সাহস স্ফুরিতবাহ হইয়া বজুপাতের ন্যায় কশাদাতে অৰকে শীঘ্ৰগামী করিয়া এবং বিপক্ষবর্গের অলঙ্কিত হইয়া কাকুর রাজের লৈন্যমধ্যে প্রবেশ করিলেন। পরে নৱসিংহদেব অতিশয় উজ্জীৰ্ণ খেতচুড়ের উপস্থিত কাকুর-রাজের হৃদয়ে শল্যাত্মক পুহার করিলেন। কাকুররাজ সেই অন্ত পুহারে প্রাণ ত্যাগ করিয়া ভূমিতে পড়িলেন। সেই কালে চাচিকদেব ভূতলে পতিত এবং ত্যাকু জীবন সেই কাকুর-রাজের মন্তক ছেদন করিয়া যববেশ্বরের বিকটে আনিয়া দিলেন। যবনরাজ ছিৱ মন্তক দেখিয়া জিজাসা করিলেন এ মন্তক কাহার। চাচিকদেব উপত্যক করিলেন এ মন্তক কাকুর-রাজের। যবনরাজ পুনৰ্জ জিজাসা করিলেন কোন বীৱ কাকুররাজকে বন্ট করিয়াছেন। চাচিকদেব উপত্যক করিলেন হে রাজাধিৰাজ অনুপম পুরাকুম এবং নৱশ্রেষ্ঠ শ্রীনৱসিংহ-দেব কাকুররাজকে বন্ট করিয়াছেন আমি তাহার পশ্চাত গমন করিয়া কাকুররাজের শিরশেহন করিলাম। যবনবামী পুনৰ্জ্বার জিজাসা করিলেন নৱসিংহদেব কোথায় আছেন। চাচিকদেব কহিলেন হে ভূগাল কাকুররাজের সম্বিধিবন্তী এবং স্বামি সংহার জন্য কোপে কল্পিত কলেবৰ এমত বীৱগণ কৰ্তৃক হন্যমান প্রায় নৱসিংহদেবকে দেখিয়াছি সম্মুতি তিনি কোথায় গিয়াছেন এবং কোথায় আছেন তাহা আমি জানি না। সেইক্ষণে যববেশ্বর হত নায়ক পলায়মান শক্ত সেনা সকলকে দেখিয়া পরমাঙ্গাদিত হইলেন এবং পলায়িত বিপক্ষ সৈন্যের পশ্চাস্তামী বিজ সেনাগণকে কহিলেন হে আমার যোৰাগণ তোমরা কেন শক্ত সেনাগণকে বন্ট করিতেছ সম্মুতি আমার রাজ্য রক্ষাকৰ্ত্তা এবং কাকুররাজান্তক যে নৱশ্রেষ্ঠ শ্রীনৱসিংহদেব

তাহাকে আনিয়া দেও। পরে যবনরাজ অনুসন্ধান করিয়া অনেক নারাচান্ত্র প্রহারেতে ছিল তিনি শরীর এবং গলিত ঝুঁধি-রের সহস্র সহস্র ধারাতে স্কুটিত কিংশক পুক্ষের ন্যায় ও অতি-শয় বেদনাতে মুচ্ছিত নরসিংহদেবকে দেখিয়া তৎক্ষণাতে ঘোটক হইতে নামিয়া জিজ্ঞাসা করিলেন হে নরসিংহদেব তুমি বাঁচিব। নরসিংহদেব উত্তর করিলেন হে রাজাধিরাজ আমি যাহা করিয়াছি আপনি তাহা অবগত হইয়াছেন। নরপতি প্রভুত্বর করিলেন যে চাচিকদেব কহিলেন যে তুমি আমার যে শক্ত বিনাশ করিয়াছ তাহাতেই আমি তোমার সমন্ত কার্য জানিয়াছি। নরসিংহদেব কহিলেন আমি যাহার হিতেচ্ছাতে অতিশয় দুঃসাধ্য কর্তৃ স্বীকার করিয়াছিলাম যদি তিনি সে সকল জাত হইয়াছেন তাহাতেই আমার শ্রমকূপ বৃক্ষ ফলবান হইল অতএব আমি দীর্ঘ জীবী হইব। তদনন্তর যবনরাজ নরসিংহদেবের শরীরে অতিশয় মগ্নবাণ সকল উক্তার করিয়া এবং নানা প্রকার ঔষধ দেবন ও পথ্য প্রয়োগেতে অল্প দিনের মধ্যে নরসিংহদেবকে অক্ষত শরীর করিলেন। পরে যবনরাজ সহস্র উত্তমার্থ ও লক্ষ স্বর্গ আর ছত্র এবং চামর আর অনেক অর্থ দিয়া নরসিংহদেবের পুরস্কার করিলেন। প্রসাদ প্রাপ্ত হইয়া নরসিংহদেব যবনরাজকে নিবেদন করিলেন হে রাজাধিরাজ যুদ্ধ করা রাজ পুত্রদের স্বাভাবিক ধর্ম আমি কি অনুত্ত কর্তৃ করিলাম যে আমার এতাদৃশ সম্মান করিলেন সে যাহাহউক যদি আমার পুরস্কার বিহিত হইল তবে চাচিকদেবের সম্মান করুন তিনি সত্য প্রতিপালনের নিমিত্তে মহারাজের নিকটে শক্তর মন্তক আনয়ন করিয়া ও আমার যশঃপুশ্রূণা করিয়াছেন স্বকীয় পুরুষার্থ প্রকাশ করুন নাই ইনি মারণ চিহ্ন যে শক্ত মন্তক তাহা আনিয়াও আমি বৈবরি বিনাশ করিয়াছি ইহা কহেন নাই তরিমিতে প্রথমত চাচিকদেবের পুরস্কার কর্তব্য।

ପରେ ଚାଚିକଦେବ କହିଲେନ ହେ ରାଜକୁମାର ଆମାର ନିମିତ୍ତେ ଏ ପ୍ରକାର କର୍ତ୍ତବ୍ୟ ନହେ ଆମି କେନ ତୋମାୟ ଶୌର୍ଯ୍ୟର ଫଳ ଲାଇୟା ପରେର ଉଚ୍ଛିଷ୍ଟତୋଗୀ ହିଁବ । ତାହା କ୍ଷମିଯା ନରଲିଙ୍ଗଦେବ କହିଲେନ ହେ ସତ୍ୟବୀର ଚାଚିକଦେବ ତୁମି ମାୟ ତୋମାର ଏହି ସତ୍ୟତା ହେତୁକ ବୁଝିଲାମ ଯେ ତୁମି ପଣ୍ଡିତ ଏବଂ ସତିପୂର୍ଣ୍ଣ ଓ ଅତି ପ୍ରଶନ୍ନସନ୍ନିଯି ମହାଶୟ । ତମନ୍ତର ସବବେଶର ଏ ଦୁଇ ରାଜପୁତ୍ରେର ପରମପରାଲାପେ ହଟୁଟିଛନ୍ତି ହିଁଯା ଦୁଇ ରାଜକୁମାରେର ତୁଳ୍ୟ ପୂର୍ଣ୍ଣାର କରିଲେନ ।

## Urdu Translation.

## افلاطون کی وصیتوں کے بیان میں

افلاطون کہتا ہی کہ خدا کو پہچان اور اُسکے حق کو نگاہ رکھہ ۔ اور ہمیشہ اپنی ہمت تعلیم اور تعلم میں مصروف کر ۔ اور اہل علم کے علم کی زیبادتی کا امتحان نہ کر ۔ بلکہ شروع فساد سے باز رہنا اختیار کر اور حق تعالیٰ سے ایسی چیز مٹ مانگ کہ اُسکی منفعت کی طرف زوال کی راہ ہو ۔ بلکہ جو نیکیاں کہ باقی رہتی ہیں اُنکی طلب کر ہمیشہ بیدار رہ کے بدیوں کے بہت سبب ہیں ۔ اور جو نکیا چاہئے اُسے آرزو سے مت مانگ اور جان کے بندے سے خدا کا انتقام لینا غصب کے طریق پر نہیں بلکہ بطريق تادیب اور تہذیب کے ہی ۔ اور زندگی پر قانع مت رہ جب تک موت نہ آوے ۔ اور زندگانی کو بہتر مرت جان مگر جب کسی چیز کے حاصل کرنیکا وسیلہ ہو ۔ خواب اور آسایش کی رغبت نکر مگر بعد اُسکے جب تین چیز کا مسامنہ آپ سے تو لے ۔ ایک یہہ کہ تو قابل کرے کہ جس دن جو تو نے کیا ہی تجھسے خطا سوزد ہوئی ہی یا نہیں ۔ دوسرا یہہ کہ سوچ کہ اک کچھ کام کیا ہی یا نہیں ۔ تیسرا یہہ کہ کوئی کام تجھسے بسب قصور کے رہا گیا ہی یا نہیں ۔ یاد کر کہ اس زندگی کے آئے تو کیا تھا اور بعد اُسکے تو کیا ہوگا ۔ اور کسی کو ایذا نہے کہ عالم کے سب کام زوال اور تغیر کے

مقام میں ہیں ۔ بدیخت وہ شخص ہی جو عاقبیت کی باد سے غافل رہے ۔ اور گناہ سے نچھوٹے اور اپنی پونچی اُس چیز سے جو تیرے پاس نہ مرتکر ۔ اور مستحقوں کو نیکی پہنچانے میں اُنکے موال پر موقوف نرکہ اور اُسے حکیم مت جان جو لذت دنیاوی سے خوش ہو یا کسی مصیبت کے سبب جزء و فرع کرے اور ہمیشہ موت کو باد رکھے اور مسدود ہے عبرت پکڑ ۔ اور خسیں آدمیوں کو اُنکے بہت پے فائدہ بات کرنے اور بغیر پوچھنے جواب دینے سے پہنچاں ۔ اور جان کہ شریروہی شخص ہی کہ جسے شوارٹ اختیار کی ہو ۔ خوب سوچ کر بول اور کام کر ۔ اور سب کا دوست رہ جلد غصے مت ہوتا خفگی تیری خونو جاوے اور محتاج کی حاجت کل پر چھوڑ تو کیا جانے کل کیا ہوگا ۔ قیدیوں کی اعانت کر مگر جو خوب ہے بد میں گرفتار ہے ۔ جب تک دونوں کی بات نہ سمجھی اُنکے درمیان حکم نہ کر فقط قول ہی میں حکیم نہ بلكہ قول و عمل دونوں میں ۔ اسلئے کہ حکمت قولی اس جہاں میں رہے اور حکمت عملی اُس جہاں تک پہنچے اور وہاں باقی رہے ۔ اور اگر نیکی کے لئے تورنچ کہیں پہنچے تو رنچ نہ رہے پر نیکی رہے اور جو کسی بدی کے سبب تو لذت پائے تو لذت نہ رہے اور بدی رہ جائے ۔ اور اُس دن کو باد کر کے تجھ پکاریں اور تو بولنے سے عاجز رہے کچھ نہ منے اور کچھ نہ کہے اور باد بھی نہ کوئی ۔

#### WATTS ON THE IMPROVEMENT OF THE MIND.

##### *Morning Paper.*

1. Give a short account of the five methods described by Dr. Watts, of "improving the Mind in the knowledge of things."
2. What are the chief points requiring attention in learning a language?
3. What is meant by Memory: how does it differ from Judgment and Reasoning, and what are its uses?
4. Detail the particular rules laid down by Dr. Watts for the improvement of the Memory.

##### *Afternoon Paper.*

5. "Some effects are found out by their causes, and some causes by their effects." Explain and illustrate the meaning of these.

6. Enumerate the advantages of reading as a means of improving the mind.
7. What is meant by study? Show that without it no one can really become learned or wise.
8. What general rules, according to Dr. Watts, ought to be observed in all debates or disputes intended to find out truth, or detect error?

### Oral Examination.

#### PROSE.

*Tuesday, September 23.*

He, whose mind is engaged by the acquisition or improvement of a fortune, not only escapes the insipidity of indifference, and the tediousness of inactivity, but gains enjoyments wholly unknown to those, who live lazily on the toil of others; for life affords no higher pleasure than that of surmounting difficulties, passing from one step of success to another, forming new wishes, and seeing them gratified. He that labours in any great or laudable undertaking, has his fatigues first supported by hope, and afterwards rewarded by joy; he is always moving to a certain end, and when he has attained it, an end more distant invites him to a new pursuit.

It does not, indeed, always happen, that diligence is fortunate; the wisest schemes are broken by unexpected accidents; the most constant perseverance sometimes toils through life without a recompence; but labour, though unsuccessful, is more eligible than idleness; he that prosecutes a lawful purpose by lawful means, acts always with the approbation of his own reason; he is animated through the course of his endeavours by an expectation which, though not certain, he knows to be just; and is at last comforted in his disappointment, by the consciousness that he has not failed by his own fault.

That kind of life is most happy which affords us most opportunities of gaining our own esteem; and what can any man infer in his own favour from a condition to which, however prosperous, he contributed nothing, and which the vilest and weakest of the species would have obtained by the same right, had he happened to be the son of the same father.

To strive with difficulties, and to conquer them, is the highest human felicity; the next, is to strive, and deserve to conquer: but he whose life has passed without a contest, and who can boast neither success nor merit, can survey himself only as a useless filler of existence; and if he is content with his own character, must owe his satisfaction to insensibility.

## POETRY.

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When men of judgment creep and feel their way,  
 The positive pronounce without dismay ;  
 Their want of light and intellect supplied  
 By sparks, absurdity strikes out of pride :  
 Without the means of knowing right from wrong,  
 They always are decisive, clear, and strong,  
 Where others toil with philosophic force,  
 Their nimble nonsense takes a shorter course ;  
 Flings at your head conviction in the lump,  
 And gains remote conclusions at a jump :  
 Their own defect invisible to them,  
 Seen in another, they at once condemn ;  
 And, though self-idoliz'd in ev'ry case,  
 Hate their own likeness in a brother's face.  
 The cause is plain, and not to be denied,  
 The proud are always most provok'd by pride.  
 Few competitions but engender spite ;  
 And those the most, where neither has a right.

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N. B.—Each Junior Scholar will in turn read and explain the above passages to the Examiner, who will frame such questions connected with the grammatical construction, meaning, allusions, or references contained in them as he may consider calculated to elicit the knowledge possessed by the pupil.

The same questions are to be put to all candidates in the same school, care being taken that they are not known beforehand, or communicated by those who have been examined to those whose turn is yet to come.

The nominal value of the whole paper is 50 marks,—25 for Prose and 25 for Poetry.

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**ANSWERS**

**OF THE**

**MOST PROFICIENT STUDENTS**

**IN THE**

**Presidency and Mofussil Colleges.**

**H**

## A N S W E R S.

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### Literature Proper.

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#### HAMLET.

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##### *Morning Paper.*

*Answer 1st.*—We strike it in vain, and our attempt serves merely to expose the wickedness of our intention, while we are mocked and slighted by it, being unable to do it any injury.

*Answer 2nd.*—A little before the day dawns the cock begins to crow and make a shrill noise; so that it is commonly believed that it awakes the god of day (*i. e.* the sun) who is represented as travelling in his car. It is in this sense that this bird is called “the trumpet of the morn,” as giving us notice that the day is approaching.

*Answer 3rd.*—According to the pneumatology of the times, it was believed that every element was inhabited by its peculiar spirits, and that these spirits leave their respective abodes during the night to travel into a foreign element, whether aerial spirits wandering in the earth or earthly spirits ranging the air.

“Extravagant” here means, going out of its own element. It is frequently used in the sense of making an enormous expense, going beyond the just bounds of economy.

“Erring” here means, wandering from place to place. It is frequently used to signify, falling into errors and mistakes.

*Answer 4th.*—“Probation” means, proof.

The truth of which the object made “probation,” is that as soon as the cock is heard to crow, all sorts of spirits, that wander about in foreign elements during the night, hasten to their respective elements where they are confined during the day: and the spirit here added a new testimony to this truth.

*Answer 5th.*—The season here referred to is the time of the Christmas. The dove is here called “the bird of dawning.”

“Against” here means, before; so that the meaning is, before that season comes, &c.—“Against” is here used as an adverb.

*Answer 6th.*—Such is the holiness and gracefulness of the season, that at that time no planets strike each other in their revolution, which is believed to forbode evil, no fairy strikes with lameness or disease as in any other time, and no witch can enchant by all her spells and charms, but every thing is serene and peaceful.

The time is “so hallowed and gracious” on account of Christ’s birth being celebrated at that time.

*Answer 7th.*—But see the morning advances, which being reddened by the soft rays of the rising sun sheds its lustre from the east over that high hill, on the top of which dews are deposited.

Milton describes it "rosy-fingured morn" that sheds her bright red hue against the high wall.

*Answer 8th.*—"As needful in our loves, fitting our duty," means, that we should acquaint him with all the circumstances that we have observed, for two reasons, first, as we are bound to him in friendship and love, and secondly because this appearance of his father's ghost concerns him very nearly, so that it is our duty to inform him of this as we are his subjects and therefore bound to do him any good service that we can.

*Answer 9th.*—It is frequently observed in individuals that for some natural defect in them, whether arising, from the time of their birth, by the growth of some additional humour, (as sanguine, phlegmatic,) which often makes them act contrary to the dictates of reason, and for which they cannot be blamed (for nothing in nature can choose its own origin so as to select for the better); or by some other hurtful defect which urges them to break the rules of society; that these men having but one defect in them, being given them by nature or acquired by the influence of some star that presided in their birth, all their virtues (though they may be as pure as if grace herself was present, and as many as may be accumulated upon man) shall in the summing up of their qualities be censured for that particular fault.

RAJINDER NAUTH MITTER, *Hindu College,*  
*First Class, First Year's Senior Scholar.*

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### GRAY'S POEMS.

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#### *Morning Paper.*

*Answer 1st.*—"Thy milder influence impart."

Here two things are compared, the *mild* and the *vigorous* influence of adversity. The poet says, "Dread goddess" come not to me, clad in thy Gorgon terrors, but with a countenance benign and angelic.

"Philosophic train," &c.

The fruits of adversity which the poet calls "Her philosophic train" are these. When a man is borne away by the current of adverse fortune he ought not to be too much depressed. Because when adversity comes, it comes for his good only. He is able to bear up with future misfortunes with greater fortitude, and is able to reason with sense, on the impropriety of being dejected at the advance of adversity.

*Answer 2nd.*—"Teach me to love and to forgive."

Means.—Teach me to love others, and to forgive others, (i. e.) excite in me the feeling of love and generosity. This passage is probably taken from the Scriptures. "Thou shalt love thy neighbours as well as thyself;" and—"If you forgive your enemies, God shall forgive you."

"Exact my own defects to scan,  
What others are to feel, and know myself a man."

(i. e.) Teach me exactly to examine my own defects or failings, and give me to know, the suffering of others, that I may feel myself mortal, like all men.

*Answer 3rd.*—"Celestial fire" means,—heavenly inspiration.  
"Or waked to ecstasy the living lyre."

(i. e.) or would have been great masters of lyric poetry, waking the trembling strings of the "living lyre," with ecstasy and rapture.

*Answer 4th.*—"Spoils of time" are the improvement and advancement of knowledge as time wings forward, which adorn and enrich the "ample page."

The word *ample* is here very appropriately used, it seems as if the page of knowledge was vast and various in its information, as if it comprehended all that the fertile genius of man has been able to invent.

*Answer 5th.*—"Left the warm precincts of the cheerful day."

Means, left behind this radiant world,—this charming spot, where the days are ever cheerful and not gloomy. Some writers among whom is the anonymous critic, say, that the "warm precincts of the cheerful day" means the *body*. Common sense however shews us the impropriety of the explanation.

"E'en in our ashes live their wonted fires."

So great is the vanity of human wishes, that we desire our friends, in fact the whole world, to remember us when we are in the tomb, as they used to do, in our absence.

"Fires" here means *desire*.

"Pleasing anxious being" means, the pleasing state of this, our present existance anxious for still greater pleasures of this world.

*Answer 6th.*—Gray here alludes to Queen Elizabeth, the Virgin Queen of England. She was a true Briton, for the blood of the race of Tudor ran in her veins.

The Bard refers with satisfaction to this circumstance, because he foresaw, that a long line of monarchs of Saxon descent was to rule over Britain. This was fulfilled in the house of Tudor whose first Sovereign was Henry VII.

*Answer 7th.*—"What strings symphonious tremble on the air" &c. Here Gray alludes to the poets who flourished in the court of Elizabeth.

"The strings trembling in the air" is a very beautiful expression. So we have in the Progress of poesy "and give to rapture all thy trembling strings." "The strains of vocal transport." This expression also is peculiarly elegant. How it brings before the reader, the pictures of wandering minstrels and "errant damoiselles" who were greatly patronized by the queen and her gay ministers and courtiers.

*Answer 8th.*—The poets here alluded to are Spencer and Shakspeare. The lines

"The verse adorn again  
Fierce war, and faithful love,  
And truth severe in fairy fictions drest."

Allude to Spencer, because we see it from his own writings

"Fierce war and faithful love  
Shall moralize my song."

#### FAIRY QUEEN.

The last three lines alludes to Shakspeare because it was he, that brought on the stage the moving scenes of grief, pale and emaciated,

pleasure, mingled with pain, to enhance the blessing, and horror "tyrant of the throbbing breast." In other words they mean, the tragedies and comedies of that immortal poet.

*Answer 9th.—"A voice as of the cherub choir,  
Gales from blooming Eden bear"*

Means

A voice (whose harmonious and melodious strains, seem to proceede from the "cherub choir,") describes the blooming garden of Eden, with its living fountains and gales breathing over banks of heavenly flowers.

The above lines allude to Milton, and the expressions, "cherub choir" and "Gales from blooming Eden, are happily applied, Because it was Milton who

"Passing the living bounds of place and time"

described the blooming and ever-green garden of Eden, the magnificence of the Eternal's throne, and the choir of cherubs that sing night and day the praise of the Almighty.

OMESH CHUNDER DUTT, *Hindu College,*  
*Junior Scholar, First Year, Fourth Class,*  
*Senior College Department.*

### COLLINS.

1.—'In *earliest* Greece to thee with *partial choice*  
The grief-full muse *addresst her infant tongue.*'

'Partial choice' means fond preference the muse preferred fear to the other passions, grief, pity &c.

'Addrest her infant tongue'—that is the tragic muse, while yet but incipient in Greece, paid homage to fear. The early tragic writers devoted themselves chiefly to the excitation of awful feelings.

'Earliest Greece'—Earliest, because it is there that the arts and sciences first flourished that illuminate the world—it is said to be the first country in the world which gave birth to civilization and all the polished arts of life.

2.—'For not alone he mused the poet's flame  
But reached from virtue's hand the patriot's steel.'

Not only did he (Eschylus) possess the noble inspiration of a poet but his heart glowed also with the fire of patriotism and it was that virtuous emotion which led him to handle the sword of the warrior and fight for his country in the glorious battles of Marathon and Salamais.

3.—'Though gentle pity *claim her mingled part,*  
Yet all the *thunders of the scene* are thine.'

Pity claims her mingled part in the tragedy in question viz. Sophocles' Oedipus. Though, he says, the tragedy excites *some* pitiful sensations in our hearts yet all thunders of the scene—all the dreadful portions of it which strike the reader, are thine oh fear! It is not so much to infuse in our minds tender sensations of pity as to strike us with terror and awe.

4.—'But thou O hope with eyes so fair  
What was thy delighted measure?

Often would pleasing hope softly promise future pleasure and bid us expect her lovely scenes with cheerful delay,—still would her happy notes leave a lingering echo behind, such that every heart would gladly repeat and confirm.

5.—O Music, sphere-descended maid  
Friend of pleasure, wisdom's aid

Music is the friend of pleasure—there is, indeed, nothing so charming to every mind as music—nothing can have such a universal effect upon mankind as music. It communicates into our soul feelings which vibrate in unison with every string of the heart and its influence is consequently felt (though in different degrees) by the rude and the learned the philosopher and the peasant by the sad and the cheerful. Even those who are sunk in the horrors of despair or dejected by grief own the soothing influence of music!

Music is wisdom's aid—because music purifies the heart through the medium of the various feelings of pity, sadness, horror &c. Indeed there is a kind of music which is dangerous to the interests of morality and religion but it must be owned on the other hand that there are species of it which disturb us by pity, enlarge our minds by sublimity and refine our hearts with purity.

RASSELAS.

6.—The reasons laid down by Johnson to account for the fact that the most ancient poets are considered as the best are as follow.

In the first place he considers it as probable that as every other kind of knowledge is acquired gradually and requires the efforts of successive generations to carry it to any degree of perfection but as poetry is a gift conferred at once—as it is born, not made that therefore the first poets of a country are generally the best.—In the next place he supposes that the first poetry of a nation surprised them as a novelty and they concurred to give it that high credit chiefly on account of its novelty, disregarding the intrinsic value of the poetry itself.

Lastly he gives it as a reason that as the province of poetry is to describe nature and passion which are invariable the first writers secured for themselves all striking images and the most probable occurrences for fiction, their followers could only tread the *beaten path* and were therefore not entitled to that veneration which their predecessors had gained by their originality and strength.

It may perhaps be stated as a reason to the fact in question that so long as a people does not wholly emerge from barbarism—so long as it does not direct its interests to the affairs of a highly civilized society—to commerce navigation &c. the people remains highly imaginative and the poets who flourish during that age are remarkable for their strength and invention. People of a highly refined society turn their thoughts to the various duties of active life—reason is always to be exerted while imagination is not called forth at all.

7.—What man would pay to beings of a higher order—to beings of the Angelic World.

Poetry is born not made.

The province of poetry is to describe the beauties of nature and paint the mysteries of the human heart. Such occurrences as are not wholly above nature and reality—such as may be seen in real life.

8.—It is commonly found that the earliest writers are the followers of nature—they can bring forward highly picturesque images—and such striking and prominent features as recal the object of their description to the mind of every reader at the very first sight.

‘ Their followers of art’—poetry is now sophisticated, artificial, it wants natural vigour, it is languid, elegant and refined Dryden for instance is a manly vigorous and noble writer.

Grays poems on the other hand are artificial it possesses a methodical, borrowed dignity, He wants nature—‘ He is as Dr. Johnson says, ‘ tall by walking on tiptoe.’

MOORALY DHUR SEN, *Hindu College*,  
*Fourth Class, Junior Scholar, First Year*,  
*Senior College Department.*

### BACON'S NOVUM ORGANUM.

*Answer 1st.*—Words are formed by abstractions, whether logical or illogical. But as they are made according to the understanding of the vulgar, many of them convey very wrong notions of things of which they are made the signs. Wise and learned men invent new words and devise new and correct definitions in order to remedy this evil, but they cannot throw off the yoke, since the mind is become very familiar with them.

The understanding is here compared to a looking glass, which is so distorted and placed in such a wrong position, as not to reflect the true image of things that are set before it.

*Answer 2nd.*—Words are generally formed according to the capacity of the vulgar, that is they are formed not by philosophical abstractions but in such a way as to be understood by all men. Now common people cannot enter so far into the nature of things as philosophers do, they only look on the surfaces of things, and consequently words, which are formed by common consent, are made according to vulgar conceptions. In the same way definitions are formed not by logical examination, but a consideration of the surfaces of things, for common people cannot enter deeper. That this opinion is true will appear clearly, when take into consideration the meaning annexed to the common phrases “the sun sets,” “the sun rises.” It is to philosophers and scientific persons, that the case appears to be otherwise. But common people who see that a relative change of position between us and the sun takes place, conceive and firmly believe that the sun moves, and the earth is stationary. Hence the phrases “sun rises,” “sun sets,” which we daily use in our conversation, were introduced in language. Again, as to definitions, let us take the term oxygen, and see what is signified by it. From its derivation, it means, “the originator of acid.” When this term was formed it was supposed to be the only originator of acid but it is now found that, it is not *the* originator of acid, but *a* originator of acid.

“Words cry out”—that is, when men endeavour to remove these wrong distinctions, the words, by which definitions are expressed, but which are themselves wrongly abstracted, throw obstacles.

*Answer 3rd.*—That the objection that “definitions consist of words, and words generate words” does not apply to mathematics, appears clearly when we consider that essential difference there is between that science and all other sciences. In “natural and material things” words are formed from an observation of facts, how wrongly that observation may be carried on, while in mathematics the terms used of are wholly founded on *hypothesis*. But in material things, the case is quite different. Here the terms are not hypothetical, but are derived from facts, but in many cases these facts are not properly observed, and sometimes it is impossible to express in words what is observed in fact. For instance, when I am asked what is the meaning of “sensation,” I cannot explain it to another who had never any sensation. I may say it is “feeling,” but again I may be asked what is “feeling,” and it will be impossible for me to explain it. I understand what is “benevolence” but I cannot explain what it means to a man who was never *benevolent*. This difficulty, which is derived from the imperfection of language, is not perceived in mathematical science, where the terms are definite and precise in their significations.

*Answer 4th.*—Bacon’s philosophy itself serves as an example of fruits being the vouchers for the truth of philosophies. Many modern discoveries and inventions owe their origin to the philosophy of Bacon. Newton himself was led by the light of his philosophy, and made many discoveries by its assistance. The earlier Greeks paid some attention to experiment and observation, and made discoveries upon sound principles. The fruits which accrued from their systems are many and serve to show that the authors proceeded on true principles.

*Answer 5th.*—By “grapes and olives” the author means, “fruits” and utility.

By “thistles and thorns” he means, disputation among authors.

The philosophy of Aristotle was fitted for disputes, making answers by devising means of defences. The philosophies of the later Greeks were framed for the same purpose, the authors being only solicitors of raising sects, defending their favorite opinions, and consequently making contentions with each other. The philosophers of the middle ages did the same thing. They even went so far as to travel through the different parts of Europe and making disputes and altercations with philosophers and scientific men.

*Answer 6th.*—The kingdom of man over nature is limited by one condition, that it must be exercised in conformity with the laws of nature. “He must obey that he may command.” There are many things in nature which kings cannot get possession of by means of money or force, neither can they have any account of them by their spies and intelligencers, as in civil affairs, or by the discoverers and naval officers. They may conquer an enemy by force but cannot conquer nature without a knowledge of her laws. They may command a subject to serve them, but cannot make nature serve without previously obeying her. They may get intelligences and secret accouts of foreign countries by means of ambassadors, but it is not within their power to get out the secrets of nature without closely adhering to her in person and thereby finding axioms. Their seamen and discoverers may discover lands hitherto hid from the knowledge of mankind, but they cannot make discoveries in nature without proceeding in the method pointed out in the *Novum Organum*. When a man begins to

make discoveries in nature, he should constantly bear in mind that "knowledge is power," that is, without having a sufficient knowledge of the laws and axioms of nature, it is impossible for him to enter into nature.

*Answer 7th.*—According to Bacon the true end of the sciences is to enlarge the kingdom of man over nature and to increase the sources of his enjoyment. Other writers say that the true end of the sciences should be "truth." Of this Lord Bacon cannot be said to have been ignorant. The mark of a science founded on true principles, is utility and fruits, "for fruits are as the vouchers and securities for the truth of philosophies." In one place he says, that "truth" is undoubtedly the true end of philosophy. Truth and utility are ever consistent with each other and both are alike serviceable, nay even *utility* is of greater service, since by its means we are enabled to know that truth has been found. So that, that the object of all sciences is truth, did not escape Bacon's observation, but that he purposely kept it in the back ground.

*Answer 8th.*—The grand object of Bacon's philosophy was to make a reformation in the sciences that were prevalent up to his time. Now, every reformation consists of two parts, the destructive and the constructive. The former part he undertakes in the 1st part of the *Novum Organum* and succeeds completely in it. The grand principle of all the sciences, which he mentions in the 1st aphorism (that man, who is the servant and interpreter of nature, can understand and act as far as he has observed in the order of nature; beyond neither his knowledge nor his power extends), has not hitherto been mentioned by any philosopher. The principle which is the ground work of Bacon's philosophy, is the principle of induction. It is true the ancients made use of induction, which is natural to every mind, but their induction was not such as the thing required. They did not make sufficient number of experiments and observations, but from a small number of familiar instances, made general axioms. But Bacon's method proceed from experiments to lesser axioms, thence to middle ones, and then to axioms of greater generality and last to the most general. Again, the ancients did not collect negative instances, which, he says, are of great use, as by them axioms are tried as metals and other things by fire. The axioms of the ancients were formed for the explication of few facts, but they used to apply generally, and when any contradictory instance occurred, they used to slight and reject it under the pretext of exceptions. They ancients sought for no assistance for the mind, but left it to itself. But this Bacon says is very foolish; it is the same thing as to suppose that the hand is able to accomplish much without the aid of instruments. Aids must be supplied to the understanding, no less than to the hand, unless men wish to move continually in a circle without considerably advancing.

Bacon clearly points out the true object and end of the sciences, and points out the way in which men should proceed in discoveries. But the ancients had no determinate end in view and it is impossible to come to any certain knowledge when the end is not rightly fixed, and if the end had been fixed they chose an impassable way to proceed in.

In another place, he says, that the natural history of the ancients was formed its own sake, but if we wish to make improvement in philosophy, we ought to have such a history as shall contain it the description of animals, vegetables, &c., as also the various experiments in the mechanic arts.

The minds of men he says beset by a great number of idols and prejudices, which he therefore proposes to remove by the raising of axioms and notions by means of induction.

The errors of the human mind are fundamental, so that it is necessary that the instauration must be begun from the very foundation, that is, from natural history. He therefore removes the idols from the mind, points out the signs of false philosophy, and enumerates the causes of errors. And in order to prevent men from despairing, gives grounds of hope, and having cleared the mirror places it in a right position as to received things in a proper manner.

RAJINDER NAUTH MITTER, *Hindu College,*  
*Third Class, First Year's Senior Scholar.*

## Mental Philosophy.

### Morning Paper.

*Answer 1st.*—As a law of nature is a general proposition enunciating the order of sequence which the phenomena of the physical world observe; so a law of mind, may be defined (according to Stewart's view) to be a proposition enunciating the order of succession which the phenomena of the mental world observe. These laws express the relations between the several faculties and the several acts of the mind, as connected with one another in the order of cause and effect. Such for example are the laws respecting the association of ideas, or the law asserting the dependence of memory on that act of mind called *attention*, such again is the law of mind leading a man to believe in his own existence, the moment he is conscious of the existence of any of the sensations excited by external objects, and the law of mind leading a man to connect the belief of his own personal identity with all his reasoning operations.

The process by which these laws are to be ascertained is the same, according to Stewart as that by which the laws of the physical world are to be ascertained viz. by observation and experiment. A close attention to the objects of our consciousness will enable us to discover the relation that subsists between the operations of our mind and when we have sufficiently sifted the results of our observations, we shall at last discover the laws that regulates our mental operations. The inductive method is the means which we must make use of, in our investigations of the laws whether of physics or of mind.

*Answer 2nd.*—The following are the causes of the retardation of the progress of mental philosophy, taken notice of by Stewart. 1. A belief that the laws which regulate the operations of the human mind are beyond the reach of our faculties to discover and 2. That even were they known, they would be of no practical utility to us. 3. The lateness of the period when they first came to be successfully cultivated. 4. Inattention to the proper limits of human investigations. 5. Because analogy of the laws of matter were not used with sufficient caution so that men, engaged in the investigation of the laws of mind, often rested satisfied with their exertions, if they could find some affinity between a mental operation and the laws which regulate the phenomena of the material world.

*Answer 3rd.*—The word “Reason” is used to signify that faculty of the human mind which enables us to distinguish 1 truth from falsehood, 2 right from wrong 3 and which enables us to adapt means for the accomplishment of an end. It was originally used to mark the distinctions whatever they be, which separated men from brutes and came afterwards to be limited by our notion of the obvious nature of these distinctions. Hume and others, include only the 1st and 3rd of these significations within the term “Reason.” Intuition is that faculty of the mind which enables us to perceive the truth in matters which are self-evident but reasoning enables us to perceive the truth of propositions by drawing a chain of consequences and through the medium of other truths. Stewart is at great pains to show that there is no radical difference between these; but he himself confesses that reasoning involves the idea of memory together with that of intuition. Here then lies the chief distinction between these, that one is a simple uncompounded faculty, the other the combination of several, at least of two. Stewart illustrates the distinction between them by saying, that our simple judgments, are like stones prepared by the chisel, on each of which we can raise ourselves as upon a pedestal to a small elevation, but reasoning is like these stones combined together to form a staircase, in the formation of which, great skill may be necessary but in ascending it nothing more is required than a repetition of the first act. He raises the whole of his theory on the confession of Locke that reasoning consists of intuition in every step; but we have seen the distinction between them.

*Answer 4th.*—The axioms are the elements of our reasoning in geometry or rather in mathematics in general, and a conviction of their truth is implied in every step of our procedure but they are not the fundamental principles of that science, as we can deduce no consequences from them, for let a man pore as long as he will on these he will scarce come to know by that means that the square of the hypotenuse in a rightangled triangle is equal to the sum of the squares of the two sides. To this effect Stewart quotes a passage from Locke and he himself subscribes to its truth. Definitions on the other hand are the fundamental principles of geometry, the hypothetical truths on which the whole science depends and for the inaccuracy of which no subsequent logical rigour can compensate. On what other basis, he triumphantly asks, except on that of the definitions, is the whole fabric of the geometrical science built? The definitions of a circle, an ellipse, &c., are the only foundations on which the demonstrations of all their properties stand.

He illustrates this distinction by likening a process of reasoning to a chain supporting a weight (the conclusion,) then the definitions will form the hook, or rather the beam to which the chain is fixed, the axioms will be the successive links or concatenations of this chain.

*Answer 5th.*—The fundamental laws of belief are those simple truths a conviction of which is involved in all our reasoning operations, they are therefore also called essential elements of human reason. When the axioms are not included within these, they are then only such laws, a conviction of which is involved in all our reasoning concerning *probable* or moral truths. Such for example as a belief in our own existence, in our own identity in the independent existence of the material world, and a belief in the evidence of our own memory. Two analogies or coincidences are traceable between these and the axioms of geometry. 1. That from neither of these classes of truth can any

direct inference be drawn; abstracted from other truths they are perfectly barren and useless. As no one can by simply poring on the geometrical axioms come to any conclusion, so by simply knowing the truths, I exist, I am the same man to-day that I was yesterday, &c. we can never arrive at any conclusion respecting the order of nature. 2. The second analogy is that a conviction of their truth is involved in all our reasoning processes. In all our investigations concerning physical truths, we take for granted that there is a material world, existing beyond the world of ideas within us; and that the laws of nature will remain the same for every succeeding day. As for our belief in our existence, in our continued identity, and in the evidence of our memory, they are taken for granted in all our reasonings whether relating to mathematical or physical subjects.

*Answer 6th.*—Abstraction is that act of the mind by which we take into our consideration some of the properties of an object, in exclusion to all the rest.

The undistinguishing nature of our first perceptions often leads us to classify under the same general terms, all things which appear to resemble each other. Thus the names of particular objects often come to be the common appellations of species, because we are generally led to apply the names of particular things to all other things which bear a certain degree of similarity to it.

To explain the nature of the aid which general terms lead to our general reasoning, we must take into our consideration the process by which we transfer our particular conclusions to general propositions. For it is an undisputed truth that in demonstrating a general proposition we first demonstrate it with respect to a particular case and then transfer the particular conclusion to our general proposition by means of general terms; for Stewart enunciates it as a general law of logic that whatever things have the same name applied to them in consequence of their being included within the terms of the same definitions, are included within a demonstration where the terms of that definition are the data of our reasoning. From this it is evident that without general terms all our conclusions would have been limited to particular objects as we could not have transferred these particular conclusions to species and genera. Words help us to analyze our thoughts, being themselves the monuments of an analysis, and by that means, vastly help us to carry on our reasoning processes. In the explanation I before gave respecting the formation of general terms, I pointed out the loose way in which they were formed but it is necessary that they might lead to correct results in our general reasoning (as I just now showed that they are indispensably requisite for this latter purpose) that they be founded on a process of philosophical abstraction. Therefore we must distinguish between these two different classes of general terms.

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*Afternoon Paper.*

*Answer 1st.*—The two different processes are 1 to demonstrate the proposition with regard to the individual diagram before us, in which we take into our consideration, the properties of a circle or triangle only

as applied to that particular diagram 2 to transfer our particular conclusions, from the individual diagram before us to all figures comprehended under the same definitions. As the latter process is in all cases essentially the same, we by degrees drop it and then forgetting the successive steps, we imagine that the general conclusion is the result of a general demonstration. That the process here described really takes place will appear evident by considering, the steps over which a young geometer must pass to acquire a perfect knowledge of a geometrical demonstration. The young tyro, has a tendency at first to make the figure in his own slate, an exact facsimile of what he sees in the margin of the pages of Euclid, he places the same letters respectively as they stand in the book and feels satisfied with respect to the truth of the proposition when he can completely follow the steps of Euclid. This shows that his whole attention is engaged in proving the proposition with respect to that particular diagram. He can easily understand any change in point of size or magnitude but what difficulty does he feel when the figure is inverted or presented under any other position or aspect. The truth of our assumption appears more clearly when the novice has to study a proposition in which the same demonstration applies in the same words to different cases. Far from appreciating at first that the same proposition applies to all cases which are included within the terms of the enunciation, he repeats again and over again, the demonstration and applies it to one and then to the other figure and finds with a mingled feeling of pleasure and surprize that it applies equally to both. The analytical method of demonstration places the same remark in a stronger point of view. The proposition is demonstrated by general rules which serve in all cases and their extensive utility is only perceived by a subsequent process of the mind. For the purpose of establishing the truth of the last remark Stewart quotes Hally's account of his discovery of the formula for finding the conjugate foci in Optic lenses, in which the circumstance that the same formula applies to all sorts of lenses was discovered only by subsequent trial.

*Answer 2nd.*—This extensive utility arises in the first place from the peculiar nature of the truths about which mathematics is conversant, on account of which peculiarity real cases will turn out approximating far more nearly to those which the definitions of the mathematician describe, than can be found in any other hypothetical science. If we can be certain with respect to this particular circle that all its radii are accurately equal to one another, our conclusions with respect to it must be mathematically certain but this can never happen in practice. But in proportion to the accuracy of our data will be that of our conclusions and it fortunately happens that the same imperfections which limit what are practically attainable in the former, also limits in the same proportion what is practically useful in the latter. The peculiarity in the mathematical science arises from the peculiarity of the objects (figure and magnitude) about which it is conversant, and the accuracy to which we are capable of arriving (in consequence of that mensurability which is common to all of them, assisted by the wonderful delicacy and fineness which the instruments of the present age has attained) in calculating our data, has given a precision to our results in practical geometry, far beyond the ordinary demands of human life. This peculiarity, also which led Stewart to call magnitude and figure, the mathematical affections of matter, makes these properties, the attributes of space

no less than of matter and therefore we can separate them in act no less than in thought and they are not liable to those accidents which vitiate our conclusions more or less in other branches of science. If we are therefore at due pains to ascertain our data our conclusions may be depended on within very narrow limits and the limits also of possible error can in every case be themselves determined. Thus in measuring the height of a mountain if our data be correct and we reason logically from them the result will be very nearly accurate. But in proving any proposition respecting the lever we must leave out in theory many considerations (as its weight) which palpably affect it in practice.

*Answer 3rd.*—The whole plausibility of this opinion is derived from a play upon words; because the laws of nature and the laws which regulate the moral world, although both are called *laws*, are completely different in their significations. The agreement of the latter with the nature of things does not depend upon their being observed or not, but upon the reasonableness, the moral obligation of the laws; whereas the former being drawn from an observation of facts, in the general agreement consists the essence of the law. So that it can no longer continue to be a law of nature if any exception to it turned up. So that it is a mere quibble to say that the laws of the material world are better observed than those of the moral world.

*Answer 4th.*—The term *probability* in its logical sense applies to all sorts of evidence not based upon hypothesis and definition, so that in this sense it is not opposed to what it is *certain* but to what admits of being demonstrated after the manner of the mathematicians. In its vulgar sense it is applied only to those events which are expected with some degree of doubt and hesitancy. The probable evidence of the logician consists of a series beginning with bare possibility and terminating in moral certainty which is the highest degree of evidence attainable in moral subjects and to which the term probable will be applied by no one except a professed logician. Thus the rising of the sun tommorrow, the expectation of a man's death, though certain with respect to the generality of mankind, are classified with probabilities by the logician.

*Answer 5th.*—Stewart defines experience to be that species of evidence in which the same effect is inferred from the same cause under circumstances exactly similar; so that where there is the slightest difference with respect to these, the evidence cannot be called that of experience but of analogy. Thus in common language we are said to infer the fall of one stone from that of another or even from that of a leaden bullet by the evidence of experience which however is inaccurate. The evidence of experience therefore leads us to infer (with respect to the future) the same effect from the same cause acting under *exactly* similar circumstances. The evidence of analogy leads us to extend our inference from one case to others which appears to be similar to it. We are led by a natural principle to classify under the same common appellation all things which appear similar to one another and it is in this manner that what are vulgarly called general terms are formed and not by any philosophical analysis of the properties of the things which they represent, they are therefore extremely loose in their signification. But general terms formed for the purpose of assisting us in our philosophical investigations ought to be founded on an accurate analysis of the nature and properties of things and by means of a very careful abstraction. We must distinguish therefore between, notions

which are general merely on account of their vague and ambiguous signification and those which are general because they are formed by a careful abstraction of things and facts.

MOHENDRO LAUL SHOME, *Hindu College,*  
*First Year, First College Class,*  
*Senior Scholar of the First Grade.*

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## English Essay

*On language as an instrument of civilization, with special reference to the effects which may be expected from the diffusion of knowledge through the medium of the English language in India.*

The causes which chiefly affect the progress and improvement of mankind, are so much beyond the sphere of common observation, that to comprehend them truly would require a thorough knowledge of the human mind. It cannot be doubted that the amelioration of man's state, has often proceeded from purely external causes, such as the influence of climate and religion. But religion is nothing more than education in the highest sense and the influence of climate is not so great as is imagined; for the greatest diversities of intellectual and moral character prevail among men born in the same climate. We are to acquiesce in the judgment of King Archedamus, as says Dr. Arnold, that culture and training makes the only distinction between one man and another. It is education therefore which has mainly operated in altering the condition of man. It is to the different degrees of knowledge, possessed by different nations that we are to seek for the true cause of the marked superiority of one race over another. That knowledge is power is nowhere better exemplified than in the present condition of the different nations inhabiting the globe.

Language is the chief instrument employed in imparting knowledge to another. The only medium through which we can successfully communicate our thoughts, is language. If there had been no such conventional mode of expressing the results of our enquiries, society would have been stationary and the progress of mankind would have been held desperate. Without language, experience would have been useless and information a mere matter of curiosity. What advancement can we expect in knowledge, if in the language of Lord Bacon, there be no "learned experience" or experience reduced to writing. To carry on any process of reasoning, language is the only instrument we use. The aids which it furnishes to abstract reasoning are indeed incalculable, so much so, that we often think as well as speak by means of words. The starting point from which we set out and the consequences we deduce from it, we frequently forget, but the last result remains in the form of symbolical expression of our thoughts, a living monument of the truth we have arrived at. Nay, it is not impossible to suppose (as it frequently happens in the exact sciences) the conclusion, to include conditions which we never contemplated and to comprehend in a single

proposition, the principles of a science. The advantages derived from language in mathematics, are so great that some have been led to suppose that a progress similar to that made in it, might be effected in the other sciences, if the terms be made as perfect. A celebrated French author has not scrupled to say that reasoning is nothing more than a language well arranged. But not denying the efficiency of language as an instrument of thought, we may assert that the peculiar nature of the evidence which belongs to mathematical truths arises not so much from a correct phraseology as from another source which it would be out of place to mention here.

The abstract sciences such as political and mental philosophy, might be supposed at first by a superficial observer, to have no connexion whatever to the progress of civilization. Speculations on these subjects may seem not only abstruse but totally unconnected with the practical affairs of life. But when we reflect that what is a principle in science becomes a rule in art, that what is barren and unmeaning in itself becomes fruitful and significant in its application, then the apparent objection loses its force. Of the connexion of these sciences with language, it cannot be denied that the successful cultivation of the former depends upon the perfection of the latter. It follows therefore that society cannot advance in civilization where the sciences are uncultivated, or where the language has not arrived at a sufficient degree of precision and correctness. The English language has acquired a currency and diffusion through her vast conquests and colonies, unexampled in the history of the world. It seems to be in the progress of being made the general language of mankind. It is to be regarded as one of the wonders of this age and a manifest indication of the dispensations of providence, that in India, the language of England, is daily acquiring a more general currency. What would be its ultimate effect on the melioration of this country, the social and political condition of its inhabitants, it is yet in futurity to determine. But from the progress which it has already made in imparting sound and useful knowledge, it is possible to suppose that its influence will be continually increasing, that the language of scholarship and science of India, would be decidedly the language of its conqueror and that the education of its people would be conducted through the medium of a foreign language. The advantages to be derived from the diffusion of knowledge by this means, are indeed immense.

The discoveries in science, the knowledge of the physical comforts and conveniences of European life, the principles of Government, Institution and religion which prevail there, can all be learnt from the perusal of books in the English language, and may be thence made available by the people of this country. But the greatest effect remains to be mentioned and that is, a taste for European literature. A taste for the beautiful and sublime, a craving after truth and abhorrence of falsehood, a notion of moral beauty and deformity, these are the last and crowning effects of the diffusion of knowledge through the English language. What are external advantages compared to these! The highest earthly fortune dwindles into nothing in comparison with them. The thoughts of the greatest men, "thoughts that breathe and words that burn" would be then always present to our mind. They would take "such deep root therein" that they would form a portion of the mind itself. Milton and Shakespeare and Bacon would furnish us with

thoughts that "reach beyond eternity" and "sentiments that lie too deep for tears." Such sentiments as,

"I care not fortune what you me deny  
"You cannot bar me of free nature's grace," &c.

cannot but elevate the mind and awaken in it an aspiration after a purer state of being where all earthly distinction should cease and the ultimate triumph of virtue and truth over vice and falsehood should be consummated. If there be any such state, as the very imperfection and weakness of our nature, leads us to suppose, it is a "consummation devoutly to be wished."

ISSER CHUNDER DASS, *Hooghly College,*  
*Senior Scholar, Fourth Year, First Class.*

1. The close connection subsisting between language and our thoughts can not fail to be the subject of observation to every one who has ever turned his thoughts to the operations of his own mind. In consequence of this connection, words have great influence not only on the communications of men with one another but also on their solitary speculations in private. But if this be the case even with the educated part of a nation, and if it true that words inaccurately abstracted from things would sometimes impose even upon those who are properly trained in the analysis of their own thoughts; how much more must it be the case with the vulgar who have seldom the opportunity or the inclination to examine any point even with the slightest degree of attention. These, generally take, upon trust, every thing relating to faith and the other higher concerns of life. They are therefore generally misled in their opinions and thoughts, by a language carelessly formed and not expressing the real nature of things.

This is a source of general error which must remain in the language of even the most civilized nations. The reason of this, is simply because language must exist before philosophy comes to be cultivated and the corrected phraseology becomes current only among the learned but is quite unintelligible to the mass of mankind. But it is surely true that as a nation advances in civilization, its language becomes more and more definite and expressive of the real nature of things.

The highest point of civilization therefore which I can conceive, is that state of a nation when its language has arrived at such a degree of precision, that every word expresses the same idea to all men and its signification corresponds with the nature of things. But this degree of perfection in a language is merely ideal.

The acquirement of the vernacular language is the only species of education (if I may be allowed to call it so) which *all* the members of a society can attain and therefore the degree of civilization to which a nation has arrived, will be always proportional to the perfection of its language.

If a person wishes to inculcate a philosophical principle in an uneducated mind his arguments are generally refuted by the assertion, that "your reasoning is contradicted by the meaning of the words you employ" and it would be an altogether fruitless attempt to convince the vulgar that the meanings of words are no sure tests of the correctness of the ideas we attach to them. Thus if a person liberally educated,

tries to convince the common people of this country, that the cause of the sun's being eclipsed, is not because he is devoured by a monster, he will immediately be answered that the very meaning of the word *eclipse* shows that it must be as they believe. The phrases "sun rises and sun sets" might also mislead the multitude and be an argument in favor of the sun's daily motion.

2. In inculcating any truth in the minds of our hearers, the force of language, has a great influence in producing conviction.

It is from this source that the whole efficacy of eloquence proceeds. It is not only necessary that what we assert should be true but if wish to bring over others to our opinion and gain their belief, we must express our sentiments in such a manner that they might strike the auditors with a conviction of their truth. Hence in educating youths (and no one will doubt the influence of education on civilization) if the vehicle by means of which the truths are conveyed, be such that they find their way directly home to the hearts of these young hopes of a nation, the work of civilization must be greatly facilitated.

That the impression which any truth makes on a man's mind, has a reference to the vehicle by means of which it is conveyed, will not be disputed by any person who reflects for a moment on the nature and uses of the arts of eloquence and poetry. Who can ever forget any of those deep truths conveyed in the impressive language of Shakespeare and Milton? Whenever we happen to reflect on these truths the words of Shakespeare immediately recur to our mind. His mode of expressing his ideas, is such that they force their way irresistably to our hearts. Let the same truths lie expressed in any other style, and we will pass them unheeded by.

It was for this same reason that the ancients made the language of poetry, the instrument of imparting, their precepts and moral lessons, alike, to men and children. Even their histories were written in poetry.

It has been said that the great civilizers of mankind were not the legislators but the poets, and that Homer and Hesiod were greater benefactors of mankind than Lycurgus and Solon.

The degree of refinement to which a nation has arrived is always surely indicated by the state of its language. If there were no other remains of the civilization of ancient Greece Rome and India than the Greek, Latin and Sanscrite languages, these would be quite sufficient to establish their claims to the highest rank in the ancient world.

3. Those who have turned their thoughts to the successive stages through which Europe has passed in arriving to its present pitch of civilization, must have noticed the great changes brought about, by the revival of the study of the Greek and Latin languages. The age of Erasmus was a distinguished era in the history of European civilization. It was the influence of Greek and Latin literature that changed the barbarous Goths, Visigoths, Ostrogoths, Lombards, Franks and Germans, into the civilized nations of Modern Europe. If it be true that these have at present attained to the highest degree of civilization that was ever known in the world, yet it must be confessed that the first impulse to this civilization was given by the literature of Greece and Rome. If it be true moreover that the influence of the dead languages of Greece and Rome had so great an effect in changing the barbarous hordes that subverted the Roman Empire, into the most civilized nations on the face of the earth, what might not be expected from the cultivation, of

the languages of these nations whilst they are yet in the vigour of their career of improvement, unimpaired by the influence of time, I say, what might not be expected from the cultivation of these, by the inventive genius of the East. The Europeans moreover could not learn these languages from the mouths of Greeks and Romans but we have always the opportunity of receiving the knowledge of the European languages, "fresh from the fountain whence it flows." Our theoretical errors respecting them can always be corrected by our conversation with the learned to whom they are vernacular. We may "catch their manners living as they rise."

In taking a retrospective view of the condition of India, we find that though she was *once* the cradle of civilization yet the lapse of ages and the cruelty of the bigoted Mahomedans had deprived her of every token of active civilization. The Sangsprit itself has become a dead language and the different vernacular tongues have scarce begun to be the written languages of the country.

It was under these circumstances that the English language was introduced in this country and the effects have already begun to be manifest. We feel the influence of Shakespeare and Bacon upon our minds, we feel the deep impression they make, we become convinced that these impressions are not to be effaced by the lapse of time and that they must influence our actions. The Sancrete is a dead language, bringing to our minds, ideas of antiquity which bear no relation to our present life and therefore though it might afford us literary amusement yet it can not direct us in our conduct through life. Its literature might give us excellent notions of sublimity and beauty but it can give us no lessons suited to our present condition.

Our vernacular is yet in its infancy and has no literature, properly so called. We must then look up to the English language as the only means which can help us to improve our condition. It has been predicted, that the English would be the diplomatic language of this country, "that the nations of India speaking a variety of vernacular tongues shall communicate with one another in English about literary and scientific subjects." A language serving such a purpose becomes a powerful instrument of civilization to a nation. The convenience of having a common language by means of which, we can communicate with one another, about the higher concerns of life, is of high value. The attainment of that single language enables us to master the whole literature and science of the country. So that the English language will serve a very high purpose, if it enables the different nations of India to communicate with each other through its medium.

I can moreover foresee that its vernacular languages, beginning to flourish at the precise time that the English language, began to be cultivated, will take a tincture from it. This has already happened to be the case with the written Bengali, the greatest part of its present literature consisting of translations from the English.

The consequences of the cultivation the English language are beginning to be perceived.

English notions and ideas have begun to prevail generally and the work of civilization is going forward with rapid strides. The era of a great revolution is fast approaching. Opinions and practices that were once ignorantly held sacred are now beginning to unloose their hold on the minds of men. But so beneficial is the influence of knowledge

under all circumstances, that this revolution is going forward unperceived, without any struggle or convulsion. It is produced not by the exercise of any external force but by the conviction of truth. The spread of English literature has taught men to think more liberally and act more generously. The impression of ideas that are noble and are therefore congenial to the mind of man when unbiased by prejudices, and imbibed from early youth through the medium of an energetic language, cannot fail to have its desired effects, and accordingly the system of educating Indian youths in the literature of Europe has been the source of great benefit to the country. The remarkable aptitude of the Indian races coming in contact with the exertions of the vigorous intellect of Europeans promises the production of something wonderful. Their perseverance in always adhering to what they believe to be the right path when properly directed by those impressions which they derive through the medium of the English language, will one day make them capable of achieving great things.

MOHENDRO LAUL SHOME, *Hindu College,*  
*First College Class, Senior Scholar,*  
*of the First Grade.*

### Library Examination.

#### Questions and Answers for Library Medal.

1. Macaulay says "the end which Bacon proposed to himself was fruit."

"This was the object of all his speculations."

Does Bacon's Philosophy consider the physical and perishable conveniences of life man's highest good?

Support your opinion by quotations from his writings.

2. Did Bacon foresee the *gradual ascent* which Science was destined to make from his time?

And shew, by an example from Whewell's Philosophy of the Inductive Sciences, that a general law includes within it all the less general laws of the same class.

3. State the objection of Hallam to the use of the English term "idols" from the latin "idola" of Bacon.

4. Did Bacon expect that Philosophy was destined to arrive at *efficient causes*?

What is Hallam's opinion of Bacon's anticipation?

And Dugald Stewart's?

Why does the latter call *efficient causes* "metaphysical," and "necessary?"

5. The difference between the "Forms" of Plato, of Aristotle, and of Bacon?

6. State some of the advantages for the formation of a Method of Discovery possessed by Philosophers of this age, but which were wanted by Bacon.

7. The most striking particulars in which the Logic of Bacon differs from that of Aristotle.

8. Bacon's opinion of Plato's Philosophy as compared with that of the earlier Greeks.

Macaulay's remarks on it.

Hallam's remarks on Bacon's objection to the mixture of *final* causes in Plato's philosophy.

*Answer 1st.*—Bacon's Philosophy did not consider the physical convenience of man as the highest good. The contemplation of truth was a far nobler object for the satisfaction of one that was endowed with the powers of reason. That he considered the latter as superior to our physical pursuits may be gathered from many of the passages from "the Advancement," "the Novum Organum" and others of his works. In his Essays he places the Essay on Truth before all others and even in the Novum Organum, (the work which is to be considered as the great usherer of his philosophy) the same compliment is paid to truth by placing truth before utility. Again in his Advancement when answering the objections of some of the divines against learning he plainly says that nothing can fill, much less can it swell, the mind, but God and the contemplation of God. Lastly when speaking of the object of learning he says that in it is to be sought a house for the relief of man's self, and the *glory of the creator*. Macaulay has said that the great object of Bacon's works, was the discovery of works. But in laying stress upon this he has, as Whewell well observes, left out the first and the better part of the passage. Bacon's great object was, first *ascending up to axioms* and then *descending to works*. But yet it may be asked why he laid so much stress on the discovery of works? The truth seems to be that Bacon was no less a sincere worshipper of truth than any of the ancient philosophers; but he liked to devote his time for the advancement of useful knowledge. The reason is obvious. All his predecessors have given themselves up to the contemplation of truth; in them truth has found many sincere and zealous devotees; but the temple of Nature was entirely forsaken. Truth could not lose much by the falling off of a single votary. So Bacon in a truly chivalric spirit took the neglected and oppressed beauty under his protection, fought for her and restored her to a throne from which she had been violently thrust out.

*Answer 2nd.*—That Bacon foresaw the gradual ascent which science was destined to make from his time evidently appears from some parts of his writings when he positively and exultingly speaks of the advances which it was to make. He says that the work to which he was the first to direct the attention of mankind, could not be finished by the endeavours of a single individual but required the joint labours of ages to bring it to perfection. He himself acknowledges that the tables which he constructed were not perfect, nor could it be expected that they should be so. Ages were to be spent in collecting materials, ages more in digesting them into tables and classifications, so that these classifications large and extensive as they are, were to be disposed of in laws of the lowest degrees of generality; and from these and other facts were to be collected laws which were next to it. In this way all the advances in the experimental sciences are but the successive steps of a great generalisation. Excellent examples of this generalisation are given in Whewell's Philosophy of the Inductive Sciences. The law of universal gravitation is a general law which has been arrived at by the successive generalisation of a variety of facts and laws less general. In the earliest dawn of

the Greek Philosophy the motions of the heavenly bodies were considered as subject to no definite law ; after the Greeks made some progress in it they found that all of them appeared to move round the earth, some in an equal, others in an unequal and varying interval of time. But even their irregular motions were classified by them, and Ptolomy supposed that they moved in epicycles. Here was a law which seemed to explain a great variety of phenomena; but though it succeeded in explaining a great many facts, the retrograde, stationary and direct motions of the planets could not be accounted for. So when Copernicus flourished he supposed the whole system to revolve round the sun and not round the earth. This was in his time merely a hypothesis which was afterwards confirmed by facts. But although Copernicus rightly supposed the whole system to revolve round the sun he could not explain how these bodies were retained in space. Neither did his successors Galilio and Kepler, (the former of whom supposed the moon to be attracted by the earth, and the latter discovered their laws, of the elliptic motions of the planets, the equal description of areas in equal times, and the periodic times of the planets,) arrive at a general law by which the whole system of the world was regulated. It was left for Newton who from the observations and laws found out by his predecessors, and also from his own observations proved the universal law of gravitation. So in this law all the former laws, those of the elliptic motion, the description of areas and the periodic times of the planets were included.

*Answer 3rd.*—The chief objection of Hallam to the use of the English word *idol* for *idola* seems to be that the English word does not express the same thing which the author means to be signified by *idola*. Of this distinction the author himself was perfectly conscious; but the error into which some of the later writers have fallen renders it necessary that the distinction between these words should be sufficiently explained. The *idolas* or the false appearances of the mind are those by which we are misled not knowing that they exist. They deceive us unknowingly. But the term *idol* signifies a false deity to which we bow down and offer our worship in preference to what is true. The idea of a *idol* seems to signify that we are conscious of its *existance* though we take it in a mistaken sense. But the *existance* of the *idolas* or the false appearances is never known to us. The one seems to deceive us unconsciously, the other by its appearance though in a false dress.

*Answer 4th.*—Bacon it seems inclined to the opinion that the enquiry and the discovery of the efficient causes of things was within the province of human knowledge. In his advancement he says that the enquiry about the final causes is useful, but the enquiry about the forms of things, that is, their internal organizations and formations, was useful in the production of works. According to this view of the question he seems to think it possible that we may know the internal structure of gold, and thus produce gold, that we may find out the forms of motion, heat, &c.

To this opinion Hallam consents. He says that though we have not yet arrived at what is called the efficient causes of things, the discovery of the modern philosophers have advanced much nearer to what was so sanguinely anticipated by Bacon; so that though it has not yet been done the possibility of such a work may be entertained. To this Stewart objects saying that Bacon was led too much beyond the limits of the physical sciences by an uncommon success in his speculations; a fault which as we know great intellects are liable to fall in.

We may mention the name of Lebnetz as having the same turn of mind. But to proceed, efficient causes as Stewart observes, cannot be exactly explained. Physical causes are what we may be said to know; but they do not explain the phenomena. Physical causes are but for-runners of particular events; we see them constantly conjoined; but how they are so linked together, whether the connection is necessary, we know nothing about. Hence they cannot be called necessary causes. The idea of an efficient cause exists in the mind only. When we see an action we necessarily and as it were, by the constitution of our mind, think there must be a cause of that action; but what that cause is we cannot determine. Hence efficient causes are called metaphysical causes since they exist in the mind alone.

*Answer 5th.*—The forms or ideas of Plato were the archetypes of things. “The idea of a thing,” says Plato “is that which makes one of many, which running into and mixing with things infinite, preserves its integrity and nature, so that under whatever disguise it may be concealed we may find it out.” According to Plato there were some perfect models made by the Divine Hand which the things in nature partook. These models were called by Plato the ideas of the Divine Mind; so that there were ideas of beauty, greatness, wisdom, &c., and the things which partook of these ideas were called by these names. Things which partook of beauty were called beautiful, things, partaking of greatness great, and those of wisdom and nobleness, wise and noble. The forms of Aristotle were the archetypes of natural things. The ideas and *forms* of Plato and Aristotle may be at first thought synonymous. But there was this distinction among them. The ideas of Plato did not exist in things; they had an independant existance; but the forms of Aristotle were impressed in matter. They existed with matter but they were not eternal like the Platonic ideas; matter could exist without form, but form could not exist without it.

The forms of Bacon were quite different. By the word form Bacon meant laws of nature. “When we mention form” says Bacon, “we mean nothing more than laws in subjects of simple nature capable of having them; so that the forms of heat, weight and light are the laws of heat, weight and light” Bacon’s *Novum Organum*, part II. as quoted by Stewart part II. sec. VII.

*Answer 6th.*—The advantages which philosophers of the present day possess are various. Bacon in forming a method of discovering the laws of nature had none to assist him. Nay he could not disclose his design to any body without meeting with a sure rebuke for his presumption. In his times science was not formed so he could not take a single example to prove the truth of his rules but was obliged to find out the rule and the example himself.

At present great discoveries have been made in the different branches of science by different persons, so one may just refer to the works of these without much difficulty; and these discoveries are the principal things which throw light on a rational system of logic. So fully has the prophecy of Bacon been fulfilled that the art of discovery will grow with the arts themselves.

*Answer 7th.*—The Inductive logic of Aristotle and that of Bacon agreed in one thing that both referred the discovery of the laws of nature to observation; but otherwise they differed greatly. The method of Aristotle collected laws from the simple innumeration of a great

many instances without rejections of those which seem contradictory. But Bacon would not be satisfied with such a system of logic. He required a method which would sift nature by proper examinations and rejections, guard the senses, from giving false reports, and correct their incompetency by substitution and rectification. He would then proceed gradually from one law to another always considering the negative instances as of greater authority than the affirmatives, till he arrived at laws of the highest degree of generality. But with Aristotle the case was otherwise. He took some vague and imperfect notions from external natures, formed laws according to his own conceptions, and applied them to explain all the phenomena of nature. But if any phenomenon happened which seemed to overset these laws, he instead of correcting them would endeavour to strain it to these or save them by subtle distinctions to preserve the first authority of his choice. Well might a philosopher say that the induction which proceeded this way by simple enumeration is a childish thing.

*Answer 8th.*—The philosophy of Plato which aimed at the contemplation of final causes, was not a philosophy destined to produce fruits, but like a virgin devoted to the contemplation of God, remained barren.

All the Greek schools of philosophy except his, had some thing which smelled of natural philosophy. The atoms of Luceppus and Democritus, the Hoiememora of Anaxagorus, the amity and enmity of Empedocles, the heaven and earth of Permenides, all bespoke something of natural philosophy. But the philosophy of Plato was not of that kind. Undoubtedly if the tree, which, as Macaulay well observes, Socrates planted, and Plato watered and cherished, is to be judged by its flowers and blossoms it is the most beautiful and pleasing, but it did not produce much good fruits.

Bacon says that the contemplation of the final causes cannot be of any use in the discovery of the laws of nature; but in this Bacon, it seems, was somewhat mistaken. The consideration of final causes as Stewart and Hallam have shewn, led to some of the most important discoveries. The discovery of the circulation of blood by Dr. Halley was made by the consideration of the final cause of the valves in the veins and arteries. The consideration of the final causes as Stewart has shewn by a great number of quotations and examples is of great use in animal anatomy.

BHUGWAN CHUNDER BOSE, *Dacca College.*

*Senior Scholar, First College Class,*

## History.

### ARNOLD'S LECTURES.

*Answer 1st.*—The fall of the Western Empire, according to Dr. Arnold is the separating limit between Ancient and Modern History; and in my humble opinion he is perfectly justified in the selection. The present state of affairs existing in Europe commences from this period. “History so far” says our author “is the biography of the living, beyond it it is the biography of the dead.” At no other period before or after it, can the four great elements of Modern nationality in Europe be found to have met together. Successive ages have used and disposed these elements differently but they have added no new one to them; so that the fall of the Western Empire divides the broadest line those two periods of the history of the European nations which are designated by the names of Ancient and Modern History. By the four great elements of nationality I mean race, language, institutions and religion. The births of the different nations in Europe, will perhaps afford much light on the subject. The English nation whose power is now acknowledged in every quarter of the globe do not owe their origin to the Romans who first conquered Britain. They were strangers to Greece and strangers to Israel; not one drop of their blood has been borrowed from any but the Saxon source. The same is the case with their neighbouring nation of France. Though there is a mixture of the Gallo-Roman origin in them yet the stamp is predominantly German. Clovis and his followers had the greatest share in forming the population of France. If we take to our consideration the origin of other nations we shall find that it is after the downfall of the Western Empire that these nations were born. The limit assigned by Dr. Arnold therefore is not arbitrary. It is not mere chronological but is founded upon a very solid and tangible basis.

*Answer 2nd.*—Mosheim in his classical history quoted a passage, which by mistake he attributed to Elgius Bishop of Eloy, regarding the depraved state of morals in the seventh century of the Christian era. It is to this effect that any man who in the period above alluded to did not try his main and might to add to the influence and riches of the clergy was accounted as the most wretched and impious of all mortals. Robertson in his notes to Charles V. without taking the trouble of referring to the text quoted the remark from Mosheim; and at length Dr. Waddington adopted the selfsame passage in his works. But being led to inquire further into the matter, Waddington after many fruitless attempts found the whole passage not in Elgius but in Dácheri one of the Benedictine writers. Thus we find that three writers of the greatest celebrity have been led to a strange error from one garbled extract.

*Answer 3rd.*—Italy consists of number of low valleys pent up between many steep hills and mountains. These valleys have an existence quite independent of each other, in so much that many of the inhabitants of one of them are foreigners to one another; so that it will not appear very strange to say that when two of the Neapolitan naturalists went to visit an eruption of the Majella in Abruzzi, they found there many medicinal plants which their countrymen were in the habit of importing from distant

countries. The Appenine chain running down from the north to the south of Italy, the Alps on the north, the arteries and veins of the Tiber—the river on whose banks stood that seven killed city whose name is still cherished by all the nations of the world as the parent of arts institutions and civilization—the basin of the Po, all present a very grand picture to the mental eye of the observer. “Italy” says Dr. Arnold “is like a great backbone thickly set with spines.” Steep hills and mountains rise on all sides, and low pieces of habitable lands are intercepted between them. The salubriousness of the climate, in some parts of this peninsula, where every gale is odour and every breath is peace, large tracts of land lying uncultivated and uninhabitated; and the beautiful valleys of the Campana teeming with olives and roses, all prepare a most delightful banquet for the patient observer. Washed by the Mediteranean and Adriatic, on three sides, Italy appears like a long strip of land intersected by mountain sceneries of unusual grandeur and sublimity. The physical resources of the country, the majestic range of mountains running down through the middle, the fecundity of some parts, the beautiful cornfields smiling with emerald verdure, and gladdening the heart of the innocent peasant at every undulation of the green blades, the citron groves spreading their luxuriant branches, all all inspire the mind with delight and joy. But Italy is uninhabited in many parts, a circumstance which has given rise to occasional robber habits of the inhabitants. Here ends our faint description of a land which at one time gave law to the world, but which now is entirely fallen from that enviable position she once occupied in the annals of mankind.

*Answer 4th.*—In the study of Modern History the first thing that attracts our notice is the consolidation of small independent states into large kingdoms during the last three centuries. The incorporation of England and Scotland, and subsequently that of Ireland into the vast kingdom of Great Britain is of modern date. The acquisition of Franche Compte and Provence and the subsequent addition of Bretaign, Avignon Alsace and Vosges, are works of later times, Spain and Portugal were united under one sovereign; and the coalition of the Spanish and Austrian territories is the grandest illustration of the tendency above alluded to. The destruction of the free cities of Germany with the exception of Bremen, Frankfort, and Lubeck, and their formation into a vast kingdom, the kingdoms of Bohemia, and Hungary, the rise of Russia into the most colossal of empires, the kingdom of Sardinia which absorbed into itself Venice and Milan, all clearly demonstrated the undoubted tendency which the last three centuries had to the annihilation of petty independent states, and their consequent coalition into vast empires. Venice destroyed the independence of Padua and Verona, Florena of Pisa and the territories of Ferrara and Urbino were included with the dominion of the Popes.

*Answer 5th.*—First of all the rise of the Austro-Spanish power which threatened the independence of the other European states presents itself to our view. The marriage of the heiress of Burgundy with the Arch-Duke Maximilian added Franche Compte and the Netherlands to the Austrian dominions. The subsequent marriage of Philip, Maximilian’s son with Joanna of Spain daughter of Ferdinand and Isabella, gave to Austria the whole inheritance of the crown of Spain to which were added the kingdom of Naples which had fallen under the grasp of the Spanish monarch by the termination of the struggle between the lines of Anjou and Arragon; so that when Charles V., grandson to Maximilian ascended the throne of

his father in 1519 he found himself in possession of a vast empire scarcely paralleled in the annals of modern Europe. But this power did not go unchecked. It was first opposed by France, kept at bay by Francis I., humbled by the successful alliance of Henry II. with the German Protestants and finally dissolved by the abdication of Charles V. in 1555. His son Phillip succeeded to his Spanish dominions, and to the sovereignty of Naples; his brother Ferdinand to his Austrian territories. Thus passed away the first tempest of universal dominion without producing any serious injury to the affairs of Europe.

But Phillip by the extent of his possessions which were still considerable, the subsequent conquest of Portugal by the death of King Sebastian in Africa, and the vast possessions and riches which fell into his hands by the discovery of America and the conquests made there, excited fresh cause of alarm. France was now very much distracted by civil and religious wars, and the danger of his power became imminent. But it was finally checked by the revolt of the Netherlands, the opposition of England and the return of France from the civil wars which raged among her sons.

The dominion of Ferdinand 2nd again, excited general alarm. The conquest of the Palatinate in 1622, threatened the permanence of all the independent states. The power which principally opposed this was that of Sweeden. Austria was driven out of Lombardy by the peace of Westphalia in 1648 and after the conclusion of the peace of Pyranees in 1659, Spain retired for ever from the foremost place among European states.

The dominion of Louis 16th rather than that of Richelieu now took the most formidable aspect. His possessions were not very extensive, but the forts of Lisle and Dunkirk furnished him with a very great advantage. The French navy has now risen to the sovereignty of the seas. The opposing power now was England. William the third checked the power of Louis; Marlborough and Eugene overthrew it. Louis was now at once laid prostrate before England and he was only saved by a party revolution in his favour in English ministry. Though the peace of Utrecht in 1713 gave to the French prince Phillip the succession of the crown of Spain, the terms which it actually involved were extremely humiliating to Louis.

Then followed a peace of nearly 70 years; after which England became in some measure the "principal centre of action." The possession of the different states of North America, the high pretensions of her naval code, and the vast extent of her colonial territories again excited general alarm. Not only France and Spain but her old ally Holland took part against her in the American war, but the enmity against her did not survive the loss of some of her valuable possessions in America.

But the most violent crises was in the beginning of the present century. The most military people in Europe became engaged for their very existence. The French Republic cradled *a origine* in war, was became now engaged in the accomplishment of a grand scheme of universal dominion, scarcely paralleled in the history of any other continent. "The ordinary relations of life" says Dr. Arnold "went to wrack" and every Frenchman became a soldier. "At length as if Providence seemed at first to further the ambitious views of France, her forces were at length furnished with a commander whose military abilities made him fitter to undergo all the privations of war and to carry on the grandest scheme of universal empire. This commander was *Napolean* of whom Lord Byron has so finely said,

"Conqueror and captive of the earth art thou"

"And thy wild name, &c."

He assembled his mighty host of 4050000 efficient soldiers and at every way of his advance swept away a kind. Though the coalesced powers of Europe were eventually succeeded against him, yet the preservation of Europe from the hands of this wonderful genius Dr. Arnold has very justly attributed to the immediate interference of God and God alone. We give to Prussia, all the glories she achieved, to England, the honour of the crowning victory of Waterloo in 1815 but we cannot still deny that had not the signal failure of Napolean's expedition against Russia been not occasioned by a memorable frost, Europe perhaps would have still groaned under the thralldom of French tyranny.

*Answer 6th.*—The study of history both ancient and modern does by no means justify the belief that some nations are inherently superior to others. The judgment of King Archedamus is the best. According to him one man differs little from another, but training and culture constitute the entire difference. Nor does our past experience any way justify the truth of that Calvanism in matters political, which many have so strenuously supported. Judging from the experience of European history in the 18th and 19th centuries we find that France was actually superior to Austria and Spain in warlike habits and abilities, the successes on both sides were admirably balanced. While we find that Napolean was uniformly victorious, Frederick the Great gained many victories. The conquests of Napolean in Italy were equally balanced by the defeats of Moreau and Jourdan. The victories of Rosbach and Jenna counterbalanced one another. The military character of the Italians is now low yet without going to the Roman times, we find that Italy has still given birth to a Spenola, a Montecuculian Alexander and to the Prince of Parma. If we weigh the victories and defeats which the English have sustained in all their struggles with France we find that they are almost equally balanced. The defeats sustained by King Jhon are neutralized by the successes of Henry V; and the uniform victories of Marlborough are counterpoised by the successes of Marshall Saxe and the Duke of Luxemburg over King William and the Duke of Cumberland.

*Answer 7th.*—It is impossible to conceive the unpardonable evils which generally accompany an irregular warfare. The cruel outrages of the irregular troops sparing neither sex nor age, the violent deaths and agonies of innocent sufferers, the terrible destruction of houses, and temples, in fact all the other inhuman actions committed by a set of ruffians let loose to revel in the boundlessness of rapine and carnage, cannot be justified by any means whatever. Even when a people's country is invaded, they have no right whatever to depart from the pale of civilized warfare. Battles must be fought at the country of either of the beligerents and it is an accident merely when the territories of a third party are made the scene of action. The invader of the country invades it with the prospect of an honourable peace; this is the true theory of the case. Are we justified in such cases to adopt the habits of a guerilla warfare, to shoot at stragglers and to rise promiscuously against the individuals of the invading army? But by no means if the invader wishes to complete the entire annihilation of a people he cannot now complain if his soldiers be promiscuously massacred. But even now if we consider the inefficacy of irregular army as a general rule in driving an invader from our country, and then weigh carefully the unspeakable horrors and atrocities which inevitably accompany these irregular risings we will find that the necessity of a standing army is absolute, and that all those irre-

gular outbreaks of the multitude which many philosophers have so highly commended, cannot be allowed as they are generally found to be productive of more positive evil than of good.

*Answer 8th.*—Considering the feelings of the revolutionary party in France, whose political principles were thoroughly opposed to the anti-popular, towards the names of Brutus and Cassius, we are at a loss to find with what consistency were these names cherished by the members of the party alluded to, with all the honours of glorious martyrs to the popular cause? Critically annihilating the different parties which existed in Rome during the times of Brutus and Cassius, we find that they were far from being the staunch advocates of the popular cause. They belonged to the high aristocratical party—the party which headed the proscriptions of Sylla—which played the most conspicuous part in the destruction of the Grachei—which strenuously opposed the communication of the Roman franchise to the other Italian states, and which resisted with great warmth and bitterness the enactment of the Agrarian laws. The rights and privileges of the ancient democracy of Rome were trampled by them to the dust and their honour and properties most egregiously outraged. Far from being the true friends of the popular cause, the other members of the party Brutus and Cassius belonged to, were living examples of that iniquitous tyranny, which having bound hand and foot the quarter of the poorer population doomed them to all the miseries which grim-faced poverty and dishonour can entail upon mankind. On the contrary the individuals whom they opposed were thorough favourites of the republican party. Julius Ceaser, an opposition to whose ambition and glory immortalized the names of Brutus and Cato in the minds of the revolutionary party in France, was not as he has been supposed to be a member of the high aristocratical party; he was the darling of the populace and the lord of their hearts. I do not mean to say, that in his affection for democracy and its principles was the genuine offspring of a sincere and cordial heart, but that all his leanings and actions were apparently republican. When he entered Rome with his well accomplished legions the ostensible purpose which he held out was the support of the Tribunitian power; and it was his affection for the multitude rather than any extraordinary degree of disinterested patriotism which actuated Brutus and Cato in the violent struggle which they waged with him. To all the parties who are strongly of a popular cast such names cannot be cherished with great inconsistency as the beaux-ideals of true commoners; so that the revolutionary party in France were sadly mistaken in the conjectures that were made in this case.

*Answer 9th.*—The coincidence of a popular and a movement party is purely accidental. They disagree as often as they are found to agree. Philip of Macedon whose extensive and unbounded ambition leads us at the first sight to infer that he belonged to the anti-popular party, is on the contrary found from experience to have headed the party of the movement while Demosthenes, who was strongly attached to the popular cause, whose blood boiled at the very name of liberty and equality, was opposed to it. The Macedonian monarch, contributed though unintentionally to alter the condition both civil and political of the different Greecian states while Demosthenes would have kept it quite unimpaired. Add to this the example of Pericles. Though he was a member of the aristocratical party, he might be truly said to have headed the party of the movement

in as much as he endeavoured to change entirely the face of political affairs existing in his time; and to raise Athens at the very summit of her glory and power. Thus we see that the popular party is not always identical with a party of movement; on the contrary the pages of history both ancient and modern furnish us with innumerable examples which have impaired this coincidence in no scant a measure.

*Answer 10th.*—The influence of time in changing the character of political affairs and parties is paramount and undeniable. That which once wore a very fair and promising aspect becomes by the lapse of ages a thing of a quite different mould; bad changes into good, and those that are wholesome and salutary gradually lose all the beauty and excellence of their character. Time as the proverb says is the greatest innovator. But we are very often mistaken in our estimate of political affairs and parties. The party which once possessed a very high character is still considered by some in the same noble light even where time has operated most successfully in altering it to the worst—and it is of this sad mistake, which we guided by an implicit assent to the dictates of our past experience, are so apt to fall into even when exceptions prove greater than the rule,—that Dr. Arnold so justly complains by the sentence alluded to. To illustrate this let us consider the different changes which have been successively wrought in the characters of the Ghwelfs and Gheberlines—the two celebrated parties which so strongly advocated the papal and kingly authorities in the different states of Germany, Italy &c. Considering with accuracy these two characters at the very beginning of the strongly we cannot refrain from detesting as cordially the Ghebellines as we cherish and magnify the names of the Guelphs. The Pope stood at this time in the place of a moral and religious teacher authorized by a high commission to watch over the impressions and assosiations of the untaught multitude, to shew them the true path for attaining eternal bliss and contentment, to instil into their breasts such lessons of morality as would enable them to perform skillfully, justly and magnanimously the duties which they owe to God their Supreme Creator and to all their fellow creatures; to assail their ears with the voice of morality and warn them constantly from forsaking the path of *virtue*. On the other hand the king stood in the place of a worldly despot, corrupt and tyrannical, entirely careless of the welfare of his subjects and totally unscrupulous in the selection of means for the satisfaction of his carnal ambition. Such was actually the case of the heads of the two parties above mentioned at the very begining of our historical notice of them. But they entirely changed their characters as time and circumstances began to alter. The Pope degenerated into a religious despot, entirely versed with the crafts of his profession and quite at home with the purposes of his sordid and cold self interest. The king stood in the place of “Gods vicegerent in earth” as Lord Bacon has called him, invested with one of the divine attributes,—the power of punishing the guilty and rewarding the innocent and *virtuous*—and morally bound to the furtherance of the welfare of the subject population. Who can now forbear from changing his side? Who will now be inclined to the Guelfs? It is to him and him alone that Dr. Arnold’s censure is peculiarly applicable.

*Answer 11th.*—At the close of the 16th century England was distracted by three great parties—consisting first of those who were the supporters of the established Church as already reformed—second those who wished to

carry the reformation further, and third of those who were entirely averse to all changes whatever, but were strongly attached the Pope and his Church. The followers of the reformed Churches, though disagreed with one another in many points of minor importance, unanimously concurred in asserting the national independence in matters of religion and conscience, in excluding the dominion of the Popes, and in acknowledging the King or the Queen of the Realm as the head of the Church. The second party i. e. the party of the Puritans strongly advocated a further reform in the Church—they complained bitterly of an unpreaching ministry, strongly protested against the reading of a fixed liturgy, denied the supremacy of the monarch in matters of Church government and insisted upon a literal interpretation of the scriptures in all religious questions, as the only solution of the puzzle. But the other party i. e. the party of the Roman Catholics, could not act openly for themselves as the mass of the nation belonged to the party of reformation. They agreed with the Puritans in denying the royal ascendancy but differed too widely from them in considering the Pope as the supreme governor in all matters of religion. A very celebrated author has described these parties by the names of the “active Romanists,” the “peaceable Protestants” and the “restless nonconformists” but Dr. Arnold has very justly remarked that the character of peaceable meekness assigned to the members of the second party cannot be considered as truly admirable. They had no temptation to be otherwise; therefore they are not entitled to any positive share of commendation.

*Answer 12th.*—The French revolution was a revolution not only in political affairs, but introduced great changes in the social relations of the people of that country. The government was not only changed but all the distinctions between the rich and the poor, the great and the law went to “wrack.” Every freeborn citizen was levelled as it were in the great theatre of the world. It was this which made it the darling of the common multitude, who anticipating the useful advantages that would accrue them from a system of government, whose principle will be *liberty, equality, and fraternity*, hesitated not in the least to lend all their assistance to the coming movement and to strain every nerve for the accomplishment of so grand a purpose. With the exception of the poorer classes of Lavendee, they all hailed with joy the hour which promised them an equal enjoyment of rights, privileges and honours, with those proud worthies who before trampled upon them as creatures not endued with rationality; and tried their main and might to aid the abolition of the seigneurial dominion in France—a dominion which at one time denied them privileges which every human creature is entitled to claim. But the case was entirely different with the revolution of 1688 in England. It was a contest about principles which is not very intelligible to the “hydraheaded multitude” of Shakespeare. The English revolution introduced no changes in the affairs of social life—changes which every one can appreciate; and though by increasing the power of the Parliament the great strong-hold of British liberty, and by lessening the power of the monarch, it did confer on all the most everlasting advantages, yet the communication of these advantages was indirect; consequently the people whose “eyes” as Shakespeare says “are more learned than their sense” were utterly inadequate to understand and appreciate them fully. They found the old relations in which the stood to the higher classes were still the same; and that over and above this

additional taxes which were imposed upon them for the accomplishment of the Revolution involved them in greater poverty and misery. They paid and suffered, as they thought for no real advantage. It was these feelings combined with that peculiarity in the constitution of the popular mind by which it is led to haste the existing state of things, which estranged them from the cause of the Revolution of 1688, in England.

*Answer 13th.*—In the year 1703 the popular party in England supported the war against France because they suspected the French king and his subjects to be in close and secret alliance with their political rivals at home. The secret negotiations with the French power, which were carried on by the party opposed to them, and the succession of a person whom they did not like in the place of Marlborough gave them true cause of alarm. Like the Council of the Four Hundred in Athens, who though they were willing to maintain the power and influence of that celebrated city, were yet firmly resolved to surrender her into the hands of the Lacedemonians rather than bear the triumph of their adversaries at home, the aristocratical party in England held secret communications with the French sovereign with the hope of depressing their political rivals in their own country. But in 1793 the state of parties in the two countries was entirely changed. The English party which advacated the popular cause found that the mass of the French nation was inclined to their side; they therefore very consistently supported the French war in 1703 as they deprecated it in the present case.

*Answer 14th.*—The first great qualification in an historian is an earnest craving after truth and utter impatience not of falsehood merely but of error. Our author very justly observes that truth when sought can always be found; an well intentioned man, who is a sincere votary of truth and who not only hates falsehood but is utterly impatient in detecting the tricks which falsehood garbled in the shape of truth generally plays with mankind is a person whose credibility is indisputable. Many of the modern historians being deceived by one of the usual flourishes of Barrere have furnished us with a very false account of the striking of the French ship LaVengur. Even Mr. Carlisle in the first edition of his celebrated work adopted this erroneous account of the valour of the French crew in that ship. But his strong and vigorous mind which was quite impatient of all errors, being led to enquire further into this matter, he found from sources of great credibility that the case was actually the reverse. The detection by the celebrated Mr. Waddington of that celebrated misquotation by Mosheim, Robertson and other writers of great note sufficiently illustrates the necessity in an historian of an earnest craving after truth and utter impatience not of falsehood merely but of error. Had not the enquiring and speculative mind of Mr. Waddington been led to this discovery, the world would have been perhaps still imposed upon by a strange misunderstanding of the state of men's mind with respect to religion at the beginning and end of the 7th century. A passage of D'Acheri one of the Benidictine writers would have been falsely attributed to the Bishop of Elloy, so important therefore is this qualification in an historian that this ought to stand in the first and most prominent place.

**DWARKANAUTH MITTRE, Hooghly College,**  
**First Class, College Department.**

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SCHOLARSHIP EXAMINATIONS  
OF  
1851-52.  
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**SCHOLARSHIP EXAMINATIONS**

**OF THE**

**GOVERNMENT COLLEGES AND SCHOOLS,**

**IN**

**BENGAL,**

**FOR**

**1851-52.**



**CALCUTTA:**

**F. CARBERY, BENGAL MILITARY ORPHAN PRESS.**

**1852.**



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## PUBLIC EXAMINATIONS OF 1852.

The papers on the various subjects were prepared by the undermentioned Gentlemen :—

### English Scholarships.

#### *Senior.*

|                              |                                   |
|------------------------------|-----------------------------------|
| ENGLISH ESSAY, - - - - -     | G. Lewis, Esq.                    |
| RHETORIC, - - - - -          | J. Kerr, Esq., M. A.              |
| LITERATURE PROPER, - - - - - | G. Lewis, Esq.                    |
| HISTORY, - - - - -           | J. Sutcliffe, Esq., B. A.         |
| PURE MATHEMATICS, - - - - -  | A. S. Harrison, Esq., B. A.       |
| MIXED MATHEMATICS, - - - - - | { } A. S. Harrison, Esq., B. A.   |
| VERNACULAR ESSAY, - - - - -  | Pundit Eshwar Chunder Bidyasagar. |
| LATIN ESSAY, - - - - -       | J. Kerr, Esq., M. A.              |

### Arabic Scholarships.

|                          |                           |                  |
|--------------------------|---------------------------|------------------|
| CALCUTTA MUDRISSA, - - - | { Senior and<br>Junior, } | Dr. A. Sprenger. |
| HOOGHLY MUDRISSA, - - -  | { Senior and<br>Junior, } |                  |

I. The scholarship examinations of all the Colleges and Schools in Bengal, were held upon the dates and at the hours specified below :

| DATES.              | SUBJECTS.                      |                             |
|---------------------|--------------------------------|-----------------------------|
|                     | <i>Senior Scholarships.</i>    | <i>Junior Scholarships.</i> |
| Tuesday Oct. 5th, - | Literature Proper, - - - - -   | Grammar.                    |
| Wednesday , 6th, -  | Mental and Moral Philosophy, - | History.                    |
| Thursday , 7th, -   | History, - - - - -             | Mathematics.                |
| Friday , 8th, -     | Pure Mathematics, - - - - -    | Geography.                  |
| Saturday , 9th, -   | Mixed Mathematics, - - - - -   | Translations.               |
| Monday , 11th, -    | English Essay, - - - - -       | Literature.                 |
| Tuesday , 12th, -   | Vernacular or Latin Essay.     |                             |

The examinations were held daily from 10 A. M. to 1½ P. M., and from 2 to 5½ P. M. precisely, at which hours all answers to the morning and afternoon papers, respectively, were given in.

II. The following is the manner in which the examinations are conducted :—

I. Sets of questions on the various branches of study in the senior department, are prepared by the examiners selected by the Council of Education.

The junior scholarship questions are prepared and the answers examined by the officers of the Colleges for their own Institutions, in strict accordance with the existing standards and rules on the subject.

The same duty is performed by the Local Committees for the respective Zillah Schools over which they preside.

2. In Calcutta one of the members of the Council of Education presides at the examination of each day ; in the Mofussil a member of the Local Committee performs the same duty : each is furnished with copies of the scholarship questions under a sealed cover, with a superscription specifying the subject of the contained paper, and the day on which it is to be opened in the presence of the scholarship candidates.

3. The students assemble in a room without books, papers, or references of any kind, are not allowed to communicate with each other during the examination, and on that account are placed at a proper distance from each other.

4. They are required to answer the questions, and to write the essays without any assistance whatever: to ensure this, one of the members of the Council remains in the room, and superintends the whole examination.

5. Any attempt at, or practice of unfair means, subjects the offending party to a fine of 100 Rs. in cases of senior, and 50 Rs. in cases of junior scholarships ; non-payment of the fine within one month subjects the offender to exclusion from the Institution till payment, and no offender is capable of then, or again, competing for any scholarship.

6. At the hour fixed for the close of each day's examination, every student delivers his answers, signed by himself, to the superintending member of the Council or Local Committee.

7. The examiners fix an uniform standard of value for each question according to its importance. A perfectly correct and complete answer obtains the full number of marks attached to the question ; an imperfect answer obtains a part only of the full number, in proportion to its approximation to correctness and completeness.

8. The award of scholarships is determined in accordance with the rules laid down in the late Hon'ble J. E. D. Bethune's Minute on the subject, published in the Annual General Report of the Council for 1849-50, p. 6.

9. No student, not being already a scholarship-holder, or a free scholar, is allowed to compete for a scholarship, whom the Principal of the College or the Head Master of the School to which he belongs, does not consider competent to attain the requisite standard.

FRED. J. MOUAT, M. D.,  
*Secretary to the Council of Education.*

1st December, 1852.

# SCHOLARSHIP QUESTIONS.

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## SENIOR SCHOLARSHIPS, 1852.

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### Literature Proper.

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#### FIRST AND SECOND COLLEGE CLASSES.

*Morning Paper, from 10 to 1½.*

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#### MACBETH.

##### I.

ENTER LADY MACBETH, READING A LETTER.

“Lady M. Glamis thou art, and Cawdor ; and shalt be  
What thou art promis’d ;—yet do I fear thy nature ;  
It is too full o’ the milk of human kindness,  
To catch the nearest way. Thou would’st be great ;  
Art not without ambition ; but without  
The illness should attend it. What thou would’st highly,  
That would’st thou holily ; would’st not play false,  
And yet would’st wrongly win ; thou’dst have, great Glamis,  
That which cries, “ Thus must thou do, if thou have it ;  
And that which rather thou dost fear to do,  
Than wishest should be undone.” Hie thee hither,  
That I may pour my spirits in thine ear,  
And chastise with the valour of my tongue  
All that impedes thee from the golden round,  
Which fate and metaphysical aid doth seem  
To have thee crown’d withal.”

Explain all the meaning of this, clearly, and fully.

## II.

Carefully compare, and discriminate between, the characters of Macbeth and Lady Macbeth.

## III.

*Macb.* If it were done when 'tis done, then 'twere well  
 It were done quickly : if the assassination  
 Could trammel up the consequence, and catch,  
 With his surcease, success ; that but this blow  
 Might be the be-all, and the end-all here,  
 But here, upon this bank and shoal of time,—  
 We'd jump the life to come.—But in these cases  
 We still have judgment here ; that we but teach  
 Bloody instructions, which, being taught, return  
 To plague the inventor : this even-handed justice  
 Commends the ingredients of our poison'd chalice  
 To our own lips."

Explain clearly the meaning of this passage, in language free from metaphor.

## IV.

*Macb.* Is this a dagger which I see before me,  
 The handle toward my hand ? Come, let me clutch thee :—  
 I have thee not, and yet I see thee still.  
 Art thou not, fatal vision, sensible  
 To feeling, as to sight ? or art thou but  
 A dagger of the mind, a *false creation*,  
 Proceeding from the heat-oppressed brain ?  
 I see thee yet, in form as palpable  
 As this which now I draw."

Explain Shakspeare's Theory of Apparitions as illustrated in this play, in Hamlet, Julius Cæsar, &c.; and state whether or not it is confirmed by modern science.

Describe the state of Macbeth's mind whilst he utters these words, by a quotation from Julius Cæsar.

Quote the words of the Queen in Hamlet which express the same sense exactly as those in italics.

## V.

*“Macb.* To be thus, is nothing :  
 But to be safely thus :—Our fears in Banquo  
 Stick deep ; and in his royalty of nature  
 Reigns that which would be fear'd ; 'tis much he dares ;  
 And to that dauntless temper of his mind,  
 He hath a wisdom that doth guide his valour  
 To act in safety. There is none but he  
 Whose being I do fear ; and *under him*  
*My genius is rebuk'd* ; as, it is said,  
*Mark Antony's was by Cæsar.*”

Is it in reality the fear of Banquo that torments Macbeth ? If not, what is it ?

Does the Poet answer any two-fold purpose by making Macbeth thus extol Banquo ?

Quote the passage from Antony and Cleopatra which is an improvement upon the italics.

What celebrated philosopher does Macbeth follow in speaking of his “genius” ?

## VI.

*“Macb.* We have scotch'd the snake, not kill'd it ;  
 She'll close, and be herself ; whilst our poor malice  
 Remains in danger of her former tooth.  
 But let the frame of things disjoint, both the worlds suffer,  
 Ere we will eat our meal in fear, and sleep  
 In the affliction of these terrible dreams,  
 That shake us nightly : Better be with the dead,  
 Whom we, to gain our peace, have sent to peace,  
 Than on the torture of the mind to lie  
 In restless ecstasy. Duncan is in his grave ;  
 After life's fitful fever he sleeps well ;  
 Treason has done his worst : nor steel, nor poison,  
 Malice domestic, foreign levy,—nothing,  
 Can touch him further !”

Explain all that is suggested by, and implied in, this passage with reference to Macbeth's feelings, and mental and moral condition.

VII.

*Macb.* Be innocent of the knowledge, dearest chuck,  
Till thou applaud the deed. Come, seeling night,  
Scarf up the tender eye of pitiful day,  
And, with thy bloody, and invisible hand,  
Cancel, and tear to pieces, that great bond  
Which keeps me pale."

Point out all the circumstances suggested, or alluded to, by the figurative expressions in this passage.

In another place Hecate is ' pale';

"Witchcraft celebrates  
Pale Hecate's offerings."

**Explain the apparent discrepancy.**

VIII.

Illustrate briefly the confused character of the Superstition reflected in this Tragedy.

IX.

Illustrate, by means of its most striking features, the great moral cautions conveyed by this tragedy;—the fulness of its moral scope and purpose.

x.

"Upon the corner of the moon  
There hangs a vap'rous drop profound."

"I have words  
That would be howl'd out in the desert air."

“ Wicked dreams  
Abuse the curtain'd sleep.”

Quote passages from our Literature which are, more or less, imitations of these extracts from Macbeth.

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FIRST, SECOND AND THIRD COLLEGE CLASSES.

*Afternoon Paper, from 2 to 5½.*

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JOHNSON'S RAMBLER.

XI.

Explain why mythological beings are properly introduced into Comus, but improperly into Lycidas,—according to Johnson.

XII.

“ Together both, ere the high lawns appear'd  
Under the opening eye-lids of the morn,  
We drove a field, and both together heard  
What time the grey fly winds her sultry horn,  
Battening our flocks with the fresh dews of night.”

Johnson, in his criticism of Lycidas, says, “ In this poem there is no nature, for there is no truth.—We know that they never drove a field, and that they had no flocks to batte.”

Is the criticism just?

Explain the difference between nature and truth, and poetry.

XIII.

Describe the construction of the Spenserian Stanza.

What are Johnson's objections to it?

Why did Thomson, Beattie, Byron and Shelley adopt it?

XIV.

“ So eagerly the fiend  
O'er bog, or steep, through strait, rough, dense, or rare,  
With head, hands, wings, or feet, pursues his way,  
And swims, or sinks, or wades, or creeps, or flies.”

Criticise the music of these verses.

## XV.

“ O now, for ever,  
 Farewell the tranquil mind ! farewell content !  
 Farewell the plumed troop, and the big wars,  
 That make ambition virtue ! O, farewell !  
 Farewell the neighing steed, and the shrill trump,  
 The spirit-stirring drum, the ear-piercing fife,  
 The royal banner ; and all quality,  
 Pride, pomp, and circumstance of glorious war.”

Criticise the pauses in these verses, upon Johnson's principles.  
 What advantage has blank verse over rhyme, with reference to pause ?

## XVI.

“ Now pursuing, now retreating,  
 Now in circling troops they meet.  
 To brisk notes in cadence beating  
 Glance their many-twinkling feet.  
 Slow melting strains their Queen's approach declare ;  
 Where'er she turns, the graces homage pay ;  
 With arms sublime that float upon the air,  
 In gliding state she wins her easy way.”

Point out, and explain the reason of the transition in the measure of these verses.

## XVII.

“ Over hill, over dale,  
 Through bush, through briar,  
 Over park, over pale,  
 Through flood, through fire ;  
 I do wander every where,  
 Swifter than the moone's sphere.”

Scan these verses.

What remark by Johnson on the use of the vowels do the last verses illustrate ?

Point out the transition in the measure, and explain the occasion of it.

## XVIII.

“ There are who deaf to mad ambition's call  
 Would shrink to hear the obstreperous trump of fame,  
 Supremely blest, if to their portion fall  
 Health, competence, and peace.”

“ Now air is hush'd, save where the weak-ey'd bat  
 With short shrill shriek flits by on leathern wing,  
 Or where the beetle winds  
 His small but sullen horn.”

“ Then at the last and only couplet fraught  
 With some unmeaning thing they call a thought,  
 A needless Alexandrine ends the song,  
 That like a wounded snake, drags its slow length along.”

Illustrate, by means of these quotations, the power of sound and time, respectively, to represent sense.

## XIX.

“ Now morn, her rosy steps in the eastern clime  
 Advancing, sow'd the earth with orient pearl,  
 When Adam wak'd, so custom'd; for his sleep  
 Was aery-light, from pure digestion bred,  
 And temperate vapours bland, which the only sound  
 Of leaves and fuming rills, Aurora's fan  
 Lightly dispers'd and the shrill matin song  
 Of birds on every bough.”

Is any part of this beautiful passage objectionable upon true principles of criticism?

## XX.

“ Come, thick night,  
 And pall thee in the dunkest smoke of hell!  
 That my keen knife see not the wound it makes;  
 Nor heaven peep through the blanket of the dark  
 To cry, *Hold, hold!*”

Johnson objects to this passage, which he ascribes by mistake to Macbeth, meanness of expression. "Dun," "knife," "blanket," are unsuited to the dignity of the ideas, in his opinion.

### **Criticise Johnson's criticism.**

XXI.

" *Hotspur.* By heaven, methinks, it were an easy leap,  
To pluck bright honour from the pale-fac'd moon;  
Or dive into the bottom of the deep,  
Where fathom line could never touch the ground,  
And pluck up drowned honour by the locks."

**Criticise these sentiments upon Johnson's principles.**

XXII.

"I was never permitted to sleep till I had passed through the cosmetic discipline, part of which was a regular lustration performed with bean-flower water and May dews; my hair was perfumed with a variety of unguents, by some of which it was to be thickened, and by others to be curled. The softness of my hands was secured by medicated gloves, and my bosom rubbed with a pomade prepared by my mother, of virtue to discuss pimples, and clear discolorations."

Test these words from the Rambler, supposed to be spoken by a young lady, by applying to them Johnson's canon for determining the propriety, or impropriety of expression.

## XXIII.

“Observations like these are commonly nothing better than covert insults, which serve to give vent to the flatulence of pride.”

“Of these adscititious passions, some, as avarice and envy, are universally condemned.”

“Experience soon shows us the tortuosities of imaginary rectitude, the complications of simplicity, and the asperities of smoothness.”

“Sorrow is the putrefaction of stagnant life, and is remedied by exercise and motion.”

Criticise these quotations from the Rambler.

## XXIV.

“Hasty compositions, however they please at first by flowery luxuriance, and spread in the sunshine of temporary favour, can seldom endure the change of seasons, but perish at the first blast of criticism, or frost of neglect.”

“We should then find out the absurdity of stretching out the arms incessantly to grasp that which we cannot keep, and wearing out our lives in endeavours to add new turrets to the fabric of ambition, when the foundation itself is shaking and the ground on which it stands is mouldering away.”

Divest the sense of these quotations of metaphor, and express it in plain language.

## THIRD AND FOURTH COLLEGE CLASSES.

*Morning Paper, from 10 to 1½.*

## THOMSON'S SEASONS, AND CASTLE OF INDOLENCE.

## I.

“Ye that keep watch in heaven as earth asleep  
 Unconscious lies, effuse your mildest beams,  
 Ye constellations, while your angels strike,  
 Amid the spangled sky, the silver lyre.”

Explain the difference between poetry and truth, through these verses.

What is the difference between poetry and a lie?

What is the scope, or end of poetry? Mention some of the means through which the poet effects his purpose.

What classical superstitions are alluded to in the two last verses?

## II.

“ Hung o'er the furthest verge of heaven, the sun  
 Scarce spreads through ether the dejected day.  
 Faint are his gleams, and ineffectual shoot  
 His struggling rays in horizontal lines  
 Through the thick air; as, cloth'd in cloudy storm,  
 Weak, wan, and broad, he skirts the southern sky;  
 And soon descending to the long, dark night,  
 Wide-shading all, the prostrate world resigns.”

Point out the words in this description which are used figuratively; and explain the effect of the figurative use of each.

## III.

“ The full ethereal round,  
 Infinite worlds disclosing to the view,  
 Shines out intensely keen; and all one cope  
 Of starry glitter glows from pole to pole.  
 \* \* \* It freezes on;  
 Till morn, late rising o'er the drooping world,  
 Lifts her pale eye unjoyous.”

What is the difference between “ the full ethereal round,” and “ all one cope”?

Why “ *full*” round? and “ *all one*” cope? Is there more than ‘ *one*’ cope?

By what image is morn here represented?

Point out the circumstances in which the two resemble each other.

## IV.

“ Nor can the Muse the gallant Sidney pass;  
 The plume of war, with early laurels crown'd,  
 The lover's myrtle, and the poet's bay.”

Explain the allusions contained in these verses.

## V.

“ Thine a steady More,  
 Who, with a generous, though mistaken zeal,  
 Withstood a brutal tyrant’s useful rage ;  
 Like Cato firm, like Aristides just,  
 Like rigid Cincinnatus nobly poor ;  
 A dauntless soul erect, who smiled on death.”

Point out all the allusions contained in this passage.

## VI.

“ Bacon  
 Led forth the true philosophy ;  
 He led her forth,  
 Daughter of Heaven ! that, slow-ascending still,  
 Investigating sure the chain of things,  
 With radiant finger points to Heaven again.”

Describe the character, and tendency of Bacon’s philosophy, as figured here.

## VII.

“ Let Newton, pure intelligence ! whom God  
 To mortals lent, to trace his boundless works  
 From laws sublimely simple, speak thy fame  
 In all philosophy.”

Under what figure is Newton here represented ?

Why “ *lent* ” ?

Shakspear and Milton both use ‘ *lent* ’ on similar occasions.

What laws are alluded to, and why are they called “ *sublimely simple* ” ?

## VIII.

“ For lofty sense,  
 Creative fancy, and inspection keen  
 Through the deep windings of the human heart,  
 Is not wild Shakspeare thine, and nature’s boast ” ?

Has any change of opinion taken place since Thomson’s day, or is Shakspeare still considered “ *wild* ” ?

Quote Milton, and Gray’s verses on Shakspeare.

## IX.

“ Is not each great, each amiable muse  
 Of classic ages in thy Milton met ?  
 A genius universal as his theme ;  
 Astonishing as chaos ; as the bloom  
 Of blowing Eden fair ; as Heaven sublime.”

Quote the verses upon Milton alluded to in the two first lines.  
 Point out the allusions in the three last verses.

## X.

“ Come on, my muse, nor stoop to low despair,  
 Thou imp of Jove, touch'd by celestial fire !  
 Thou yet shalt sing of war, and actions fair,  
 Which the bold sons of Britain will inspire ;  
 Of ancient bards thou yet shalt sweep the lyre ;  
 Thou yet shalt tread in tragic pall the stage,  
 Paint love's enchanting woes, the hero's ire,  
 The sage's calm, the patriot's noble rage,  
 Dashing corruption down through every worthless age.”

What description of poetry does the Poet premise to write in the four first verses ? Did he fulfil his promise ?

In the fifth verse ?

Quote the passage in Milton called up by the sixth.

Quote Gray's description of the subjects of Tragedy.

Name some of Thomson's tragedies.

Why is the poet, of all writers, bound to inculcate virtue ?

## XI.

“ Here whilom ligg'd th' Esopus of the age ;  
 But call'd by fame, in soul ypricked deep,  
 A noble pride restored him to the stage,  
 And rous'd him like a giant from his sleep.  
 Ev'n from his slumbers we advantage reap,  
 With double force th' enliven'd scene he wakes,  
 Yet quits not nature's bounds. He knows to keep  
 Each due decorum ; now the heart he shakes,  
 And now with well urg'd sense th' enlightened judgment takes.”

Express all the sense, and nothing but the sense, of this stanza in different language, and in prose.

Why are obsolete words introduced into the Castle of Indolence?

Why is Quin called "the Esopus of the age"?

## XII.

"Bring every sweetest flower; and let me strew  
The grave where Russel lies."

"She, on the bough  
Sole sitting, still at every dying fall,  
Takes up again her lamentable strain  
Of winding woe."

"These endless numbers, swarming round,  
As thick as idle motes in sunny ray."

"With milky blood the heart is overflown."

"Amid the broom he bask'd him on the ground,  
Where the wild thyme, and camomoil are found."

Quote the passages from our literature of which these are imitations.

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## FOURTH COLLEGE CLASS.

*Afternoon Paper, from 2 to 5½.*

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## GOLDSMITH.

### I.

"Pegasus has slipped the bridle from his mouth, and our modern bards attempt to direct his flight by catching him by the tail."

"Fancy restrained may be compared to a fountain, which plays highest by diminishing the aperture."

"An Englishman's virtues seem to sleep in the calm, and are called out only to combat the kindred storm."

"The English have founded an empire on the sea, build cities upon billows that rise higher than the mountains of Tippertala, and make the deep more formidable than the wildest tempest."

Explain the meaning of these passages in plain language, unadorned by metaphor.

## II.

“ We then only are curious after knowledge, when we find it connected with sensual happiness.”

“ What real good, then, does an addition to a fortune already sufficient procure? Not any. Could the great man, by having his fortune increased, increase also his appetites, then precedence might be attended with real amusement.”

“ Every mind seems capable of entertaining a certain quantity of happiness, which no institutions can increase, no circumstances alter, and entirely independent of fortune.”

“ Gratitude is never conferred but where there have been previous endeavours to excite it; we consider it as a debt, and our spirits wear a load till we have discharged the obligation.”

Criticise the subject matter, and moral scope of these passages.

## III.

“ The distant sounds of music, that catch new sweetness as they vibrate through the long-drawn valley, are not more pleasing to the ear than the tidings of a far distant friend.”

“ My friend took this opportunity of letting me into the character of the principal members of the club.”

“ I shall never forget the beauties of my native city, Naugfan. How very broad their faces! How very short their noses! How very little their eyes! How very thin their lips! How very black their teeth!”

“ The heart of a wise man should resemble a mirror which reflects every object, without being sullied by any.”

“ This pretty town probably derives its name from its vicinity to the county of Kent; and, indeed, it is not unnatural that it should, as there are only London and the adjacent villages that lie between them.”

Characterise the style of each of these extracts from Goldsmith.

## IV.

“ The running brook, the herbs of the field, can amply satisfy nature; man wants but little, nor that little long.”

“ And what are the commodities which this colony, when established, is to produce in return? Why, raw silk, hemp, and tobacco. England, therefore, must make an exchange of her best and bravest subjects for raw silk, hemp, and tobacco!”

Goldsmith clothes the same thoughts in verse. Quote the passages from his poems.

## V.

“A great lazy puddle moves lazily along.”

Is this prose, or a verse?

Does it recall any line from Pope?

What is the difference between prose and blank verse?

Is poetry ever found in prose, and *vice versa*?

Is verse ever found in prose?

## VI.

“The truth is, the critic generally mistakes humour for wit, which is a very different excellence.”

What is the difference between humour and wit, according to Goldsmith?

Distinguish between these two extracts.

“I had scarcely been seated according to her directions, when the footman was ordered to pin a napkin under my chin; this I protested against, as being no way Chinese; however, the whole company, who, it seems, were a club of connoisseurs, gave it unanimously against me, and the napkin was pinned accordingly.”

“The author, who draws his quill merely to take a purse, no more deserves success, than he who presents a pistol.”

## VII.

“Neither pity, nor tenderness, which ennable every virtue, have any place in his heart.”

“Here the inhabitants of London often assemble to celebrate a feast of hot rolls and butter; seeing such numbers, each with their little tables before them, must be a very amusing sight.”

“If a Duke or a Duchess are willing to carry a long train for our entertainment, so much the worse for themselves.”

“Sir, you are past all hopes, and had as good think decently of dying.”

“Psha, man, what dost shrink at? Here, take this coat; I don’t want it; I find it no way useful to me; I had as lief be without it.”

Point out any thing that appears objectionable in the expression of these passages.

## VIII.

“ Could these last be persuaded, as the Epicureans were, that Heaven had no thunders in store for the villain,” &c

“ To the wise man every climate, and every soil is pleasing; to him a parterre of flowers is the valley of gold; to such a man the melody of birds is more ravishing than the harmony of a full concert.”

“ To find the land disappear, to see our ship mount the waves, swift as an arrow from the Tartar bow.”

“ But man, base man, can poison the bowl, and smile while he presents it.”

Quote passages from Shakspeare of which these are imitations.

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## History.

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### FIRST CLASS.

#### *Morning Paper.*

1. Guizot says—Two revolutions, one visible and even glaring, the other hidden and unknown, were taking place at this epoch; the first, in the kingly power of Europe, the second in the state of society, and the manners of the English people. Explain this.
2. Mention the chief proceedings of the second Parliament of Charles.
3. Give the names of the leading men in the third Parliament. What was the Petition of Rights?
4. Who were the chief advisers of Charles after the dissolution of his third Parliament?—By what means did they govern between 1629-40?
5. What effect did their tyrannical measures produce on the country at large?
6. Give the particulars of the impeachment and trial of Strafford. What was his character?

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#### *Afternoon Paper.*

1. What were the first measures of reform which passed through the Long Parliament? Under what circumstances did symptoms of dissension first manifest themselves?

2. What was the Remonstrance? What was the character of Laud?
3. What was the self-denying ordinance? What was the nature of the connexion which Charles kept up with the Irish?
4. What were the proposals which Parliament made to Charles at Newcastle?
5. How do you account for the power acquired and maintained by the Independents?
6. What was the instrument of Government? What changes were made in it by the Parliament of 1657?

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SECOND CLASS.

*Morning Paper.*

1. What was the state of the people in England at the accession of Charles?
2. Mention the chief proceedings of the second Parliament of Charles.
3. Give the names of the leading men in the third Parliament. What was the Petition of Rights?
4. Who were the chief advisers of Charles after the dissolution of his third Parliament? By what means did they govern between 1629-40?
5. What effect did their tyrannical measures produce on the country at large?
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5. How do you account for the power acquired and maintained by the independents?
6. What was the character of Charles?

## THIRD AND FOURTH CLASSES.

*Morning Paper.*

1. Give the particulars of the dissolution of the Ghorian Empire.
2. Mention the leading incidents in the life of Gheias-u-din Bulbun.
3. Make a chronological table of the slave kings.
4. Give an account of Ala-u-din's invasion of the Deccan.
5. Make a chronological table of the conquests effected by Ala-u-din. What was his character?
6. Who was Mohammed Toghlaq. Mention some of the wild schemes entertained by this monarch. What foreign accounts have been handed down to us of his court and government?
7. Give a short account of Tamerlane's invasion of India.

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*Afternoon Paper.*

1. Draw a map of India, marking down the chief places mentioned in this period of history.
2. State what you know respecting the descent and early life of Baber. What was his character?
3. Who was Shir Khan?—Give an account of the contest between him and Humayon.
4. What change in the condition of the Rajpoots did the Mahometan conquest make?
5. Make a chronological table of the wars in which Akber was engaged.
6. State what you know respecting the civil and religious policy of Akber.

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MENTAL PHILOSOPHY.

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FOR THE SENIOR CLASSES.*Morning Paper.*

1. What is commonly understood by the term Metaphysics? Can "Stewart's Philosophy of the Human Mind" be properly called a work on Metaphysics, using the term in its popular sense? Is there not reason to believe that the vague meaning of this term has had some effect in bringing what is clear and useful in mental science into the same discredit as what is obscure and frivolous?

2. Mention some of the peculiar difficulties inseparable from the subject of Mental Philosophy. Give some examples of that particular difficulty which lies in the imperfection of language. Show also that with improvements in language a silent advance is made in general knowledge, the classification of objects becoming on the one hand more precise, and on the other more comprehensive.

3. What modern writer was the first to draw attention to the relations which connect our thoughts together and to the laws which regulate their succession. "The attempt," it has been said, "was great and worthy of his genius." Show that it was in the true scientific direction. Some writers have considered the enumeration by the writer alluded to of the principles which regulate the succession of our thoughts as defective. What answer would you give to this objection?

4. Give a brief sketch of Stewart's observations on what he calls "casual associations." Some popular errors and superstitions have their origin in "casual associations." Do you think that a careful perusal of Stewart's instructive observations on this subject is likely to have a beneficial effect in clearing the mind of these errors?

5. According to some writers the province of imagination is limited to objects of sight. What celebrated writer has given currency to this opinion? Does Stewart agree with him?

It is observed that in the rise of the fine arts, Taste is defective and Imagination vigorous; and that in their progress, the former improves and the latter declines. Can this remarkable effect be accounted for on general principles?

6. What are Stewart's views on the question of the gradual progress of society to a state of greater happiness, through the influence of education and the general diffusion of useful information? Does the history of the past lead us confidently to expect this progressive improvement in time to come?

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#### POLITICAL ECONOMY.

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##### *Afternoon Paper.*

1. Describe the nature and origin of Rent. Name the different kinds of Rent which exist in different parts of the globe.

2. What is the peculiar character of Ryot Rents? In what countries are they established, and to what circumstances do they owe their origin?

Has the Ryot in India any permanent interest in the improvement of the land which he cultivates?

3. If Government were to relinquish, supposing it possible, the whole revenue derived from land in this country, what would be the effect of such a measure on the price of food?

4. Prove that the interests of the landlords are not in opposition to those of the other classes of the community, and that the prosperity of no class can be permanently increased by the depression of the others.

5. What will be the probable effect on rents and on wages of a large increase of the precious metals?

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DR. ABERCROMBIE'S PHILOSOPHY OF THE MORAL FEELINGS.

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FOR THE JUNIOR CLASSES.

*Morning Paper.*

1. Dr. Abercrombie says, that "the light of Reason" and "the light of Conscience" are two of the sources from which we derive our knowledge of the Moral Feelings. Explain clearly what is meant by the light of Reason and the light of Conscience.

2. What reasons may be given for placing the light of Divine Revelation among the sources from which we derive our knowledge of the "Moral Feelings?"

3. Are there any truths in Moral science analogous to what are called "first truths in Intellectual science"? If there are, mention some of the most remarkable of them.

4. Point out the distinction between what are called "the active principles" of our moral nature and "the passive principles." Give some examples of each.

5. In treating of Compassion, Dr. Abercrombie notices the diversity which is found in the condition of different individuals. What important moral purposes are answered by this diversity in the condition of different individuals.

6. Point out the importance to society of the virtue of veracity. In telling a story, facts may be connected together in such a way as to convey an erroneous impression. Is such conduct to be regarded as perfectly innocent and praiseworthy, or rather as a violation of the virtue of veracity?

*Afternoon Paper.*

1. Certain affections are sometimes characterised as "malevolent." Some writers prefer the phrase "defensive affections." Why is the latter phrase to be regarded as more appropriate than the other?
2. The tendency of actions is to become easier and of emotions weaker by repetition. Show from these principles that if the benevolent motion be not followed by the appropriate action, the effect on our hearts will be insensibility or selfishness.
3. Describe the office of Conscience as a regulating principle in our nature. Mention some of the circumstances by which the influence of this regulating may be gradually impaired.
4. Dr. Abercrombie says, that in treating of the Moral Powers he has considered various feelings as distinct parts of our constitution, and that it may be supposed that he has unnecessarily multiplied the number of original principles. What reply does he give to this objection?
5. What do you understand by "Theories of Morals"? Mention some of the most remarkable theories of morals which have been proposed by different writers.
6. Paley lays down the proposition that virtue consists in doing good to mankind, in obedience to the will of God, and for the sake of everlasting happiness. He subsequently arrives at the conclusion that whatever is expedient is virtuous. Trace the chain of reasoning which connects this conclusion with the original proposition.

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*English Essay.*

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**FIRST AND SECOND COLLEGE CLASSES.**

"Strange is it, that our bloods,  
Of colour, weight, and heat, pour'd all together,  
Would quite confound distinction, yet stand off  
In differences so mighty."

*All's Well that Ends Well.*

"One touch of nature makes the whole world kin."

*Troilus and Cressida.*

"*Arv.* Are we not brothers?

*Imo.* So man and man should be."

*Cymbeline.*

## THIRD AND FOURTH COLLEGE CLASSES.

“ Thyself, and thy belongings  
 Are not thine own so proper, as to waste  
 Thyself upon thy virtues, them on thee.  
 Heaven doth with us as we with torches do ;  
 Not light them for themselves ; for if our virtues  
 Did not go forth of us, 'twere all alike  
 As if we had them not. Spirits are not finely touched  
 But to fine issues.”

*Measure for Measure.*

“ No man is the lord of anything,  
 Though in him, and of him, there be much consisting,  
 Till he communicate his parts to others.”

*Troilus and Cressida.*

“ Good thoughts, though God accept them, yet towards men are little  
 better than good dreams, except they be put in act.” *Lord Bacon.*

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**Bengali Essay.**

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Describe the advantages that have resulted from the Cultivation of  
 the Physical Sciences.

পদার্থবিদ্যার অনুশিলন হারা যে উপকার দর্শিয়াছে  
 তাহার বর্ণন কর।

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**Latin Essay.**

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“ Possunt quia posse videntur.”

## Pure Mathematics.

Friday, October 8th—Morning Paper.

## FIRST CLASS.

## DIFFERENTIAL AND INTEGRAL CALCULUS.

1. Show that  $d\left(\frac{u}{v}\right) = \frac{vdu - u dv}{v^2}$ ,

$d. \cos u = -\sin u. du,$

$d. \tan^{-1} u = \frac{du}{1 + u^2},$

and differentiate  $u = \log \left\{ \frac{\sqrt{1 + x^2} + x \sqrt{2}}{\sqrt{1 - x^2}} \right\}$ ,

$u = \log \sqrt{\frac{1 - \cos mx}{1 + \cos mx}}, \quad u = \cot^{-1} \sqrt{\frac{4ac - b^2}{2cx + b}}.$

2. If  $u = f(xy) = 0$  find  $\left(\frac{d^2y}{dx^2}\right)$ .

3. Eliminate  $\alpha$  and  $\beta$  by differentiation from the equation  $(x - \alpha)^2 + (y - \beta)^2 = \rho^2$ , and if in the resulting expression for  $\rho$ ,  $x y \frac{dy}{dx} \frac{d^2y}{dx^2}$  be made to have the same values as those at a given point in a curve, what does  $\rho$  become?4. Change the equation resulting in the last example in which  $x$  is the independent variable into one in which  $t$  is the independent variable, given  $x = a \cdot \cos t$ ,  $y = b \cdot \sin t$ , and find  $\rho$  when  $t = 0$ ,

$t = \frac{\pi}{2}.$

5. Prove Liebnitz' theorem, and write down from it  $\frac{d^n u}{d x^n}$  when  $u = x^m e^x$ .6. Expand  $\cos nx$  in terms of  $\cos x$ .

7. If a fraction assume an indeterminate form for a particular value of the variable, its limiting value may be found by differentiating separately the numerator and denominator until one or both cease to vanish.

Ex.  $u = \frac{e^{mx} - e^{-mx}}{(x-a)^r}$  find the limiting value when  $x = a$

$$u = x \log x \quad \text{—————} \quad x = 0$$

8. Integrate the following :

$$\frac{dx}{\cos x}, \quad \frac{x \, dx}{(a + bx + cx^2)^3}, \quad \frac{dx}{1 + x^4}, \quad \frac{x^{\frac{1}{4}} \, dx}{1 + x}, \quad \frac{dx}{(ax^4 + b)^4}$$

9. Obtain formulæ of reduction for,

$$\frac{x^m \, dx}{\sqrt{1-x^2}} \quad \text{and} \quad \frac{dx}{(a^2-x^2)^n}$$

10. Show that  $(\sin x)^m (\cos x)^n \, dx$  is immediately integrable if  $m$  or  $n$  be odd and positive, or  $m + n$  even and negative.

Ex.  $\int (\sin x)^4 (\cos x)^{-8} \, dx.$

*Afternoon Paper.*

1.  $u = \frac{\sin mx}{\sin x}$ , find the maxima and minima values of  $u$ .

$u = a x + b y + c z \quad \text{and} \quad x^2 + y^2 + z^2 = 1 \quad \left. \right\}$  determine whether there is a maximum or minimum, and which.

2. Inscribe the greatest ellipse in a given parallelogram.

3. Find the evolute to the curve  $r = a \theta$ .

4. If the equation to a curve be algebraical and rational and its terms be arranged in homogeneous groups as  $U_1 + U_2 + U_3 + \dots + U_m = 0$ . where  $U_1$  contains the terms of lowest dimensions in  $x$  and  $y$ , then  $U_1 = 0$  represents the system of straight lines which touch the curve at the origin : and apply this to  $y^6 - a^2 xy^2 + bx^4 = 0$  which it is required to trace.

Trace also  $r = a \sin m\theta$  and find its area.

5. Two circles, the distance between whose centres is always  $c$  and radii  $a$  and  $2a$ , have a string round them, if the larger one be fixed and the smaller circle revolve, find the locus of a point in the smaller, distant  $\epsilon$  from its centre. What is the area of the curve traced ?

6. Find the curve in which the subnormal varies as the  $n^{\text{th}}$ . power of the abscissa. What does this become when  $n = 0, 2, 5$ , respectively ?

7. Find the length of the cycloid, and of the evolute of the ellipse.

8. Having given that the co-ordinate of the centre of gravity of a plane area parallel to the axis of  $x$  is  $\frac{\iint x \, dx \, dy}{\iint dx \, dy}$ , prove that the volume of the solid described by a figure revolving through any angle about an axis is equal to the area of the plane figure  $\times$  the length of the path described by the centre of gravity.

*N. B.—The plane figure lies wholly on one side of the axis of revolution.*

Apply this property to compare the volumes generated by an isosceles triangle revolving about its base and about a straight line through the vertex parallel to the base.

### Mixed Mathematics.

*Saturday, October 9th—Morning Paper.*

#### FIRST CLASS.

#### OPTICS.

1. Define the terms *ray*, *pencil*, *focus*. State the laws of reflection and refraction, and show that the reflected ray between two points passes by the shortest path.

2. A small plane area is exposed to light issuing from a point, find the illumination of the surface at any point.

A candle is placed at a certain horizontal distance from a small area, find at what height above the plane the flame is when the illumination is greatest.

3. What is the index of refraction, and under what circumstances is it constant? Prove that though refraction is always possible into a denser medium, the converse is not true.

4. An eye is placed under water;—what will be the appearance of external objects?—will it see *all* external objects?

5. A speck is viewed from the outside of a glass cube through each face in succession; prove that the six images lie in the angular points of an octohedron whose diagonals are all equal though it is not generally regular; also the volume of the octohedron so formed is constant, whatever be the position of the speck within the cube.

6. The conjugate foci of a pencil reflected at a spherical (convex) surface are distant  $p$  and  $q$  from the centre ; Show that  $\frac{1}{p} + \frac{1}{q} = \frac{2}{r}$ , and find when the image of a straight line placed in front of it is an ellipse.

7. What is an achromatic combination ? Show that two prisms of the same substance but different refracting angles may be made to form an achromatic combination, and that two such combinations with their edges at right angles will form a telescope.

8. Describe the Newtonian telescope. What property of light is used in substituting a rectangular glass prism for the small plane mirror ?

9. Draw a figure tracing the course of a pencil through a refracting telescope with an erecting eye-piece.

Why are microscopes made with two and even three compound object-glasses ?

10. The refracting angle of a prism measured by a ray reflected from its two faces in succession, is equal to half the difference of readings of the graduated circle to the centre of which the prism is attached.—Prove this, and describe Wollaston's Reflecting Goniometer.

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*Afternoon Paper.*

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ASTRONOMY.

1. Enumerate the corrections necessary to be applied to the observed place of a heavenly body to find its true place, and point out whence they arise, which of them may be neglected for the fixed stars, and which are independent of the place of observation.

2. Show that the latitude may be conveniently found by observing the transits of a known star by a transit placed East and West. What is the peculiar advantage of this method ? Show that an error of level induces an equal error in the determination of the latitude.

3. In consequence of *aberration* a star appears to describe an ellipse about its true place during the year ; show this, and point out the position of the major axis.

Prove that the displacement caused by aberration =  $\frac{\text{velocity of Earth}}{\text{velocity of Light}} \times \sin. \text{Earth's way.}$

4. The want of accurate coincidence of the centres of graduation and of motion in the Mural Circle is obviated by the use of six microscopes at opposite points of the circle.

5. If a plumb-line be used to determine the error of level of the Mural Circle, the axis must (to adjust the instrument) be moved so as to bring the circle back through one-fourth of the distance between the plumb-line and the circle.

6. Show that there must be *at least two* solar eclipses in a year. The shadow in a solar eclipse moves from East to West over the Earth's surface.

7. Find the time by observing when two known stars are on the same vertical.

Why is it convenient that one should be the pole star?

8. Explain how the sun's distance might be found compared with that of the moon by observing when the moon is "*dichotomized*," *i. e.*, half illuminated. How is the moon's distance found in terms of the Earth's diameter?

9. What is *Annual Parallax*? Show how refraction, &c., may be avoided in the determination.

10. How much is a heavenly body's rising accelerated by refraction? Explain the phenomenon of the Harvest Moon, *i. e.*, the moon rising nearly full several nights successively and at nearly the same hour about the Autumnal Equinox?

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### Pure Mathematics.

*Friday, October 8th—Morning Paper.*

**SECOND CLASS.**

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#### ANALYTICAL GEOMETRY OF TWO DIMENSIONS.

1. Find the area included between the lines,

$$x - y = 0 \quad x + y = 0 \quad x - y = a \quad x + y = b.$$

2. Find the length of the perpendicular from a given point on a given line.

3. Inscribe a circle in a semi-ellipse cut off by the axis minor, and find the limit to the possibility to the problem.

4. In an ellipse if  $\theta$  be the angle between the distances of a point  $(h, k)$  in the curve from the extremities of the axis major and  $\phi$  the obtuse angle between either focal distance and the tangent,  $2 \tan \phi = e \tan \theta$ .
5. Given the vertex of the hyperbola and a straight line which it always touches in a given point, find the locus of the focus.
6. If  $m$  be the tangent of the angle which the tangent to any hyperbola makes with the axis, then  $y = mx \pm \sqrt{a^2 m^2 - b^2}$  is the equation to the tangent.
7. Find the locus of the intersection of tangents to the parabola at right angles to one another.
8. Express the area of a triangle in terms of the co-ordinates of its angular points.
9.  $y^2 = mx + nx^2$ , being the equation to a conic section, find a point whose distance from any point in the curve  $(h, k)$  is a rational function of  $(h$  and  $k)$  and explain the double result in certain cases.
10. Find when the curves of the 2nd degree have asymptotes, and find the equation.
11. Trace the curve,  

$$y^2 - 2xy + 3x^2 - 2y - 4x + 5 = 0.$$

*Afternoon Paper.*

LIMITS AND ELEMENTS OF DIFFERENTIAL CALCULUS.

1. Prove that the surfaces intercepted between two planes parallel to the base of the cylinder are equal in the sphere and circumscribing cylinder.
2.  $AP$  is the arc of a circle radius  $AC = a$ ,  $AQ$  the tangent always taken equal  $AP$ ,  $QP$  is joined and produced to cut  $AC$  in  $R$ , to find the limiting position of  $R$  when  $AP = AQ = 0$ .
3. Define a differential coefficient, and deduce that of  $\frac{e^x}{e^x + 1}$ .
4. Prove Maclaurin's Theorem, and expand by it  $\sin x$ .
5. Give the criteria for finding maxima and minima values of a function of one variable.

Ex.,  $u = x^2 (a-x)^3$

6. Cut the greatest parabola from a given cone.
7. What may be determined from the theory of equations relative to the curve whose equation is  $y^3 - 3axy + x^3 = 0$ ?
8. Show that  $\iint dxdy$  is equivalent to  $\int xdy$  or  $\int ydx$ .
9. Give the rule for Integration by parts, and apply it to  $\int (\tan x)^{-1} dx$  and  $\int (e^{ax} \cos nx) dx$ .
10. In the integration of rational fractions find the coefficient corresponding to any one of the fractions  $\frac{A_0}{(x-a)_n} + \frac{A_1}{(x-a)} n - 1 + \dots + \frac{A_{n-1}}{x-a}$  as  $A_r$ , the denominator of the rational fraction being  $V = (a-x)^n \cdot Q$  and its numerator  $U$ .
11. Integrate  $\frac{du}{\sqrt{u^2 \pm a^2}}$ ,  $\frac{(a+bx) dx}{(x-a)^2 + \beta^2}$ ,  $\sqrt{a^2 - x^2} dx$ , and find the area of a cycloid.

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## Mathematics.

Saturday, October 9th—Morning Paper.

SECOND CLASS.

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### NEWTON, AND SPHERICAL TRIGONOMETRY.

1. Prove Newton's Lemma II.
2. Prove Lemma VI., and show that similar conterminous arcs have a common tangent.
3. Prove Lemma X., and deduce the formula  $S = \frac{1}{2} ft^2$
4. Prove that  $F = \frac{Qh^2}{SP^2} \lim \frac{QR}{QT^2}$ , the force being *repulsive*.
5. A body revolves in an ellipse about the focus, find the law of force.
6. Prove the formula,  

$$\cot a \cdot \sin b = \cot A \sin C + \cos b \cdot \cos C.$$
7.  $O A A_1$  is a spherical triangle right angled at  $A_1$ ,  $A_1 A_2$  is drawn perpendicular to  $O A$ ,  $A_2 A_3$  perpendicular to  $O A_1$ , and so on;

prove that  $A_n A_{n+1}$  ultimately vanishes, and find  $\cos A A_1, \cos A_1 A_2, \cos A_2 A_3$  &c. to infinity.

8. Given the three angles, find the sides. Show that the expressions are real, and state why these data—insufficient in plane trigonometry—suffice here.

9. Prove that the shortest distance between two points on the surface of a sphere is the arc of a great circle passing through them.

10. Apply this to find the direction in which a ship must sail *at starting* from one place to another,—both in lat.  $45^{\circ}$  S., and distant in longitude  $40^{\circ}$ —in order to sail the shortest course.

### Mixed Mathematics.

#### *Afternoon Paper.*

#### HYDROSTATICS, AND NEWTON.

1. Define a fluid; state into what classes fluids are divided, and their distinguishing characteristics. Are liquids *absolutely* incompressible? What is the difference relative to the transmission of pressure practically and theoretically?

2. Find the pressure on the base of a vessel containing fluid. From a cone a similar cone is symmetrically scooped out; having given the dimensions, find the specific gravity of the conical shell when water being poured in the shell is just raised when the hollow space is filled.

3. Part of a vessel (in the side) containing fluid is removed, find in what direction the tendency to motion takes place. Illustrate this by Barker's Mill.

4. Prove Mariotte's law of the pressure of an elastic fluid.

5. A cylindrical diving-bell of given height is sunk to a certain depth, find the height of the water inside and the tension of the rope.

6. A hydrometer has no graduations; show how it may be graduated by immersing it in mixtures of given quantities of water and a fluid whose specific gravity is unknown.

7. Two barometers contain each an unknown quantity of air, show how to find the true reading at any time by comparing them on different days.

8. Describe Smeaton's air pump and its gauge. Find which valve puts a limit to the action of the pump, and the density of the air in the receiver after  $n$  strokes.

9. Draw the double-action pump (De la Hire's) and its valves when the piston is supposed ascending.

10. One body revolves in a circle about the centre, another about the same point (as focus) in a parabolic orbit the vertex of which is midway between the centre and circumference of the circle; find the time in which the latter body describes that part of its orbit which lies within the circle.

11. In an arc of continued curvature the perpendicular to the tangent at one end and that to the chord at the other extremity of the arc ultimately intersect in a point which is the extremity of the diameter of curvature at the point where the tangent is drawn.

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### Pure Mathematics.

*Friday, October, 8th—Morning Paper.*

THIRD CLASS.

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#### THEORY OF EQUATIONS AND CONIC SECTIONS.

1. If  $f(x)$  be a rational and integral algebraic function, show that it is *continuous*.

Hence prove that if two quantities  $a$  and  $b$  substituted for the variable  $x$  in  $f(x)$  give results with different signs, one root at least of  $f(x) = 0$  lies between  $a$  and  $b$ .

2. If  $a$  be a root of  $x^n + p_1 x^{n-1} + p_2 x^{n-2} + \dots + p_n = 0$ , and

$x^{n-1} + q_1 x^{n-2} + q_2 x^{n-3} + \dots + q_{n-1} = 0$  be the equation containing the other roots,—then  $q_r = p_r + a q_{r-1}$ .

3. Approximate to a root of the equation  $x^3 = x^2 + 14$  by a continued fraction to 3 places of decimals.

4. Show that any biquadratic may be reduced to the form,

$$x^4 + px^3 + qx^2 + rx + \frac{r^2}{p^2} = 0,$$

and solve  $x^4 + 4x^3 + 9x^2 + 12x + 9 = 0$  which is of that form.

5. Explain the reason of the analogy between the reducing cubics found by Euler's and Des Cartes' methods of solution of a biquadratic.

6. If a straight line be drawn to cut the parabola in one point, it will generally cut it in another ; prove this, and point out the exception.

7. The straight line drawn making equal angles with the diameter produced and the focal distance in a parabola lies without the parabola ; also between it and the parabola no straight line can be drawn so as not to cut the parabola.

8. In the ellipse find the length of the normal, subnormal, and  $PK$ , where  $GK$  is drawn from the foot of the normal  $PG$  perpendicular to  $SP$ .

9. In the hyperbola

$CN : CA = CA : CT$ ,  $PT$  &  $PN$  being the tangent and ordinate at any point  $P$ .

An hyperbola is traced on a plane ; find its centre, axes, foci, and asymptotes.

10. If the chords be drawn which join the extremities of two conjugate diameters in an ellipse, the diameters parallel to these chords are conjugate.

Draw a pair of conjugate diameters containing a given angle.

*N. B.*—Questions (6).....(10) are to be answered *geometrically*.

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*Afternoon Paper.*

1. Find the sum of the cosines of the angles of a triangle whose sides are the roots of

$$x^3 + p_1 x^2 + p_2 x + p_3 = 0.$$

2. Show that

$$1 + \sqrt[p]{r} \text{ and } \frac{p^{\frac{1}{n-t}}}{p^{\frac{1}{n-t}} + p^{\frac{1}{n-t}}} \text{ are superior and}$$

*inferior* limits respectively of the positive roots of an equation in which  $p$  is the greatest *negative* coefficient,  $-p_r x^n - r$  the *first* and  $-p^t x^n - t$  the *last* negative term,  $p_n$  being positive. If  $p_n$  be negative what limitation or change will be necessary to make the proposition hold ?

3. Solve the equation

$$12 x^3 - 20 x^2 - x + 6 = 0, \text{ whose roots are commensurable.}$$

4. If  $1, a, a^2, \dots, a^{n-1}$  be the  $n$  roots of unity, show that sum of all powers of the roots except the  $rn^{\text{th}}$  = 0.

Hence if  $S$  be the sum of those terms in  $f(x)$ , (an integral function of  $x$ ), in which the index of  $x$  is a multiple of  $n$ , then

$$nS = f(x) + f(ax) + f(a^2x) + \dots + f(a^{n-1}x).$$

5. If an equation have  $r$  equal roots and it be multiplied term by term by the terms of an arithmetic progression, the resulting function = 0 will have  $r-1$  equal roots.

6. A diameter to the parabola terminated by any chord and the tangent at the extremity of the chord is cut by the curve in the same ratio as it divides the chord.

7. In the ellipse

$$AN \cdot NM : NP^2 = AC^2 : BC^2$$

8.  $Pp, Qq$  are any diameters to the ellipse, and tangents are drawn at their extremities, show that,

The parallelogram thus formed : that by conjugate diameters =  $CD : QV$ ,  $CD$  being conjugate to  $CP$ , and  $QV$  a semi-ordinate to  $CP$ .

9. In the figure Euc. B. III. Prop. 12 (two circles touching one another externally), find the locus of the centre of the circle which touches both the circles ; and explain the result when the two given circles are equal.

10. Of two conjugate diameters one meets the transverse the other the conjugate hyperbola only.

*N. B.*—Questions (6) ..... (10) are to be answered *geometrically*.

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## Mixed Mathematics.

*Saturday, October 9th—Morning Paper.*

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### THIRD CLASS.

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#### STATICS.

1. Two forces in one plane act on a body at points  $A$  and  $B$ . Assuming the parallelogram of forces, find the direction of their resultant and the point where it cuts  $A B$ .

If the two forces be equal parallel and opposite, what is their resultant?

2. Describe the Danish Steel-yard, and show that the distances between the points of graduation are in harmonical progression.

Show that this Steel-yard is better adapted for determining light than heavy weights.

3. Describe Roberval's Balance, and prove its property.

4. Find  $P$  to  $W$  in the third system of pulleys—strings parallel and each attached to the weight—taking into consideration the weight of the pulleys.

If the weights be neglected, find the motion of the centre of gravity of  $P$  and  $W$ , when  $P$  is displaced through a given distance.

5. An elastic string *unstretched* is tied round two equal cylinders of given radius. If one of the cylinders be turned through two right angles find the tension of the string, on the supposition that the tension increases by 1 lb. when the string is stretched 1 inch.

6. What is *Friction*, and how may its amount, when two substances are in contact, be experimentally determined?

7. A beam, capable of turning freely about one end which lies on a horizontal plane, rests with its other end on an inclined plane. If friction act, find the limiting position of equilibrium on either side of its position of equilibrium on the plane supposed smooth.

8. A rectangular drawer has two handles symmetrically placed in its face, having given the co-efficient of friction find under what conditions the drawer will open when a force is applied to one handle only and in the direction of the length of the drawer.

9. A polygon which is regular and consists of  $n$  heavy rods is placed on the surface of a smooth sphere, find the strain at the joints of the polygon.

10. From a cube a pyramid, whose base is a face of the cube and vertex the centre of the opposite face, is cut out, find the centre of gravity of the remaining part of the cube.

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*Afternoon Paper.*

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DYNAMICS.

1. Define force, and distinguish between finite and impulsive, accelerating and moving forces.

Prove the formulæ  $v = ft$ , the force being uniform,

$s = vt$ , the velocity being uniform,

and point out at any step any conventions or assumptions made respecting the units of force or velocity.

2. A man walks 9 miles uniformly in two hours, if the unit of space be 176 feet and that of time 12 minutes, what is his velocity ?

3. State and prove the 2nd Law of Motion. On what evidence do these and similar laws rest ?

4. What is Elasticity ? Two smooth and imperfectly elastic spheres impinge on one another in such a manner that the line joining their centres at the moment of impact is in the direction of the motion of one of them ; having given their motion before impact, find the subsequent motion.

5.  $P$  is drawing  $Q$  up over a pulley, if  $Q$  be suddenly doubled at the time  $t$ , find the subsequent motion.

6. A number of equal bodies in contact are connected by inextensible strings of equal length, if a given velocity be communicated to the first, find when the last will begin to move.

7. A body is projected in a given direction with a given velocity : show that its path is a parabola ; and its range on an inclined plane passing through the point of projection being a maximum, find the angle of projection.

A body is projected at a given elevation along the inner surface of a cylinder, and goes round  $n$  times before it begins to descend, find the velocity of projection.

8. A ball carrying a pencil falls down the outside of a vertical cylinder which revolves by the action of a weight at the end of a string passing over a pulley and coiled round the cylinder ; if the motions commence simultaneously find the curve traced by the pencil on the cylinder : and show that its inclination to the horizon at any point is never less than  $\frac{\pi}{4}$ .

9. A perfectly elastic particle is thrown from any point in one of the walls of a rectangular room, and returns to the point of projection after striking the three walls; show that the velocity of projection is not less than that due to the diagonal of the floor.

10. A body projected at an angle  $\alpha$  and with a velocity  $u$ , when at the highest point of its path has its velocity suddenly changed to  $u \tan \alpha$ , find the focus of the new parabola described.

11. A ball fastened to one end of a string of given length revolves uniformly in a circle with a given velocity, find the angle which the string makes with the vertical.

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## Mathematics.

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*Friday, October 8th—Morning Paper.*

FOURTH CLASS.

1. Construct a triangle whose sides are equal to three given straight lines  $A$ ,  $B$ ,  $C$ , any two of which are together greater than the third.

Point out the failure in the construction when one of the sides ( $B$  for instance) is not less than the sum of the other two.

2. Angles in the same segment of a circle are equal to one another.

3. If the exterior angle of a triangle made by producing one of its sides be bisected by a straight line which also cuts the base produced, the segments of the base thus formed have to one another the same ratio as the sides of the triangle have.

When will the bisecting line cut the base produced towards  $B$ ?

4. What are decimal fractions and the advantages attending their use?

Show that the square root of a *recurring* decimal will be either a recurring decimal or nonterminating;

Ex. ;  $\sqrt{.4444 \text{ &c.}}$

5. Find the square roots of  $5$ ,  $1\frac{1}{5}$ ,  $1\frac{1}{4}$ ,  $2\frac{1}{4}$ , each as far as six places of decimals.

6. Solve  $\left(\frac{x-r}{x-s}\right)^3 = \frac{x-2r+s}{x+r-2s}$

7. Explain what is meant by *impossible* or *imaginary* quantities.

If  $x^2 + x + 1 = 0$ ,

and  $(A + B)x + AB + 1 = 0$ , find  $A$  and  $B$ .

8. Find that number which being divided into any two parts, the first part together with the square of the second is equal to the second part together with the square of the first.

2. Find the sum of  $n$  terms of a geometric series whose first term is  $a$  and the common ratio is  $r$ .

When  $r$  is equal to unity why does the formula fail?

10. Between two successive converging fractions, no fraction in lower terms can be inserted which is a closer approximation to the true value.

11. If  $Mx^2 + 2Nxy + Py^2 = 0$ ,

Then  $Mx + Ny = 0$ ,

And  $Py + Nx = 0$ .

*Afternoon Paper.*

1. The diagonals of the complements of parallelograms about the diameter of any parallelogram meet the diagonal of the whole parallelogram in the same point.

2. Describe a triangle having each of the angles at the base double of the third angle: and deduce the expression for  $\sin 36^\circ$ .

3. If two straight lines be at right angles to the same plane they are parallel to one another.

4. Chords of a circle pass through the middle point of a fixed chord, prove that the straight line joining the intersection of the pair of tangents at the extremities of any of these with the intersection of the tangents at the extremities of the fixed chord, is parallel to the fixed chord.

5. Reduce  $\frac{a^2 - 3abx + (3ac + 2b^2)x^2 - 3bcx^3}{a^2 + (ac - 2ab)x + (3a - 2b)cx^2 + 3c^2x^3}$  to its lowest terms.

6. Find the  $n^{\text{th}}$  root of any polynomial.

Ex. ; the  $4^{\text{th}}$  root of

$$x^8 - 12x^7 + 62x^6 - 180x^5 + 321x^4 - 360x^3 + 248x^2 - 96 + 16.$$

Why does the above method fail when applied to arithmetical examples?

7. If the object glass of a telescope, when 4 inches in diameter, cost £60, and when 5 inches in diameter 100 guineas, find the cost of one 10 inches in diameter, the cost of the glass and the workmanship being respectively as the square and cube of the diameter.

8. Find the least number which when divided by 7 and 13 leaves remainders 5 and 11 respectively. How many such numbers are there between 0 and 1000?

9. A number  $n$  of persons vote for or against a certain proposition; it is  $r : s$  that any one of them votes correctly on the subject; find the chance of their votes being unanimous.

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*Saturday, October 9th—Morning Paper.*

1. Show from Euc., Book XI. Prop. 21, that there cannot be more than five regular solids.

2. One of the diagonals of a cube is fixed and two faces are horizontal, the cube is now turned about the diagonal through two right angles, find the inclination of these two faces to their former position.

3. Two persons  $A$  and  $B$  are employed to reap a field, of whom one  $B$  can reap an acre a day;  $A$  works alone at it for  $\frac{m}{n} \times$  the number of days it would take  $B$  to reap it, and then  $B$  alone finishes it, cutting  $p \times$  as many acres as  $A$  would have if they had reaped it *together*, on which supposition the field would have been finished  $r$  days sooner; how long would  $A$  singly take to reap it, and what is the extent of the field?

4. A right angle is sometimes denoted by the number 90 and sometimes by 1.57079 &c.; explain *fully* each case.

5. Divide a given angle analytically and geometrically into two others whose sines shall have a given ratio.

6. Having given two sides and the included angle of a triangle find the third side independently in a form adapted to logarithmic computation.

7. Find  $\tan(A + B + C)$  in terms of the tangents of the simple angles, and *write down* the expression for  $\tan(\alpha + \beta + \gamma + \dots + \lambda)$ .

8. Prove De Moivre's Theorem when the index is a positive integer. Is the equation  $(\cos \theta \pm \sqrt{-1} \sin \theta)^{\frac{p}{q}} = \cos \frac{p\theta}{q} \pm \sqrt{-1} \sin \frac{p\theta}{q}$  an *identical* one?

9. Express  $(\sin \theta)^7$  in terms of the sines of the multiple angles.

10. Squares are described on the sides of an equilateral triangle: find the area of the triangle which will circumscribe the figure thus formed.

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*Afternoon Paper.*

1. Give the geometrical definition of ratio—and show geometrically how the ratio of two straight lines may be determined with any required degree of accuracy.

2. From the ends of a finite straight line  $KL$ , perpendiculars  $KM$ ,  $LN$  are drawn to another straight line  $AB$ , not in the same plane with  $KL$ , and from  $A$ , a point in  $AB$ ,  $AC$  is drawn equal and parallel to  $KL$ , and  $CD$  perpendicular on  $AB$  from  $C$ , show that  $MN = AD$ .

3. Find  $x$  by the method of *cross multiplication* from

$$a_1 x + b_1 y + c_1 z = d_1$$

$$a_2 x + b_2 y + c_2 z = d_2$$

$$a_3 x + b_3 y + c_3 z = d_3$$

and state what substitutions will give the values of  $y$  and  $z$ .

4. If  ${}^n V_r$  denote the number of variations of  $n$  things taken  $r$  together prove that  ${}^n V_r = n \times {}^{n-1} V_{r-1}$  and deduce the expression for  ${}^n V_r$ .

5. In any triangle

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc} \text{ and } \frac{\tan \frac{1}{2} A + \tan \frac{1}{2} B}{\tan \frac{1}{2} A - \tan \frac{1}{2} B} = \frac{c}{a - b}.$$

6. Prove that  $\cot^{-1} \frac{a - x}{2\sqrt{ax}} = 2 \cos^{-1} \sqrt{\frac{a}{a + x}}$ .

If  $\tan^3 \theta = \frac{b}{a}$  find the value of  $a \cdot \sec \theta + b \cdot \operatorname{cosec} \theta$ .

7. Point out the reasons for assuming the radix of the scale of notation as the base of a system of logarithms—and assuming the expansion of  $\log_{\epsilon}(1 + x)$ , show that

$$\log_{\epsilon}(m + 1) = 2 \log_{\epsilon} m - \log_{\epsilon}(m - 1) - 2 \left\{ \frac{1}{2m^2 - 1} + \frac{1}{3} \left( \frac{1}{2m^2 - 1} \right)^3 + \text{&c.} \right\}$$

and calculate  $\log_{\epsilon} 2$ ,  $\log_{\epsilon} 3$ , to six places.

8. The angles under which a fixed distance  $A B$  is seen from two stations  $C$  and  $D$  are each  $= a$ , having given that  $C A$  and  $B D$  meet at right angles, and that  $C D = a$ , find  $A B$ .

9. If  $2 \cos \theta = x + \frac{1}{x}$

$$2 \cos \phi = y + \frac{1}{y}$$

$$2 \cos \chi = z + \frac{1}{z}$$

&c. = &c.,

Find  $2 \cos(\theta + \phi + \chi + \text{&c.})$

10. Adapt to logarithmic computation the formula,

$$P = (1 + \epsilon_1)(1 + \epsilon_2)(1 + \epsilon_3) \text{ &c.}$$

$$\text{where } \epsilon_1 = \frac{1 - \sqrt{1 - \epsilon^2}}{1 + \sqrt{1 - \epsilon^2}} \quad \epsilon_2 = \frac{1 - \sqrt{1 - \epsilon_1^2}}{1 + \sqrt{1 - \epsilon_1^2}} \text{ &c. = &c.}$$

## JUNIOR SCHOLARSHIP QUESTIONS.

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In accordance with the new regulations on the subject, the questions in the various branches of study contained in the junior scholarship course, were set by the officers of the different Colleges, and the members of the Local Committee, each for the Institution under their respective charge.

They are too numerous to print. The general instructions issued upon the subject were, that the standard of study was to be strictly adhered to, and the questions asked such as could reasonably be answered in the time fixed.

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## LIBRARY MEDAL EXAMINATION.

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### *Kishnaghur College.*

Questions on Hallam's 1st vol. of the Middle Ages of Europe.

1. What was the state of Europe after the fall of the Roman Empire?
2. Who was Clovis?—at what time did he appear?—and what conquests did he make?
3. How was his kingdom divided after his death, and what was the result?
4. Who were Pepin, Heristal, and Charles Martel?
5. Who was Pepin the 2nd and what authority did he assume?
6. Who was Charlemagne?—what conquests did he make?—and what new dignity did he acquire?
7. What was the feudal law when was it introduced?
8. What was the Salic law?
9. Who was Charles the Fat, and what was produced by his deposition?
10. What the state of Italy after the deposition of Charles the Fat?
11. After the deposition of Charles the Fat, what changes took place in Germany?
12. Give some account of the Guelph and Ghibeline factions?
13. What was the state of Spain and what alteration took place in that Country?

14. Give some account of the rise of Mahammodanism and the cause of its success.
15. Give a short account of the rise and progress of the Ecclesiastical power.
16. What king of England invaded France, claiming a right to the throne of that Country?
17. Who were Louis the XI. and the Duke of Burgundy? Give the character of each and the general result of their contest.
18. Who was Hugh Capet and how long did his family continue to rule France?
19. Give an account of the misfortunes that fell upon Constantinople.
20. Give an account of the rise and progress of the Crusades.
21. Who was Rollo, and what settlement did he obtain in France?

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*Dacca College.*

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1. Enumerate the most celebrated of the contemporaries of Charles V. mentioning for what they were distinguished.
2. Describe the personal characters of Charles V., Henry VIII., Luther, Leo X.
3. Of the Illustrious men of that æra, which have most influenced the succeeding ages?
4. What was the state of the Arts, of Science, of Religion, and of Morals at that period?

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**ANSWERS**

**OF THE**

**MOST PROFICIENT STUDENTS**

**IN THE**

**Presidency and Mofussil Colleges.**

# ANSWERS.

## Library Medal.

### Dacca College.

*Answer 1st.*—The *Aera* of Charles V., has been rendered famous by the five greatest Monarchs of the World, who then ruled the destiny of Europe, Asia, Africa, and the Americas then lately discovered. Leo the X. in Italy; Henry the VIII. in England; Charles the V. in Germany; Francis the first in France; and Salyman the Ottoman Porte of Constantinopole, lived in the same age, and have sent down their names to posterity woven together and inseparable. In reading the life of any one of these great men we are forced to extend our inquiry and peruse the lives of the rest; for it is utterly impracticable for a reader to have a thorough knowledge of the reign of Charles the fifth, and yet be ignorant of the events that happened in England, in France, in Italy, and in the Ottoman Empire under Henry, Francis, Leo and Salyman. The names we have just enumerated are so strongly and intimately linked together that to mention one of them is to raise the idea of the other four in our mind.

The names of Ceasar and Pompey; of Napoleon and Wellington; of Fredrick\* and Charles; of William and Mary are not more closely associated with one another as those of Charles and Henry; Henry and Francis, Leo and Charles, or Charles and Salyman. In short we find the Emperor, the Pontiff, the Porte and the rulers of France and England in the same History, and almost all over in the same page.

Leo the Tenth sprang from the illustrious family of the Medici. While yet in his teens he was created a Cardinal, and so it was truly said of him that he was never a child. When he had scarcely passed his thirtieth year he was called upon to wear the triple crown and rule the patrimony of St. Peter. Not shrinking from the task, he bravely mounted the papal throne and as he had the expulsion of the French and the Foreigners from Italy for his great object, he joined the cause of the Emperor. He soon after, under a pretence, proclaimed war against France, and through the instrumentality of Charles he had the satisfaction of seeing the re-union of Parma and Placentia to the Church, and a few hours before he had to close for ever his mortal career and all worldly pomp, he heard the happy news that Lantree, the French general, had left Italy totally annihilated. Thus died Leo in the arms of Glory, with a firm, but vain conviction, that henceforth Milan will be ruled by an Italian. During his pontificate sciences and arts flourished, learning was encouraged, and learned men repaired from all sides to Rome. The Pontiff himself was a man of great and varied talents. In his reign Luther first rose in the defence of reformation, and it was Leo's unsettled policy that allowed Luther to become in time that formidable enemy which he soon after proved.

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\* The Czar and Charles XII.

Henry the VIII. was the son and successor of Henry VII. His reign has been distinguished by acts of gross tyranny and brutality. He had divorced Catherine of Aragon and Anne of Cleves, had beheaded Anne Boleyn and Catherine Howard; Jane Seymore escaped the scaffold by an early death and Catherine Parr survived the tyrant. In his reign More and Fisher suffered for religion; Wolsey had to seek refuge from the Court and die broken hearted; and the enlightened Surrey, whose verses yet please and animate us, perished in the flower of his life. Henry had written a defence of the "Seven Sacraments" and dedicated the work to the Pontiff, who considered the arguments as breathing inspiration and awarded the Royal Author with the title of the "Defender of the Faith." In Henry's reign reformation first commenced its glorious career, and his insatiable profligacy drove him from the talons of the Pontiff to embrace the opinions of Luther. These were some of the events that rendered Henry distinguished. In his reign we first find persons accused of high treasons tried in parliament by bill of attainder.

Salyman was the son of Selim the Second. He had not only spread his victorious arms over Persia, but conquered the Northern part of Africa and the greatest part of Austria and Hungary. He had at one time besieged Vienna and for more than twenty years he had spread terror into every European Court. His fleet was commanded by Horne Barbarossa, and his victories in the very heart of the Austrian Empire terrified Ferdinand the Archduke.

Francis the first was distinguished for his rivalry which he maintained with the first monarch of Europe. He had made no conquest, nor he had achieved any very decisive success over Charles, but for upwards of thirty years he had opposed Charles with various success. His courage and wisdom rose with occasion. He had more than once defeated the united efforts of Charles and Henry against France, and had repeatedly invaded Italy and the Netherlands. He was seized and taken prisoner after the dreadful battle of Pavia; and ever after he never allowed an opportunity to pass without injuring his great rival. But Francis was a lover of candour and glory. He was far from all such fraudulent practices to which Charles would often have recourse to. He did not favour the Reformation, but he was in terms of amity, at the very same time, with the Pope and the Smalkaldic Confederates. He patronised learning and learned men and received the proud appellation of the "Father of Letters." In his reign France lost Milan, and several other Italian cities of which he was in possession; and the only conquest he had made was a part of Savoy.

Charles the fifth, was the son of Archduke Philip the handsome and Joanna the second daughter of Ferdinand and Isabella. In his twenty-first year, Charles became Emperor of Germany, having succeeded to the crown of Spain the year preceding. He was unanimously proclaimed successor to Maximilian, and as he was bound to Leo for the indulgence which the Pope had granted to him he leagued with him to expel the French from Italy.\* This end he had achieved very easily, and having won over Bourbon from the French cause he made him a

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\* The indulgence which Leo granted was, that notwithstanding Charles was King of Naples, he could be elected Emperor of Germany. These two titles being never united before.

General in the Imperial Army with large promises. Charles had the honor of ruling Spain, Germany, Naples, Milan, and the Netherlands at the same time. He had taken Francis prisoner; sacked Rome and took Clement captive; routed the French armies over and over; forced the confederates of Smalkald to obey him as their Emperor, and a few years before his death he put Philip in charge of all his vast dominions and retired to Placenzia to end his days. He had carried his arms successfully to Africa, and once had the honor of leading upwards of a hundred thousand men against the formidable Solyman. Charles did not favour the Reformation though it originated in a part of his great Empire. He had to serve two masters, and he therefore hated the one and loved the other. He joined the Pope, and proclaimed war against the Protestants. But Fortune forsook Charles in his grey-hairs. Maurice of Saxony lowered his reputation, and the man whom this world could scarcely hold retired to close his life in an obscure seat—unknown, and unseen. He observed well the vanity of man's glories, and before any new misfortune could darken his days of prosperity, in peace and quietness subsided the last rays of the glory of Charles. Thus was the end of a man who filled the whole world with awe, and subdued the mightiest rulers that reared their heads in this world.

*Answer 2nd.*—Charles was proud, revengeful, haughty and hard hearted. He had not that touch of nobility in him that so much distinguished Francis and Henry. But in all his measures he adopted them with great consideration and after careful examination; but when once adopted they were executed with matchless rapidity and almost always with success. The victories of his generals did not excite either envy or fear. Though not prone to martial feats, he was never found to shrink to head his army in danger. In his friendship he was always sincere, and possessed those virtues that would draw friends and general trust. But he was often fraudulent. His policy was deep, and seldom conveyed to others. In his desire to possess all, he ran into such errors and committed such disgraceful actions as would lead his contemporary to have a mean opinion of his moral character. Born with talents, they did not develope early, but they were to answer great ends when they were matured. His bearing towards the elector of Saxony, and the landgrave of Hesse was unworthy of Charles, both as an Emperor and as a man. Generosity came too late into his breast, and the idea of revenge too early. Charles gloried in the distress of his rivals, and after his victim got the better of him by drawing public sympathy, to which they would justly appeal. If Charles would behave with Francis as he deserved, and with the elector and the landgrave as their positions required, he would not draw on himself the vengeance of Morice. To recapitulate the whole, and in few words to characterise Charles; we would pronounce him as an able ruler but a bad man. He was liberal in his grants and seldom broke his promise, but fallen greatness he could not honour, nor sympathise with power in distress. He was a hypocrite, but the confidence of his friends on him was great. He was ambitious, proud, haughty when opposed, grave in deliberation, steady in his conception; resolute; and in executing his plans quick.

Henry the VIII. was ambitious; fond of glory; open in his friendship and incapable alike of virtue or hypocrisy; brave, warlike, generous but without moral or any consideration for religion. A protestant and a catholic, a catholic and a protestant by turn, Henry was virtuous

till he was untried. He was unable to bear opposition, and even in the most tyrannical measure that he adopted he was sure to gain his end, conscious of the fear that he had inspired in his subject. He was a sincere friend, and ready to sympathise with valour under difficulties. From an enemy he became such an intimate friend of Francis, that he offered him a large sum as a part of his ransom. He ruled like a tyrant, and slighted virtue because he believed that power could cannonize crime. Luther was a man of bright parts and rigid morals. Born with superior abilities he encreased them by exertion, and his manners were as austere as would become the head of the reformers. He was zealous in the cause of reformation, but he was conscious of the truth of the cause he had adopted, that his attachment bordered on arrogance. He was rather severe in dealing with his rivals. He used the same harsh language against Erasmus and Henry VIII. as he did towards Eccius and Feztel. While fighting for the reformation he could scarcely bear any thing said against it; and never heard any thing said against that he did not return in full. Luther was honest, sincere, brave, unambitious of fame, energetic, but haughty when opposed, wanting in decency, and that gentility for which Erasmus was so famous.

Leo the tenth was ambitious, war like, talented, political, fortunate in his schemes and happy in their execution. It was his policy that when a man was treating with one person there was nothing to hinder him from treating with another. He could disreminiate virtue and talents in any shape, and wherever he found them he received them under his protection. In conducting his business he never entered into detail, he considered only the leading facts and thus he could settle every thing without much difficulty, or without that search which was the characteristic of Clement. Leo was on the other hand much favoured by circumstances. Quick, energetic, vigorous, he had every thing around him that promised success. Around him stood the learned and the wise whose advice his used to every advantage. Leo like all other Pontiffs was far from being faithful and true to one friend or master. He made Rome the seat of learning, and Sciences and Arts flourished under him as every man expected; and though he did not relish the soaring imagination of Michel Angelo, he loved the delicate touches of Raphael.

*Answer 3rd.*—Among those illustrious men who have most influenced the succeeding ages we must mention Luther, Leo, Henry VIII., Solyman and Charles the fifth. Francis lived and died in his own age, but the rest of his contemporaries have more or less influenced succeeding ages.

The Reformation did not end with Luther. To this day it is advancing and spreading itself far and wide. Luther only lighted the flame which burns to our own times, and will do so to the end of record. In Germany Luther himself beheld with joy the progress that Reformation had made, and he was living when he had the satisfaction to learn that Henry VIII. has thrown away the trappings of the Romish Church and had pleaded for Reform. In Spain and even in Italy Reformation made converts in the very life time of Clement VII., and with what pleasure would Luther view the extent which it now occupies, and the encroachments that it has made on the papal authority since his time. Germany has cast off the submission which he offered to the Pope, and of all the vast territories except Italy and a part of France and Spain nothing has remained to the patrimony of St. Peter to boast.

The power which Spain achieved in Italy and which she has yet retained was the work of Leo, if not in full at least in part. It was Leo who drove the French out of Italy and established the Spanish power on the Northern and Southern parts of Italy, and though he intended to make his country independent of the Northern powers he had only changed masters, and Italy up to this day is ruled by foreigners, and Spanish influence had always predominated.

Henry VIII. had influenced succeeding ages by the Reformation which he had commenced and which he had left for his daughter Elizabeth to finish. Ever since the reign of that despot, though now and then opposed by some weak sovereigns, the protestant cause has always influenced public feelings in England. To our own times we feel the contest between the Romish and the Anglican Churches, and we still view the same difference existing between them as before, and still the Anglican Church reigns victorious.

Solyman had established that power in Constantinople which now the sublime Porte with a little reduction enjoys. Solyman had possessed the greatest part of Persia and Austria besides the vast dominions which Sultan Mahomed now governs.

Charles the fifth has influenced succeeding ages not so powerfully as one would expect after reading the conquests he had made. The Netherlands revolted and is now independent of Spain and Germany, and of his conquests in Africa almost all have been swept away. But the German influence in the North-East of Italy established by Charles yet remains undiminished. Milan is governed by an Archduke of the Austrian family and in Italy alone we meet with the same features that were marked by Charles in his life time. Spain and Austria are no longer joined nor the Indies pay tribute to the Emperor of Vienna.

*Answer 4th.*—About this time printing was introduced and the learning of the Greeks spread over Europe. The sciences and arts encouraged by Francis and Leo flourished all over the enlightened Europe, and the genius of Raphael and Angelo was adorning Rome with those *creations* of human genius that have seen no equal. During this period Luthor and Erasmus, Cavendish and Melancthon lectured and delighted the courts of the Christian monarch and the first comedy was written in Italy by the master and favorite of Leo.

Religion was now improving. The Romish Church had lost its influence in England and Germany, and the Scripture being translated both the rich and the poor enjoyed its blessings.

Corruption in morals prevailed among the clergy alone. They enjoyed and abused privileges, while the poor could scarcely cope with their profligacy. In some places the reformers themselves betrayed a dearth of decency, but such instances were rare. On the whole the morals were in a far better state than could be expected at an aera only just commenced breathing the light of civilisation, and beheld only the very first rays of its blessings.

CARAPIET STEPHEN,  
Dacca College.

## History.

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### Morning Paper.

*Answer 1st.*—Royalty in Europe was at this time becoming well nigh absolute. The doctrines of divine right and passive obedience were but feebly contested where they were not openly acknowledged. In France, in Spain, in fact in all the kingdoms of the continent, the turbulence of the barons and the landed aristocracy was extinguished. Freed from the trammels and restraints put upon it in ruder ages, the kingly power was exercising a paramount and undenied influence upon the lives and properties of the subjects. The barons forgetting the sense of their own defeat flocked in large numbers to the courts of their sovereigns, there to grace the triumph and to celebrate the pomp of their victors. The burghers and the lesser gentry were engaged in their own private concerns, and were yet unfit to take any share in the administrative capacity of the government. In fact the progress of property and wealth, of reason and philosophy, all contributed to and celebrated the absolute powers of kings. Royalty in England was no exception to this general movement. Since the accession of the Tudor dynasty, the English throne was successively filled by a number of despots, before whom the aristocracy bowed and the people grew pale. Henry the Eighth, at once master of the Church and state, “wielded at will” his royal sceptre and began the “metamorphosis” of barons into courtiers. Weared and impoverished by their mutual dissensions, above all by the Wars of the Roses, the aristocracy followed in large numbers the calls of their sovereign, and passed their days in pouring forth servile flattery at the foot of the throne. Elizabeth completed the “metamorphosis” begun by her father. The vigour of her foreign policy, the perils of a female monarch, the gracefulness of her manners and the haughty but powerful character of her disposition all contributed to inspire her subjects with awe and veneration, love and respect. James I., connected with the blood of Guise, and with some of the continental monarchs by means of his family reminiscenses, preserved though in a less degree the absolute power of royalty. “The king of England” said he to his parliament “must not be worse than his equals;” and in fact such was the effect of the example set by the monarchs of continental Europe, that the English nation did not attempt to devise any effectual restraints upon the arbitrary administration of James. Nursed in the bosom of absolutism and fed by “the stimulating aliment” it furnished Charles the First inherited from his father, the notion of “jure divino” sovereignty. On his visit to Spain and France, for the completion of his marriage treaty with the Infanta, he became dazzled with the reception offered to him. He saw the servility and sycophancy of the courtiers and barons, the humble submission of the people all gracing the triumph of “monarchy majestic” and returned home full of those notions of all powerful royalty, which eventually brought him to the scaffold. But while on the continent, no restraints were imposed upon the kingly authority, in England a counter revolution was internally going on and imperceptibly “mining away the ground beneath the feet of pure monarchy.” This revolution was in the state of society, and the manners of the English people. For a while, in the sixteenth century the Eng-

lish commoners sought repose. Forsaken by their leaders and impoverished by their mutual dissensions they abandoned all hopes of fighting out the battle of liberty against the encroachments of the crown. But internal peace soon infused new blood into their languid frames; and the greater accumulation of property among them brought forward the necessity of procuring greater securities. The house of commons in England was not an ill-combined coalition of peasants and citizens as in the Continent. It consisted of the most numerous classes of aristocracy persons of property and honourable parentage who recalled to their memories the glory of their ancestors. The sale of the crown lands begun by Henry VIII. and continued by Elizabeth, added greatly to the extension of their property and riches, and they soon endeavoured to put effectual restraints on the rapacity of their monarchs. The reformation a part of which belonged to the people, and was undertaken in the name and ardour of faith, soon inspired them with spirit and hopes to carry on their glorious measures. In the reign of Elizabeth, this movement made itself felt in some degree but under the feeble government of James, and Charles its strong efficacy became apparent and even glaring.

*Answer 2nd.*—Among the chief proceedings of the second Parliament of Charles, the impeachment of Buckingham was the principal. That insolent minister had by his pretensions and weakness rendered himself extremely unpopular, and the absolute dominion he exercised upon Charles led the Commons to impeach him on the authority of “public rumour.” They also forwarded some protests against the arbitrary measures adopted by Charles, for raising money under the name of loans and imprisoning those who refused to pay them.

*Answer 3rd.*—The leading members of the House of Commons in the third Parliament of Charles were Pym, Sir John Elliot, Sir Thomas Wentworth, afterwards the grand apostate to the cause of public liberty, Sir Robert Phillips, Mr. Glenville, and Sir Edward Coke. These were the glorious champions of liberty, who first began the task of attacking, storming and dismantling the fortresses of despotism, and of imposing upon Charles more efficacious and powerful restraints than the laws had hitherto devised. The Petition of Rights was a bill prepared by the House of Commons. After recapitulating the ancient rights and priviledges of the people and the violations committed up to the present time, it complained of the four principal points of national grievance; (1) Illegal taxation; (2) Arbitrary commitment of free citizens and the denial of the rights of the *Habeous Corpus* act. (3) Billeting of soldiers without their free consent. And (4) Trial by martial law, which although necessary in some measure for the preservation of discipline in the army, was yet unwarranted by the constitution of the country. All arbitrary imposts without the free consent of the Commons, whether in the shape of forced loans, tonnage and poundage, were declared illegal, and the petition was forwarded to the king for sanction.

*Answer 4th.*—Among the advisers of Charles after the dissolution of his third Parliament, the most conspicuous were Laud, Strafford, Noy and Finch. The first who was the chief primate of the kingdom, proved himself preminently the “evil genius” of this reign. Far opposed to the healing counsels of Burleigh and Bacon, he irritated every difference on the bosom of the church; and subjected those who failed to subscribe to his doctrine of the divine origin of kings and Bishops, to the most cruel and unwarrantable persecutions ever done to humanity. The odious courts

of Star Chamber and High Commission furnished him with the means of wreaking his vengeance on those who differed from his opinions in the least possible degree. Sometimes approximating to Popery sometimes receding from it, persecuting the puritans and non conformists, upholding with the most odious and culpable measures the power of the church and next to it that of the king, he applied every nerve to establish the sole dominion of Episcopacy, a church he eventually led to ruin. Under the pretended mask of Arminianism he endeavoured to reestablish church authority and priesthood, to cement its alliance with prerogative and thus to render the king absolute. Even his prudent and warrantable measures, for checking all abuses in the management of the king's affairs and for removing all unnecessary restraints from commerce, excited the hatred of every one he came in contact with. But Wentworth was a man of greater capacity and judgement and therefore more formidable to the cause of liberty.

After exercising for sometime the most arbitrary influence as the President of the Council of North, he left that sphere of action for a more extensive one as lord lieutenant of Ireland. "The Richelieu of that Island" he made it happy under oppression and tyranny. He checked all subordinate tyranny, but made his strong hand uniformly felt every where. The plan of government which he in concert with Laud wished to establish in England was called by the name of "Thorough." He adopted the most energetic measures; his words were often violent; spared no evil and error in the management of the king's affairs; tried to destroy the authority of the lawyers and to render the "finger of the king" as he himself said, "heavier than the loins" of the state. He disagreed with Charles in considering that parliament were to be entirely dispensed with, but considered them merely as the instruments of royal authority. Now we come to Noy, "a man of venal diligence and prostituted learning" who shaking off the dust from the musty records in the town, advised the king to supply the wants of his impoverished exchequer by issuing writs for ship money, the greatest crime of Charles' reign. Finch who succeeded him made an improvement upon the writs and directed them to be sent to inland counties, as well as to the sea port towns and corporations. Thus they all contributed to bring forward a tyranny, the most frivolous and at the same time the most unjust which England has ever suffered.

*Answer 5th.*—These tyrannical measures at once excited general alarm. The aristocracy was seized with the utmost consternation at the progress of the church. They saw that a poor bishop but yesterday taken from the many was about to supersede them in pomp and power. They found the rights and privileges of their own class at complete jeopardy from the encroachments of the Anglican bishops and the appointment of bishop Juxon to the staff of the lord treasurer, at once filled them with terror and consternation. Further from court, men of learning and of the world, met together in taverns and assemblies, discussed freely on matters of state and religion, sought after truth and justice and sent forth their invectives against the tyranny which attempted to bow down "Christian conciences under a fallacious unity." "Selden poured out the treasures of his erudition; Chillingworth discoursed upon his doubts in matters of faith" and Falkland then but an unrough stripling threw open his house and gardens to all the literary men of England. In the towns and in the country, the gentry complained more of political rather

than of ecclesiastical tyranny. No years within the memory of any one living had witnessed so many violations of property as now. They complained of the violations offered to their persons and property and loudly imprecated the proceedings which brought upon them so much mischief. Farther from these towns the lesser gentry complained bitterly of the tyranny of the bishops. The sturdy puritan, austere in manners and severe in principles took complete alarm at the downward progress of the English church to Catholicism, and the encouragement avowedly given to pastimes and morris-dances, even on the day of his sabath—pastimes which to his cynical temper were scarcely tolerable on any other day less sacred in the week. In fact so general was the disaffection that people began to fly from their country and began their settlement in New England. So great was the number of these emigrations that almost twelve millions of money were carried away from the mother country. It is a remarkable fact that some of the most illustrious and most vigorous champions of public liberty were flying from a tyranny from which they found no protection at home. “The wise and cautious lord Lay, the sagacious Brook, Sir Arthur Haselreg, Hampden ashamed of a country for whose rights he had fought alone, Cromwell panting with energies which he could neither check nor explain, and whose unconquerable fire was wrapt in smoke to every eye but that of his kinsman Hampden” were already embarked for emigration when Laud for “his own and his masters curse” procured a royal order against their departure.

*Answer 6th.*—Charles had written to Strafford to leave Ireland and come to England where he wished to take from him certain instructions with regard to the government of his kingdom. On his arrival and on his first entrance into the House of Lords he found himself impeached for high treason by the House of Commons. Pym and Hampden the sagacious leaders of the popular party drew up an accusation against him, for attempting to subvert the fundamental laws of the kingdom, for billeting soldiers in Ireland without their consent, for exacting money from the Irish people without the consent of their representatives, for advising the king to adopt the most unjustifiable measures against public liberty, for abusing his authority as President of the North, and for other charges of minor importance. But finding the dibatory proceedings of the lords in the prosecution of this great delinquent, Haselreg “a coarse minded man” proposed the famous bill of Attainder which in later ages has excited so much discussion. At length the prosecution went on with greater vigour. The great minister defended himself with the most extraordinary ability against thirteen lawyers by profession. He at first complained of the malice of his enemies; the commoners took fire and he was obliged to beg pardon. The hall was filled with spectators of the very highest rank; the dark but commanding features of the culprit struck every one with awe. The king accompanied by his wife sat in a closed gallery to behold patiently a spectacle of so great importance. The judges proceeded with vigour and the earl of Stafford was at length convicted although St. John and Manyard, with all their erudition and eloquence could not bring the charges brought against him within the legal definition of high treason. Now the consent of the king was required. Charles strongly objected; he made use of every means to save the life of his ablest minister, he told the commons that he would not sacrifice him to their distrust and malice, but the entreaties of his wife and the perseverance of the Commons at length procured from him

an order which all Europe unanimously condemned. Thus fell Strafford one of the most conspicuous characters of these times. "To rise, to act and to govern was the necessity of his nature." Possessed from nature of qualities, at once energetic and vigorous, he in the beginning of his public career entered the banners of liberty; but when he once forsook them he became the most unconquerable advocate of absolute power. His political capacity has received the highest complement in the fact that such men as Pym, Hampden and St. John considered his existence incompatible with the liberty of his country. "When he once ceased" says the illustrious continuator of Sir James Machintosh's history of England, "to be a demagogue he became a satrap." But it is evident that in forsaking the cause of liberty he was not obliged to sacrifice his principles. All his fame as a patriot rests upon two facts first his refusal to pay the tax imposed upon him by Charles in one of the earlier years of his reign and second his exertions to procure the acknowledgement of the Bill of Rights. But when we consider, that in one of his letters to Laud he lamented the lenity shewn to Mr. Hampden on his refusal to pay the impost of ship money, the most flagitious violation of that famous bill, that in his government of Ireland he adopted the most unwarrantable measures of tyranny, that the treatment he gave to Lord Loftus and Mountnoris were acts of the most flagrant iniquity, and that measures he advised Charles to adopt were the most arbitrary than any in the whole range of English history, we cannot satisfy our minds that his opposition against royalty in the first part of his life proceeded from true principles of patriotism; nor can we condemn the bill of attainder as a "crime." The leaders of the public cause thought the fabric of liberty as insecure and jeopardized whilst he breathed whether in exile or in chains, and hence proceeded that "capital ostracism which saved the republic" without interfering with the regular course of jurisprudence. Great he certainly was, for we cannot deny the epithet to "so much comprehension of mind, such vigour of intellect" and such profoundness of understanding. Eloquent, brave, and daring he was one of those men designed by nature to carry forth revolutions. But in taking leave of this great man we must not omit to mention that he was by no means deficient in natural affection. His able and eloquent defence, his tender allusion to the "departed saint" of his wife, are extremely pathetic and affecting, and it can be fairly said that the extreme severity of his condemnation and the magnanimity it enabled him to display at the moment of his departure from this world, have contributed greatly to redeem his forfeit fame.

DWARKANAUTH MITTER, *Hooghly College,*  
*First Class.*

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*Afternoon Paper.*

*Answer 1st.*—I will follow Hallam's arrangement in this question. He begins with the triennial bill which he calls the most important measure of the long parliament. This bill provided that in no case the space between the dissolution of one parliament and the recalling of another, should exceed three years. That if the king did not order writs to be issued, the keeper of the great seal must issue them of his own accord on penalty of high treason. It also provided that if the lord keeper did not issue writs, twelve peers might assemble in Westminster and issue the

writs. Should they fail to do so, the sheriffs might go on with the work of election of themselves and in default of their doing so, the electors might themselves proceed to elect their representatives. Of the other beneficial measures the most wholesome was the abolition of the courts of starchamber, high commission, court of the president of the North, and the minor courts whose existence was not sanctioned by the legislation. They declared shipmoney illegal and reversed the judgment of the exchequer chamber against Mr. Hampden. They declared that tonnage and poundage could never be levied without the consent of parliament. They moreover declared that the king can not except in cases of foreign invasion, impress men for the army. They however enacted that the present parliament should not dissolved but by its own consent. This bill they presented at the same time with the attainder of Strafford for the sanction of the king. These last viz. the attainder of Strafford and the bill for their own dissolution are strongly censured by Mr. Smythe. They had formerly enacted that no parliament could be dissolved before it had sat fifty days, and now they provided for their sitting as long as they themselves pleased.

Symptoms of dissension first manifested themselves strongly enough to be noticed, on the first day that parliament opened after the recess during the King's absence in Scotland, and according to Mr. Macaulay, it was on this occasion that parties in parliament first appeared in the form in which they at present exist. This was the occasion, on which the celebrated remonstrance was discussed of. On one side was Pym, Holles, Hampden, Cromwell, Haselrigg, Strode, and all those who were of the violent party and wished to reduce the prerogative to a nonentity. On the other side was Hyde, Falkland, Palmer, Colepepper, &c. who are henceforward to be denominated the constitutional party.

*Answer 2nd.*—The remonstrance was an enumeration of all the grievances which had existed since the accession of Charles to the throne and most or all of which had already been redressed, so that the remonstrance can now serve no other purpose than to rouse the passions of the people against the government of Charles and keep up that distrust which was visibly subsiding. Nor was it expected to serve any other. Such being the case, those only favoured the remonstrance, who were interested in perpetuating the animosity between the throne and the people. The character of Laud has been drawn in colours extremely dark. Even the excuse of bigotry to palliate his cruelties was denied to him. I will begin with delineating his merits. He was a generous patron of letters and it can be recorded to his honor that with all the bigotry attributed to him, he had patronized Hale, after being acquainted with his religious principles in a conference which he had with him. He was never charged even by his bitterest enemies with a thirst for lucre and in all money matters, his integrity was never doubted. If he was an implacable enemy, he was also a faithful and jealous friend. In every case in which the interests of the church or the king were not involved, he always acted for the good of the country. This I am aware would be deemed by many as a negative virtue. His vices or defects were manifold, he was a willing slave and agent of tyranny. He was either a deep bigot or a villainous hypocrite. He had the vanity to make his own opinions or caprices, the religious canons of his country. He was extremely cruel or had no natural sensibility. He drove Workman mad by his intolerable persecution. To him and to Strafford, the abominable

cruelties of the Star Chamber were excesses of lenity. He rose to power by the assistance of Williams, yet he was the agent who brought him to disgrace. He was the fawning sycophant of Buckingham, the projector and supporter of the *Thorough* system. He it was who brought about the rebellion of the Scots, by advising the king to establish prelacy in Scotland; in short he was one of those evil advisers through whom Charles was brought to the Scaffold. There is no other alternative for him but to be called either a fool or villain and therefore those who favour him or his cause, tell us, if not plainly, at least by implication, that he was weak-brained and weak hearted man.

*Answer 3rd.*—The self denying ordinance was a measure brought into the parliament with the view of depriving the Presbyterians of all power whether in the field or cabinet, by making it a law that no member of the parliament should be capable of holding any office whether military or civil during the continuance of the civil war. This measure first proposed by Zouch Tate an obscure fanatic was a contrivance of Cromwell and his party (the independents) to take away all power from the hands of their rivals who had retained it with a firm grasp from the beginning of the civil war.

Charles was playing a double game with regard to Ireland. Whilst he was protesting in England, his abhorrence of the Irish Catholics, he was secretly negotiating a treaty with them, first through the agency of the Earl of Antrim and afterwards through that of the Earl of Glamorgan the son of the Marquis of Worcester, the richest Catholic Nobleman in England. Some of these conditions were known to Ormond his Lord Lieutenant in Ireland and some were kept secret between Glamorgan and him. He promised the Irish, toleration of their Religion and the abrogation of the penal laws; if they would assist him with ten thousand men and money to recover the absolute authority in England. These he promised secretly and they were to be kept secret by the Irish also till he was in a position to fulfil them. Thus he was at liberty to disown the Irish whenever he liked, and thus it happened; when the treaty became public, Ormond immediately arrested Glamorgan and Charles disowned him but he was soon set at liberty to pursue his scheme. Thus Charles was playing a deep game. He was either false to England or to Ireland. Mr. Hallam decides that the latter was the case; but for all that his guilt was none the less. He had gone so far as to have concluded a cessation of arms on one occasion and it was notoriously known that he had many Irish Catholics in his ranks.

*Answer 4th.*—The tenor of the proposals offered by parliament from the breaking out of the civil war, was always the same, they only differed in some minor particulars. He must give up the command of the sea and land forces (on this occasion it was proposed) for twenty years; must relinquish prelacy and consent to the establishment of presbyterianism; must put himself under the direction of parliament in selecting his ministers and councillors, must marry and educate his children according to the advice of parliament. Some of these are not mentioned by Guizot, and we are left to infer them from Mr. Hallam who says that many of these conditions were the same as those offered to him at Newmarket or York, of which he gives a distinct account. Charles was also called upon to annul all the patents of peerage which were granted after the breaking out of the civil war, and to recall all his proclamations against the parliament.

*Answer 5th.*—In revolutionary times, when men refuse to follow in the beaten path of their forefathers and are resolved to track out, one for

themselves, men like the Independents must by the necessity of the case, gain the ascendant. When every thing is left to be decided by human reason, they must tolerate each other's opinions. Hence the Independents maintained that every congregation met for the adoring of God was in itself a church and every body was left at liberty, to preach, pray and expound the Scriptures in the best way he liked. It is no wonder therefore that when men had once thrown off the shackles of restraint, they would become wild Independents. When men once forsake the beaten way they diverge in different directions. And thus the sectaries had different denominations and principles. They were either levellers, anabaptists, fifth monarchy men, &c. and all the fanatics ranged themselves under one or other of these classes. That they did not sooner take possession of power is to be accounted for, only, by the prevalence of presbyterianism; but when they had once succeeded in carrying the selfdenying ordinance and the reorganization of the army, which they did by a fair pretext, they centred all real power in their own hands, and to keep it was not difficult, since the army was altogether, of *independent* principles. Cromwell told the house that they incurred the jealousy of the nation by keeping all power into their own hands and induced them to forsake it. Fairfax was made general whom he could sway any way he liked and the army was purged as the parliament was sometime after, of every presbyterian element. Having got the army in their favour, they were masters of the nation and soon showed parliament that they were no longer its servants.

*Answer 6th.*—The instrument of government was the great charter of Cromwell's government, it enacted that the legislative power should be lodged in one man to be called the Protector and the representatives of the people in parliament assembled; that all writs should be issued in the Protector's name. The executive power was lodged in the same hands, with this proviso that in the absence of parliament, all affairs should be transacted by the Protector and the majority of the Council. It gave no negative voice however to the Protector over the resolutions of parliament. The Protector was also to be the arbitrator of peace or war.

The parliament was to consist of 400 four hundred members returned according the population of the counties, and some of the great cities which had hitherto no franchise were allowed to return members. The small boroughs were disfranchised. It was on this model that the representation was reformed in the present (nineteenth) century.

It also limited the number of the soldiers to twenty thousand cavalry and ten thousand infantry.

The name of the Instrument was changed into Petition and Advice by the parliament of 1657, which also made so many other essential changes in it that Mr. Hallam decides that the short interval which elapsed between the passing of the petition and advice and Cromwell's death is to be ranked under monarchy and not republic although the title of the head of the government was still Protector and not king. The whole petition and advice was framed with reference to that article of it which conferred the name of king to Cromwell. Although Cromwell was forced to refuse the title yet no alteration was made in the rest of the document. The power of the Protector was also very much increased.

MOHENDRO LAUL SHOME, *Hindu College,*  
*First College Class, Second Year.*

## Literature Proper.

### Morning Paper.

*Answer to the First Question.*—This is the soliloquy which Lady Macbeth utters, when she had first perused the letter of Macbeth, in which he speaks of his interview with the witches, of their prophecies to him and of the partial accomplishment of these, by his being promoted to the thaneship of Cawder, and she bursts out, in an enthusiastic exclamation, expressive of her hopes and her resolution. She says,

Well, thou art already become thane of Glamis and Cawder; and I am fully resolved that thou shall be, every thing, that thou art promised or foretold, by the witches, (i. e.) that thou shalt be king in addition to what thou already art. Yet I do fear, that the goodness of thy nature, will prove an obstacle to the attainment of our wishes (and therefore she is afraid of it.) It has too much of that milk like quality (compassion) which belongs to human nature, to take hold of the nearest (easiest) way, to arrive at the accomplishment of thy wishes. Thou hast the ambition to become great, but thou art without that wickedness which ought to be the concomitant of ambition. Even those things which thou desirest most ardently, thou wouldest not attempt to gain, by any unhallowed or wicked means. Although you may desire that which does not belong to you, yet thou wouldest not make use of any foul means, to obtain it, it means that although your passive wishes may extend to things which thou hast no right to claim, yet thou wouldest not, take any active hand, to snatch that which does not belong to you. Thou art desirous of having that (the crown) which tells thee thus must thou do, &c. The meaning of this is, that, thou art desirous of having the crown, but it is as plain as if the crown itself spoke, that thou must act, in this manner (murder the king) (i. e.) it is plain, in what manner thou must act, if thou wilt come to the throne. And this act thou art afraid of doing thyself, but thou art yet not desirous that it should not be done. Haste thee hither, that by my courageous words, I may infuse my own spirit, into your heart (through your ears) and beat away, by my valourous words, all the obstacles that your timidity presents in the way, of your possessing the crown, which fate and the assistances of supernatural beings, are resolved to place on your head, as it plainly appears by their prophecy.

MOHENDRO LAUL SHOME,

*First Class, Hindu College.*

*Answer to the Second Question.*—In the mind of Lady Macbeth ambition is represented as the ruling motive, an intense—overmastering passion, which is gratified at the expense of every just and generous principle, and every feminine feeling. In the pursuit of her object she is cruel, treacherous and daring. She is at once inspired with masculine courage; and disregards every thing. Self interest and family aggrandisement are the marked features of her character. She is doubly, trebly dyed in guilt and blood, for the murder she commits, is rendered more frightful by ingratitude and disloyalty, and by the violation of all the

most sacred claims of kindred and hospitality. When her husband's more kindly nature shrinks from the perpetration of the deed of horror, she like an evil genius, whispers him on to his damnation. The full measure of her guilt is never extenuated; she is a *great bad* woman. Macbeth, on the contrary, is sometimes determined to do the deed of horror; at other times, his heart misgives him. He is sometimes determined "to bend each corporal agent to the terrible feat"; at other times he says, "we will proceed no further in this business." He is like a drunken man reeling to and fro; he is urged on by his fate, like a vessel drifting in a storm. But Lady Macbeth is ever pre-eminent in her guilt. Her inexorable determination of her purpose, her superhuman strength of nerve, render her as fearful as her deeds are hateful. Yet for all this, she is not a mere monster of depravity, with whom we have nothing in common, nor a destroying meteor, whose path we watch in ignorant fright and amaze. She is a terrible impersonation of all evil passions, and mighty powers; and the woman ever remains a woman to the last, still linked with her sex and humanity.

We must bear in mind, that the thought of murder is not instigated by her to her husband; it springs within *his* mind. Yet it may be said that on the reception of the letter the thought spontaneously rises in *his* mind. But then the guilt is thus more equally divided between her and him; than we should suppose "the noble nature of Macbeth" goaded on to crimes, solely or chiefly by her instigation. It is true, she afterwards appears the more active agent of the two; but it is less through her preminence in wickedness, than through her superiority of intellect. The eloquence, the fierce fervid eloquence, with which she bears down all opposition, the sophistry which she employs in conquering all to the scruples of Macbeth; the sarcastic manner in which she lets fall the word *coward*, a word which no man can bear from another, still less from a woman, and least of all from a woman he loves, make us shrink before the commanding intellect of the woman. She is cruel only in the attainment of her object; and that done, she stops there. But Macbeth is goaded on from crime to crime; and he says,

"I am in blood steep'd in so far that should I wade no more.  
Returning would be as tedious as going over."

One crime prepares for another; the death of Duncan, makes him meditate, and afterwards commit the death of Banquo, and that also prepares him for the butchering of Macduff's family. On the contrary Lady Macbeth, being satisfied with attaining her object, never commits any crime afterwards. It is evident then that in a mind constituted like that of Lady Macbeth, which is not hardened by the habit of crime, conscience must wake sometime or other. By a judgment the most sublime ever imagined, yet the most unforced, natural and inevitable, the sleep of her who murdered sleep is no longer repose; it is a condensation of those resistless terrors, which the prostrate heart, and the powerless will cannot baffle and repel. We do not exult over the ruin, but rather sigh over it; and we dismiss the helpless, conscience-stricken, murdress with a heaviness of heart, which Lady Macbeth in her waking state, could never have excited in us.

RADHA GOBIND DOSS,  
Second College Class, Hindu College.

*Answer to the Second Question.*—The authoress of the characteristics of women, has drawn, the character of Lady Macbeth in very favourable colours and denies that Lady Macbeth was more cruel and ferocious than her husband; but Lady Macbeth being a woman who having lived in seclusion and irritated her powers of imagination by constant indulgence, is enthusiastically bent on realising her dreams. This is so far true that we find that her courage supports her only, so long as is necessary to the accomplishment of her designs and a little longer, and then she sinks, beneath the weight of her guilty conscience very soon after her dreams were realized. But she retains enough of energy and self-control, to refrain from giving utterance to her griefs, whilst she is awake. Others have described her, as a fiend in human shape, the very incarnation of the evil one, as a woman in whom all the softer feelings were swallowed up in one ruling passion, one who far from feeling any emotion of tenderness when her husband returns from the wars; endeavours to plunge him into an abyss of guilt. Macbeth in whom the softer feelings were not yet extinct salutes her by the name of "my dearest love," but she has no such epithets at her command and she salutes him by "Great Glamis worthy Cawdor, greater than both, by the all-hail hereafter." This is the opinion of Mr. Coleridge. For my own part, I do not believe that she was so fiendish as Mr. Coleridge says nor so good as Mrs. Jamieson, that all the softer feelings were not extinct in her heart, but only suspended for a temporary period when her imagination was heated, by the perusal of Macbeth's letter. Macbeth was like her ambitious of the regal chair, but was not so lost to all the nobler feelings of the human heart, to adopt her proposal (of murdering his benefactor,) without a mental struggle. But he was naturally a courageous man (whatever might be said in disparagement of his courage in comparison to Richard) and he does not sink after the deed is done. He dies like a brave man and shows his inherent valour even when all hope is lost, "Lay on Macduff and damned be he who first cries enough." With Lady Macbeth we have *no sympathy*, she died a death which she deserved. But we look upon Macbeth as a victim and pity him, even in his guilt.

MOHENDRO LAUL SHOME,

*First Class, Hindu College.*

*Answer to the Third Question.*—If the murder of the king were immediately succeeded by my exaltation to royalty and if the train of the attendant dangers were at once intercepted, then it would have been desirable to put it speedily into execution; if by assassinating Duncan, I could stop the course of evils which should follow the perpetration of the deed and at once secure to myself the possession of the crown; if in this life, this narrow bank on the ocean of eternity, this shallow ford in the great sea of time, I could preserve myself from every thing dangerous to my happiness and security, then I would have been ready to set at nought the punishments of a future life and would have willingly accepted the earliest opportunity of accomplishing my purpose. But in these cases we are subjected to the punishment of earthly tribunals; that by murdering others we but teach others to murder ourself. This impartial justice, that which says, "blood will have blood" serves to present to our own lips the same poisoned cup which we prepare for

others; *i. e.* the very schemes which we plan for the destruction of others are often made use of, to hasten our own ruin, for such is the impartial law of nature.

DWARKA NATH MITRE,

*First Class, Hooghly College.*

*Answer to the Fourth Question.*—When Macbeth has resolved to murder Duncan, his evil thoughts have possessed him entirely. He dwells upon the murder as he proceeds towards the room of Duncan, but sees an “air drawn dagger” and starts;

“ Is this a dagger, which I see before me.”

Shakspere here beautifully depicts the mind of a murderer. He alone sees the apparition and he alone is subject to fear. In all of his plays, the great dramatist makes the “oppressed brain” to perceive devils and phantoms, thus showing that such things have no existence in nature but they live in the minds of those that believe on them and in those minds that are under the influence of passion. If Shakspere would make the whole company start by the sight of Banquo’s ghost, we would believe that really the apparition of the murdered general entered the hall. But the poet does not wish to tutor us to a belief on devils, but on the contrary he lectures us to laugh at them, and that at the best they are

“ False creations proceeding from the heat oppressed brain.”

In “Hamlet,” the prince starts and beholds a “king of shred and patches.” But the queen though startled by a sort of sympathy on looking on Hamlet, does not see the ghost and yet sees “all that is there.” In “Julius Ceasar,” the sceptical Brutus sits pondering over his books till a late hour, and is at once roused by the sight of Ceasar’s ghost entering his room and promising him to meet him again at Philippi.\* But neither Casca, nor Cassius nor any one of the murderers see the ghost, and the reason why Brutus alone received the “supernatural visitation” was that his mind was troubled by the murder of his kinsman and patron and that he continually dwelt on the event

“ Which thus informed his sight.”

Modern science has substantiated what Shakspere marked only in hints. We are aware that the difference between “perception” and “conception” is, that by experience the former carries a strong belief of the reality or the existence of the object perceived, while the latter carries also a belief of the existence of its objects, but this belief is always overturned by the sight of objects around us. But if a man could make his conceptions stand without being obstructed from outward circumstances he would believe as much on the existence of the objects of his conception as he does on the existence of the objects of perception. But this is the case with men under the power of imagination and the passions. He gives himself up whole and entire to his thoughts and therefore the objects they conceive appear as realities. This reasoning explains the mystery of the dream of Junat which his wife the Duchess d’Abrasutes has mentioned, and which has excited so many curious remarks. In Richard the Third we observe the same phenomena.

\* Plutarch believes that Brutus really saw Ceasar’s ghost.

Macbeth is now under the control of his imagination, and to him nothing seems real but what is false. His mind is disturbed. He can no longer speak of the "single state of man." He is in the same predicament, in which Brutus was just before he was going to enter into the conspiracy. The "steady Rome" was falling into the snare which was laid for him, and the trials which he made to reel back is just what Macbeth did in his soliloquies. There is another scene in the play of "Julius Caesar" which can be compared to the scene before us. I allude to the time when Brutus sees the ghost, calls Lucius and then consoles his half-crazed mind that what he saw was only an apparition.

In "Hamlet" the Queen says to the Prince that what he saw was nothing real but

"The coinage of his brain."

CARRAPIET J. STEPHEN,

*Second Class, Dacca College.*

*Answer to the Fourth Question.*—The theory of apparitions which Shakespeare illustrates in this play, Hamlet, Julius Caesar, &c., is nothing more than that the objects of our imagination, when they are interesting, and engross our mind completely, are mistaken for realities, as if they were the perceptions of them. We are convinced of the independent existence of the material world, and of all its objects, only by experience, so that when we perceive an object, we judge from other circumstances, founded on our previous knowledge that the object has a real existence. In the same manner, when anything is presented in our imagination, we believe its real existence as long as our mind is wholly occupied with it, but when we remember all other circumstances, connected with it, we are convinced of the non-existence of the object. This is Shakespeare's theory; and it has been confirmed by the modern science of mental philosophy.

Macbeth while he utters these words is intent upon the murder of the king. All other things are excluded from his mind, and the "thought of the bloody business" wholly engrosses it; so that he sees dagger in his mind; an instrument which is associated with men's minds with deeds of blood; and as there is nothing to convince him of his error, he believes for sometime its real existence. It was thus that Mrs. Siddon's mistook the objects of her imagination for realities; it is this circumstance which made her run to her husband's chamber in the midnight, only on seeing an imagined spectre.

When Hamlet asks her, "do you see nothing there," the queen answers to this effect "I see nothing; but every thing that is," and she afterward says very similar to this passage.

RADHAGOBIND Doss,  
*Hindu College, Second College Class.*

*Answer to the Fifth Question.*—This fear is twofold. In the first place Macbeth thought that if his guilt was discovered, there was no body in the kingdom except Banquo who was capable of revenging the murder of Duncan. For the same reason he feared Macduff, as appears from his

saying to the apparition who told him to beware of Macduff "thou hast harped my fears aright." In the second place, he feared, lest the descendants of Banquo should "wrench from his hands with an unlenial hand, the sceptre of state," according to the prophecy of the witches. It is remarked by Coleridge that in all the soliloquys of Macbeth, he endeavours to hide under the cover of prudential reasoning, the dictates of his conscience. Here Macbeth, endeavours to hide his malice towards Banquo and to lull his conscience by showing that the death of Banquo was necessary to his safety. The poet moreover takes this opportunity to draw the character of Banquo.

I do not recollect the exact words in *Antony and Cleopatra*.

This Philosopher is Socrates who as Rollin says, used always to speak of his Daemon or Genius.

MOHENDRO LAUL SHOME,

*First Class, Hindu College.*

*Answer to the Sixth Question.*—Macbeth's mind is at this crisis full of mortification and disappointment. He finds that the very object for which he committed the murder of Duncan, the peace and happiness of his mind has not been accomplished. He feels the sceptre slipping from his hand; he sees in his imagination Banquo's issue supplanting him and his children from the throne, and feels every thing belonging to himself at danger and insecurity. In the agony of his heart he wishes to be rather numbered with the dead than to live in constant disquietude and agitation of mind, he envies the fate of Duncan, sleeping soundly in his grave unmolested by all the cares and anxieties of this life; while he himself was a perpetual prey to fears of every description. Frantic in despair, he borrows resolution and at once dares to hazard this as well as his future life, to suffer the worst consequences rather than live agitated by perpetual consternations; but his resolution falls soon after and he lies under the excruciating torture of restless agony.

DWARKA NATH MITTRE,

*First Class, Hooghly College.*

*Answer to the Seventh Question.*—Hecate is used for an infernal agent who delights in "natures mischief." The darkness of the night which hides from the knowledge of men, the actions committed by mankind is generally made use of by murderers and criminal persons for the perpetration of their horrible deeds. The beetle mounted on its shards or scaly wings, is considered as a sign of the approach of night. The "deed of dreadful note" alludes to the intended murder of Banquo. The word chuck is a term of affection and endearment. "Seeling" means blinding. This figure is taken from "falconey." The "tender eye of pitiful day" alludes to the effect produced by horrible and unnatural deeds when discovered by daylight. The "bloody and invisible hand" alludes to the invisible hand of the murderer committing his deeds in the night. The bond alludes to the lease according to which the lives of mortals are supposed to be held. To cancel and "to tear" is to murder.

Hecate is represented as black for the criminal designs she delights in. She is usually termed by poets "triple" Hecate certainly alluding to the different forms she assumed when she wished to undertake particular purposes. When receiving the offerings of the witches she is described to wear a pale appearance but while presiding over "murderous thoughts" and infernal purposes she is described with poetical consistence to be invested with blackness, the usual sign by which crime is denoted.

DWARKA NATH MITTRE,

*First Class, Hooghly College.*

*Answer to the Eighth Question.*—Shakspere wrote "Macbeth" about the time of James the first, when a belief in witchcraft was almost universal. Even Royalty did not slumber in this excitement and James wrote a work in defence of the witches.\* Shakspere's witches are superior to those of Middleton and those of his contemporaries. His witches combine in them both the qualities of the fates and the furies. Mr. Buchanan makes us believe that the witches of Macbeth were in form more terrible than common women, and Johnson calls them the personification of the malignant parts of our nature. They have the power of sending our souls to hell while the common witches can only torment the body. Here then Shakspere has made his weird sisters by compounding the vices of the evil genius of the Grecian mythology and the witches of his own times. The witches of Macbeth says Dr. Johnson are the creations of his own imagination. They ruled man by directing him to evil deeds, and when the deeds were committed they returned as judges to punish. But Shakspere, though he has created beings adapted to his purpose, has been confounding the superstitions of different times.

CARRAPIET J. STEPHEN,

*Second Class, Dacca College.*

*Answer to the Ninth Question.*—The first great moral caution conveyed to us in this tragedy is the danger of unprincipled ambition. When we have once allowed ambitious thoughts to enter our minds, when we once begin to think that something in the possession of others will be of infinite service to our happiness we are apt to hazard every thing and to "give our eternal jewel to the common enemy of man" by attempting to deprive them of the thing wish for. But the master mind of Shakespeare has described the success of unprincipled ambition but has not failed to describe its downfall too. The fate of Macbeth and his wife will for ever serve as the most efficacious lesson that has been taught by any one for warning mankind from vice and corruption. We shudder at the thought of the mental agony suffered by Macbeth and his consort and we instantly endeavour to tear out from our hearts the roots of a passion which leads to such dreadful consequences.

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\* Lingard makes a humourous comment on this point in his history.

Another lesson taught to us is that hasty credulity is always to be avoided. Macbeth by rendering himself an easy dupe to the machinations of the witches was led to perpetrate deeds which hastened his downfall and which marred all hopes of his happiness in future life.

“Security” says our author is mortals chiefest enemy! To this precept we ought always pay particular attention. Confident of our own security we are very apt to fall into a carelessness which eventually leads to our ruin.

But there is another moral lesson which this great poet has preached to mankind. The first initiation of guilt must be always guarded against. Macbeth by murdering Duncan, and by first entering into the path of vice found that he was obliged to support himself by other crimes.

“He had slept so far in blood that to return was as tedious as to go o'er.”

The murder of the king's chamberlains, that of Banquo, that of the wife and children of Macduff in fact a number of the most atrocious and cruel deeds were committed by him, only to give stability to a throne gained by one unfair means.

DWARKA NATH MITTRE,

*First Class, Hooghly College.*

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*Answer to the Tenth Question.—First “Where the Norwegian baners &c.”*

This passage is quoted by numerous poets. We have it in Shakespeare himself in history

“With colours idly spread.”

in Gray

“Though fanned by conquest's crimson wing,  
They mock the air with idle state.”

in Byron's battle of Albuerra

“Three gaudy standards flout the pale blue sky.”

II. In Milton's Paradise lost

“Their stately growth tho' bare  
Stands on the blasted heath.”

MOHENDRO LAUL SHOME, *Hindu College,*

*First College Class, Second Years' Student,*

*Senior Scholar of the First Grade.*

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## JOHNSON.

*Answer to the Eleventh Question.*—Johnson in treating of pastoral poetry censures Virgil for intruding the gods whilst he allows his hero to talk of things that are known only to the later times. “By the introducing of gods” says Johnson, “we are given to understand, that the events are to be referred to the golden age, yet the poet allows himself to talk of things that can only be known to later times and even mentions Gallus, the poet’s contemporary.” In the *Comus* every thing is referred to the golden age and therefore mythological characters may safely be introduced according to the principles laid down by Johnson. The same principle does not apply to *Lycidas*.

*Answer to the Twelfth Question.*—Johnson was generally a capricious critic. In judging any thing by the criterion of an established rule, he always guided himself by the letter of the law and not its spirit, for this reason, Macaulay, tells us that Johnson critised works of taste, in the same manner as a lawyer expounds the principles of civil and criminal law. The explanation of the terms nature, truth and poetry, will be a sufficient comment upon Johnson’s criticism.

Bacon in his essay on truth, has shown that a poetical image although it has no prototype actually existing in nature, is something very different from “vinum daemonum” as poetry is styled by one of the fathers. The poet is not bound like the historian or geographer, to represent nothing but what actually exists in nature; he may combine, the ideas presented to him by nature, very variously. He may even go a little beyond that, he may introduce us to the witches of Shakespeare, the Fairy Queen of Spencer and provided he makes his persons act according to their assumed character, and never makes one part of his story forget another, he may introduce any combination. It has been justly said by Stewart that the poet’s sphere of activity is only limited by our sphere of enjoyment. There is therefore a great difference between poetical truth and historical truth.

A description which may be called true to life when presented to us as a poetical representation, might yet be called an idle fabrication of the brain when given as a historical fact.

Nature is the great foundation of all descriptions, we are so created that we can not have the conception of any thing of which the component parts do not exist in nature. But the poet has the acknowledged liberty of combining these in any way, fitted to give pleasure. But the other classes of writers (excepting novellists whom I may include within the name of poets) are bound to describe such combinations only as exist in nature.

Johnson therefore appears to have misunderstood the signification of maxim which binds the poet to copy from nature, and his knowledge of what actually exists in nature can not bind the poet in forming his combinations.

*Answer to the Thirteenth Question.*—The chief peculiarity of the Spenserian stanza that at present strikes me is the constant intermixture of hexametre iambics (or Alexandrines) with the English heroic, which consists of five iambics.

Johnson objects to Spenser's style as too antiquated and irregular and says that we ought to improve upon the taste of our ancestors and not follow them blindly. He also objects to it on account of the obsolete words which abound in it. He says that we ought not to pick up what our ancestors have thrown away.

These celebrated authors have assumed it because, it is very dignified and majestic. Beattie explains why he adopted a measure so difficult and complicate in the preface to his *Minstrel*.

*Answer to the Fourteenth Question.—*

Sō Eāgērlȳ thē fiēnd 1

O'ēr bōg ȳr stēep, thrōugh strāit, rōugh dēnse ȳr rāre 2

Wīth hēad, hānds, wings ȳr feēt, pūrsūes hīs wāy 3

Ānd swims ȳr sinks ȳr wādes ȳr crēeps ȳr flies 4

If Johnson is to be our guide, these lines are peculiarly halting. If the iambic be the only measure that can be used in heroic verse, then almost all these lines are defective as will be seen by my scanning them. But Milton uses intermixture of various metres. Thus in the 1st line the last foot but one, is a *pyrrhic*, the 4th in the 2nd line is a trochee; the 2nd in the 3rd line is a *spondee*; all the rest are iambic. The number of monosyllables and string of consonants in the last line makes it peculiarly harsh, but it very beautifully represents the motions of Satan, and we see the number of arts he uses, by the number of feet,—

1 And swims—2 or sinks—3 or wades—4 or creeps—5 or flies.

*Answer to the Fifteenth Question.—*—This is one of those passages which Dr. Johnson cannot contemplate without deep feelings of admiration. The cæsural pauses are on the sixth syllables in the 2nd and 3rd lines. In the 4th line the pause is after the 7th and we are obliged to stop on a weak syllable; but still it leaves three syllables after, that is some compensation according to Johnson's rule. In the 5th and 6th lines again, it is on the sixth syllable. In the 7th line it is not so good, because the pause is on the 5th and we are obliged to rest upon a weak syllable.

In the last line it is very bad according to Johnson as we rest upon the 1st and 2nd syllables. But according to the opinions of a famous grammarian, these pauses are very beautiful, as they give us time to contemplate the various circumstances pride, pomp &c. This is one of the best passages in the best play of Shakespeare. The blank verse has the advantage of regulating our stops by means of the sense and not mere sound; it has never the disadvantage of having the sense, opposing the sound and vice versa.

*Answer to the Sixteenth Question.—*—The different sorts and motions described in the two parts of the passage necessarily required a difference or change in the measure. The *anapæst* of the first line, marks the quickness of motion according to Johnson's principle which is in this case true. Each of the following lines begins with an *anapæst*. The slow mēlting strāins, require that the verse should be prolonged, and the succession of long sounds, which takes us a great deal of time to pronounce effects this purpose. The slow motion of the queen is also well represented. In glidīng stāte, shē wins hēr eāsȳ wāy.

*Answer to the Seventeenth Question.—*

Ōvĕr hill, ōvĕr dāle  
 Thrōugh būsh through brīfār  
 Ōvĕr pārk, ōvĕr pālē  
 Thrōugh floōd through fire  
 Ī dō wāndēr ēvĕry whērē  
 Swiftēr thān thē mōon'ēs sphērē.

The measure of the verse seems in general to be a *trochee* in the first part.

The first foot of the sixth line is anapaestic and the rest iambic. In the first part the tediousness of the journey is to be represented, and in the second the *swiftness*. The trochee and the iambic answer these respective purposes very well. Johnson is of opinion that the English language has too few vowels and too many consonants and he is very angry, with Milton for his supposed elisions of vowels. He is of opinion, that the final *E* used by our old writers was once vocal, and desires that they might be so still.

*Answer to the Eighteenth Question.—* The quotation from Beattie illustrates by the collection of the number of very harsh consonants in the first part shrill sound of the trumpet and it is indeed so harsh, that it is scarcely endurable. The “obstreperous trump” would rouse the seven sleepers. The easy smoothness of the 2nd part more easy by comparison, might well represent the mental tranquility it describes.

The *short shrill shriek*, is well calculated to give occasional disturbance. When the bēetle winds, we perceive that his horn though small, is sūllēn indeed.

The monosyllables of Pope’s Alexandrine the contrast of the very weak 1st syllables to the very long 2nd syllables of each foot, makes us almost see, the dragging of the serpent’s tale

Thāt like, ā wōund—ēd snāke, drāgs, Its slōw lēngth ālōng.

*Answer to the Nineteenth Question.—* The pause in the 5th line after *bland*, by dispersing our pleasing train of ideas seems harsh, we ought to have been obliged to stop at any place, before the sleep *dispersed*.

*Answer to the Twentieth Question.—* On us who learn the English language merely from books, the meanness of the expression, has no effect. The knife is associated in our mind, with poinard, the dagger and the bodkin, which the Highlander always bears about his person, with which he “rights his wrongs” and stabs his enemy. The *dun* is a word, which is seldom met with, and is therefore not vulgar, and which we meet with in Shakespeare and Milton *only*. It is that same word which Milton uses “When Satan soars into the *dun* air sublime,” and when his comers says “which these *dun* shades will ne’er report.” The idea of peeping through the *blankēt* might have been suggested by Shakespeare’s own habit of peeping through the *blankēts* of his stage, and no idea that brings unto our mind, the author of Hamlet, Othello, and Macbeth, can be associated with anything but sublimity, beauty and pleasure.

*Answer to the Twenty-first Question.—* Whilst I repeat these lines I forget, Johnson and his criticism and see the master mind, that is born to dictate laws to nature, than submit to her laws. Although these

allusions have no prototype in nature, although, honor or any thing else, can never be plucked from the moon, although, the pebbles on the hungary beech can never fillip the stars, nor see the representation of danger; yet in spite of nature, the sentiments, which they represent, could have been better represented by nothing.

*Answer to the Twenty-second Question.*—The words are all Johnsonian and with reference to the sense they are all appropriate. It is true that some of them are too hard to be pronounced by a young lady, and some too difficult to be understood without reference to Johnson's dictionary. But in these things Johnson can see no impropriety.

*Answer to the Twenty-third Question.*—In the 1st passage, the word *which* as it always refers to the nearest noun is improper, since its proper antecedent is *observa tu* and not *insult*, the words *and they* ought to be substituted for *which*.

In the 2nd envy and avarice are called adscititious passions, which is not true, for they are innate.

In the 3rd there is a great tautology.

In the fourth, the metaphor is vicious, and the meaning is lost in the exhuberance of words.

*Answer to the Twenty-fourth Question.*—Hasty compositions, however they may please as for a moment by agreeing with the fashion, can seldom, survive the change of generations, and lose their popularity when they are criticed and their defects shown or simply by neglect.

We shall then find the folly of endeavouring to obtain that which we can not retain in our possession (of collecting ideas, which we can not remember,) and spending our lives in toilsome attempts to acquire fresh possessions when we are in the act of losing those, which we already have.

MOHENDRO LAUL SHOME, *Hindu College,*  
*First College Class, Second Year,*  
*Senior Scholar of the First Grade.*

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### THOMSON'S SEASONS, AND CASTLE OF INDOLENCE.

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*Answer 1st.*—Poetry enhanceth whatever she toucheth. The poet takes nature for his subject and then adorns it with all the glow of his own imagination, and all the beauties he can collect from the objects around. Thus in the verses before us the constellations are natural objects, but the Poets imagination represents them as watching over the earth, and peoples them with beautiful beings of his own creation, who tune “the silver lyre” “amid the spangled sky.”

Poetry is not a lie, but only “the shadow of a lie.” The Poet has nature for his subject, but he is at liberty to improve on it, and make the face of nature more beautiful than it actually is. He is at liberty to collect all beauties and exclude all defects, and intersperse his piece with such allusions as the imagination naturally suggests from the objects before it. Thus, in the verse before us, the poets imagination naturally peoples the constellations with extremely beautiful beings.

The scope, or end of poetry is to instruct at the same time that it pleases. This the poet effects by a happy combination of harmonious

numbers, and such allusions as lay hold on the imagination, and chain the attention. The truths conveyed in poetry "come home to men's bosoms," a fact conveyed in poetic imagery sinks deeper into the heart, and is longer remembered, than when communicated in common prose.

Poetry, says Bacon, "serveth and conferreth to magnanimity, morality, and delectation. I shall conclude with the following verses of Gray, showing the effects of poetry,

"Thy steps, where e'er the goddess roams,  
Glory pursue and generous shame,  
The unconquerable mind, and freedoms holy flame,"

The classical superstition alluded to in the last two verses, is to Pythagoras' theory of the harmony of the spheres.

*Answer 2nd.*—The words used figuratively are "dejected", "struggling", "clothed", "weak", "wan", and "prostrate."

"Dejected" makes the day sad for the absence of the sun; "struggling" has the effect of realising to us the difficulty with which the rays of the sun pierce the clouded atmosphere; "weak" and "wan" convey a proper impression of the pale light of the sun, and "clothed" of the manner in which the sun is enveloped by clouds and storms. "Prostrate" represents the earth as longer able to resist, but resigning itself to the influence of the wintry storms.

*Answer 3rd.*—The "full ethereal round" is the moon, and "all one cope of starry glitter" is the canopy of heaven, which is so studded with stars, that not a vacant spot presents itself to the eye, but the whole appears to be one glitter of stars.

"Full" is put to intimate that the moon is not only partly visible; and "one" cope to show that the sky is so covered with stars, that the eye cannot rest on a vacant spot. Morn is here represented as a beautiful lady who on waking finds that some mishap is befallen her. The morn resembles a lady in being modest, chaste, and beautiful, and putting on the same dull appearance from misfortune.

*Answer 4th.*—"The plume of war, with early &c." This verse alludes to the glory which Sidney acquired during the campaign in Flanders, where at an early age he distinguished himself for his gallantry, and nobly fell at the battle of Zutphen. "The lover's myrtle" is in reference to Sydeney's love songs to his mistress Stella; and "the poet's boy" alludes to his "songs and sonnets."

*Answer 5th.*—The first three verses allude to the sincere devotedness, with which he supported the cause of his religion, in opposition to the reformation, which Henry VIII., was trying to bring about. More's zeal was generous because he sacrificed his life to his principles, but it was mistaken because it opposed the reformation, which has conferred one of the greatest blessings on mankind.

More was as firm as Cato because nothing could make him flinch from his established opinions. He was as just in the integrity and disinterestedness with which he performed his official duties.

"Like rigid Cincinatus &c."—More, like Cincinatus, refused to be rich when to be rich was in his power. He declined a lucrative place which was offered him by Wolsey, alleging that he could not accept it in strict conformity with rules of justice, as he was already holding other civil offices. The character of More "both in public and private life," says, Lord Campbell, "came as near to perfection as our nature will permit."

“A dauntless soul &c.”—This verse alludes to the unshaken firmness with which More met his end. Hume speaking of it says, “not only his constancy, but even his cheerfulness, nay his facetiousness never forsook him; and he made a sacrifice of his life to his integrity, with the same difference that he maintained in any ordinary occurrence.” When he was ascending the scaffold he told the executioner, with a smile, “Friend see me up but when I have to come down let me shift for myself.

*Answer 6th.*—Bacon’s philosophy is described here as of a divine character, as tending directly to the benefit of man, and leading us, by induction, to a connection of the existence of a great First Cause.

*Answer 7th.*—Newton is represented here as a pure disembodied spirit as one lent to mankind, by God, to disclose to them his boundless works, and the order and harmony that pervades his government.

The poet very properly uses *lent* here. All natural gifts are lent to us for some special purpose, and we are all responsible for the use we apply them to. Shakspeare uses *lent* in the same sense in the following verses:

“ For nature *lends* not the smallest scruple  
Of her excellence, but like a thrifty goddess,  
Determines to herself both thanks and use.”

The laws here alluded to are what are commonly called in mechanics “the three laws of motion.” The poet calls them “sublimely simple because the principles they disclose are very simple, and yet suffice to explain all the phenomena of nature.

*Answer 8th.*—A great change has taken place, in the opinion respecting Shakspeare, since Thomson’s time. He is now no longer considered wild, but the most exquisite art is now acknowledged to be exhibited in his writing, and Ben Jonson’s opinion that

“ A poet’s made as well as born:  
And such wert thou.”

is fully confirmed.

Milton has the following verses on Shakspeare:

“ Or sweetest Shakspeare, Fancy’s child,  
Warbles his native wood notes *wild*.”

and Gray these

“ Far from the sun and sumer glade,  
In thy green lap was natures darling laid.

“ This pencil take she said whose colours clear,  
Richly paint the vernal year:  
Thine too these golden keys, immortal boy!  
This can unlock the gates of joy.  
Of horror that and thrilling fears,  
Or ope the sacred source of sympathetic tears.”

*Answer 9th.*—

“ Three poets in three distant ages born,  
Greece, Italy and England did adorn,  
The first in loftiness of thought surpass’d,  
The next in majesty, in both the last;  
The force of nature could no further go,  
To make a third she joined the former two.”—*Dryden*.

The allusions in the last two verses are to Milton’s own descriptions of chaos, of blooming Eden, and of Paradise.

*Answer 10th.*—In the first four verses the poet promises to write heroic poetry. Thomson did not fulfil his promise.

In the fifth verse Thomson promises to write such lyric poetry as were composed by the ancient bards. The following verse from Milton's *L'Allegro* is called up by the sixth

“ Sometimes let gorgeous tragedy,  
In sceptered pall come sweeping by,  
Representing Thebes or Pelope's lines,  
Or the tale of Try divine.”

Gray has these verses on tragedy,

“ In buskin'd measures move,  
Pale grief and pleasing pain,  
And horror tyrant of the throbbing breast.”

Thomson wrote the tragedies of “ *Agamemnon*,” “ *Sophonisba*,” “ *Coriolanus*. ”

The poet is of all writers to inculcate virtue because his pictures make the deepest impression.

*Answer 11th.*—Qin, the Esop of his age, lived a while in indolence and retirement, but being deeply animated with a love of fame, he returned to the stage, and acted his part with greater vigour. Yet he did not go beyond nature's bounds, but observed decorum; and could now excite our pity, and now our admiration.

Obsolete words are introduced into the Castle of Indolence, because this poem is written in imitation of Spencer.

Qin is called “ the Esopus of the age” because he inculcated morality.

*Answer 12th.*—

- (1.) “ To strew the laureate herse where Lycid lies.”—*Milton*.
- (2.) “ Where the Attic bird,  
Trills her thick warbled note the summer long.”—*Milton*.
- (3.) “ As thick as idle motes in sunny rays.”—*Chaucer*.
- (4.) “ Yet I do fear thy nature,  
It is too full o' the milk of human kindness.”—*Shakspeare*.
- (5.) “ I know a bank whereon the wild thyme grows.”—*Shakspeare*.

THOMAS KALLONAS, *Dacca College*,  
*Third College Class, Second Year*,  
*Junior Scholar.*

## Mental Philosophy.

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### Morning Paper.

*Answer 1st.*—The term Metaphysics is commonly applied to those sciences which treat of subjects beyond physics, or of subjects which are not perceptible by our senses. Stewart's Philosophy of the Human Mind treats, principally at least, of our mental faculties which are not perceptible by our senses; therefore it can, I think, be properly called a work on Metaphysics, according to the above definition. The vague meaning of this term has led those men who are chiefly occupied with the objects of their senses to believe that as the science treats of nothing of the sensible world which to them is only useful, mental science can be of no use in the ordinary business of life, and so they have thrown into discredit without discrimination what is clear and useful in the science as well as what is obscure and frivolous.

*Answer 2nd.*—The peculiar difficulties which are inseparable from the subject of Mental Philosophy are—(1) the common opinion that it has no connection with the business of life. (2) Our natural inclination to draw analogies from the material world. (3) Lateness of the period from which it began to be successfully cultivated. But of all these difficulties that which arises from the ambiguity of language is the most insurmountable. This difficulty is even greater than that which we meet with in reasoning in this science. During the whole of any reasoning process, we often find ourselves obliged to keep a steady and scrupulous attention to the signification of the terms we employ; and, excepting only in those cases in which we have accurately defined the words we make use of, and have rendered these words perfectly familiar to us by long practice, we are sure to run into errors and absurdities, if we do not pay that degree of attention to the meaning of the terms. This happens most strikingly when the words we employ are of a very abstract nature, such as honour, justice, government, policy, constitution, church, state &c., &c.

With improvements in language, these words become more and more precise in their significations, the limits to their meaning become accurately marked; and they therefore offer steady subjects to the investigation of philosophers. Philosophers in the ancient times had been engaged more in disputes about words than in attempts to increase the stock of human knowledge. But when the signification of the words become undisputedly fixed and ascertained, they would naturally produce advance of knowledge and lead to more useful and important discoveries. The meanings being accurately fixed, all the particular things and particular objects which are comprehended in the general terms will be precisely classified according to their common qualities; and these classifications will be more comprehension in consequence of the assistance which science improved by the possession of precise and well defined general terms, would give to our powers of reasoning and invention.

*Answer 3rd.*—It was Mr. Hume who first drew the attention of men to the relations which connect our thoughts together and to the laws which regulate their succession. The relations which Mr. Hume points out are, resemblance and analogy and contiguity in time and place. This enumeration, although not sufficient, was worthy of the attempt of a philosopher and was in the true scientific direction. Because these are the principal relations which regulate ideas in the minds of the greater bulk of mankind, for in their minds ideas are associated according to their most obvious relations and it is these relations which Hume attempted to enumerate.

A philosopher should first ascertain the case of the generality of mankind and then endeavour to find out the exceptions to the general rule which he will establish. Therefore Hume's attempt was in the true scientific direction, though there are many other relations which connect thoughts in our mind, and though the relations which regulate ideas in the mind of a philosopher be quite different from those which prevail in ordinary minds.

Hume's enumeration of the principles which regulate the succession of ideas in the mind is of course defective, but a complete enumeration of them is impossible. For these principles are innumerable; ideas may be even associated together in consequence of the similarity of sounds of the different words which express them. Stewart divides these principles into two classes; that is, those which are obvious, and occur to us spontaneously, and those which do not occur without some effort of attention.

*Answer 4th.*—According to Stewart casual associations are apt to warp our speculative judgements in the three following ways. (1.) By connecting in our thoughts things which are distinct in their nature, so as to introduce perplexity and error into every process of reasoning in which they are involved. (2.) By misleading us in those anticipations of the future from the past which are the chief foundation of our conduct in life. (3.) By connecting in our thoughts erroneous opinions with truths which irresistably command our assent and which we find of importance to human happiness.

The connections which exist in every mind between the notions of extension and colour, as also between those of time and space, are striking examples of the first kind of casual associations.

The popular belief in the influence of the planets and of lucky days, the observances and religious ceremonies which accompany the practice of medicine among rude nations, are examples of the second class of casual associations.

From the class of associations arises bigotry in national religion and institutions, and a deep rooted affection and veneration for those maxims, of whatever nature; to which we have been taught from our childhood to give an implicit assent.

Stewart clearly traces these errors and superstitions to their proper causes and shows by means of convincing arguments and illustrations that they have no foundation in the universal nature of human constitution, but arise merely from accidental associations; his instructive observations therefore may have the beneficial effect in clearing the mind of these errors, unless the mind be blinded by superstition and therefore incapable of understanding the language of reason.

*Answer 5th.*—It was Dr. Reid who has given currency to the opinion that the province of imagination is limited to objects of sight. According to Stewart this opinion is quite erroneous. Imagination, says he, delights to display its power of combination in all the various objects of human enjoyments. How many beautiful images have been drawn from the fragrance of the fields, from the melody of the groves &c.! Still it must be acknowledged that the objects of sight furnish the principal and by far the most pleasing materials, out of which imagination selects and forms its own creation; but it is not the only source.

In the rise of the fine arts, taste without imagination is impossible. There being then no work of eminence by which we can form our taste, imagination acts the part of taste and works according to its own views. It consequently remains vigorous at the beginning of the rise of the fine arts. But as the works in these arts grow numerous, we can form our taste by the perusal of these works, and therefore taste now takes the part of imagination and improves daily, while imagination declines. This takes place according to the general principle that all our faculties both mental and bodily receive improvements or decays, according to the exercise and cultivation which we give to them.

*Answer 6th.*—Many circumstances, says Stewart, have happened and many discoveries have been made to render the progress of society to a state of greater happiness, certain and almost inevitable. The press has secured a gradual progress and civilization of mankind. The modern method of fortifications has secured civilized countries from the attacks of barbarians who in the ancient times, produced shocking havocks on countries and kingdoms which they attacked, and destroyed the monuments of human industry and science. Experience has taught the rulers of mankind that the prosperity of their nations does not depend on the poverty and misery of their neighbours, but on their prosperity and opulence; and that the best source of public revenue should be derived from their own country and not from foreign subjects. In the ancient histories we often read of the downfall of empires and kingdoms, of sudden changes from prosperity into misery, from civilization into barbarity and these may dishearten us of the progressive improvement of our race; but the circumstances and discoveries, above mentioned and which are all effects of education and the general diffusion of useful knowledge, have rendered such revolutions in the present age impossible; and we have every reason to hope that as knowledge will increase and be more diffused, such improvements and discoveries will more and more increase in number, and will render the path of the progress of society to a state of greater happiness clearer and easier, at every step.

BROJONATH MOOKERJEE, *Kishnaghur College,*  
*Second Class.*

## Political Economy.

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**Answer 1st.**—Rent is the consideration paid by the occupier of a piece of land, (when that land belongs to another) for the use which he is allowed to make of that land. It originates in the appropriation of the soil by the government or any class of the community. This account of the origin of Rent is that given by Mr. Jones; but Political Economists of great renown have denied that Rent originates in this manner. They assert that Rent consists in all cases, of surplus profits and originates in the difference of the quality of the soil in different lands. Mr. Jones is at great pains to show, that throughout the world, when the people were numerous enough to resort to agriculture for subsistence, they placed the proprietorship of the soil into the hands of the general government, and the king then distributed it amongst his nobility, and that when these last allowed the other men to cultivate the lands, they made a contract with them, by which they were to be paid some compensation for the use of the land and this compensation consists either in labour, part of the produce or in money. He moreover remarks that it is only in limited portions of the earth that rent consists of surplus profits as in England and Netherlands.

Mr. Jones divides rents into two classes.

1. Peasant or primary rents. II. Farmer's or secondary rents. He sub-divides Peasant rents into four classes. 1. Labour rents where the *consideration* paid for the use of land, consists in the personal labour of the occupier, employed upon the demesne lands of the proprietor.

2. Metayer rents where the remuneration paid, consists in some part of the produce of the lands used; this part is generally one-half, and hence the name *metayer*.

3. Ryot rents, where the sovereign is the proprietor of the lands and the rent paid in kind.

4. Cottier rents where the rent paid to the landlords is in money, the cultivators extracting their own wages from the soil.

The chief distinction between peasant and farmer's rent, is that in the former case, the person who rents the land procures his own wages from the land by his personal labour, whereas in the latter case the farmer employs other agents for the cultivation of the land and is intermediate between the landlord and labourer. The different parts of the globe in which they respectively prevail are—

1. Labour rents prevail in the eastern part of Europe chiefly. In the Russian Empire, Prussia, Poland, Hungary, Germany and has the Rhine for its western boundary.

2. Metayer rents prevail in the west and south of Europe, in France, Italy, Greece (ancient and modern,) Spain.

3. Ryot rents prevail throughout Asia.

4. Cottier rents prevail in Ireland.

Farmer's rent prevails in England, Netherlands, Scotland (except the Highlands.) United states of America.

Different sorts of rent are sometimes found in the same country but there is always some kind of rent which is prevalent.

*Answer 2nd.*—In those countries in which ryot rents prevail, the sovereign is the possessor of the soil and receives rent from its subjects. It is true that he sometimes transfers his right to individuals, but his paramount claim remains always unquestioned. In later times an intermediate class like the zemindars in India has been allowed to shoot up and become hereditary, but still they are merely to be considered as collectors under the government.

The circumstance of all classes being subservient to the king for food, originates in despotism, and has a tendency to continue it. The agriculturists are all dependent on the king by the nature of their contract, and as all the rents centre into his hands he is the disposer of all wealth, and the citizens subsisting on his bounty become more dependent than the peasants. The noblemen too are all dependent on the king's bounty for food. Thus there is no class to check the unlimited despotism of the king.

The ryot rents are established throughout Assia (except Asiatic Russia) and European Turkey. They prevail in China, India, Persia, Turkey, &c. They originated in the conquest of the extensive countries that bound the central basis of Asia, (*i. e.*) in the conquest of China, Persia, India, Turkey, &c. by the Tartars or Scythians. These Tartars though they led a roving and independant life when remaining in their own fastnesses always put themselves under the despotic authority of a chief, whenever they were required to pass from one place and another and whatever conquests they made belonged to their chief. It was to this circumstance that India owed its present form of government and the Shastras show that even before historic memory, the soil belonged to the king by right of conquest. China too has been repeatedly conquered by the Tartars. Persia and Turkey underwent the same fate.

Theoretically the ryot might have a permanent interest in the improvement of the land, in as much as the government is only entitled to one-fifth, one-sixth, or one-tenth of the produce and the rest is his own. In the case of India the government has only the right to exact one-sixth of the produce from time immemorial. But the rapacity of the government and its agents in former times, and of the zemindars in the present, scarcely leaves the cultivator a bare pittance for the support of himself and his family, whatever be the quantity of produce which the land might yield. Whilst improvements in the cultivation of the land are daily introduced, the poor ryot finds himself becoming more and more wretched every day, and many are compelled to give up the cultivation of their lands. Law might have some bounds but oppression has none.

*Answer 3rd.*—Whilst the market is free and the trade unshakled, this relinquishment of the revenue or rather rent, can have no permanent effect on prices. It will undoubtedly have a very beneficial effect (supposing the zeminary system removes,) in raising the means of the ryots; but on the price of corn it can have no effect. The demand for raw produce remaining the same, I do not see how the relinquishment of rent can have any effect on price. The cultivators will not surely refuse to take what is offered to them because they have to pay no rent; nor will the competition for produce be necessarily diminished on account of this relinquishment. But I see one cause of the reduction of prices for a *temporary* period; when the rent is relinquished, many lands of an

inferior quality which can not in the present state of things be cultivated, will come to be used, when the peasant shall have the whole of its produce; but the diminution of prices arising from this cause will be soon stopped by increased demand and I even doubt that in the present state of the world when there is a free communication throughout all parts of the globe that any diminution of prices can take place from the relinquishment of the rents in India alone.

*Answer 4th.*—There are two sources of the increase of income for every class of the community, one by the depression of the revenue of any or all other classes, or secondly by the increase of the produce extracted from the soil. The former is temporary and destructive of its permanent interests, the latter otherwise. Let us apply this to the case of the wages of labour, suppose the labourers resolved by common consent to extract from the farmers greater wages than they (the farmers or capitalists) can pay with profit to themselves, what will be the effect? They will transfer their stock to other countries and the labourers will starve for want of employment. If the landlord takes more than what the farmer can give after keeping his own profit and the wages of labour, the same effect will follow and the lands will not be farmed, so that the landlord instead of receiving more rent will receive none at all. If the farmer depresses the wages of labour, the labourers will leave off cultivating land and become manufacturers, so that labour becoming scarce wages will rise. These cases apply only to farmer's rents. But Mr. Jones has shown that the general conclusion stated in the question holds good, in the case of peasant rents also. In these cases if the landlord endeavours to increase his rents at the expense of the peasants, he only cripples his own means. If the landlord of the serf, increases his labour rent, the serf who was already wretched, becomes more so and his efficiency as a cultivator diminishes. By these encroachments his labour is not worth one-fifth of that a free labourer. If the landlord of the metayer and ryot increases his rent the means of the peasant is crippled and the landlord's half or one-fourth part of the produce will not be worth so much as it was before. The cottier in his wretched state is both dangerous and incapable of paying his promised rent.

*Answer 5th.*—The permanent proportion of wages, profit and rent, cannot be altered, by an increase of precious metals. Their only effect will be to raise the price of things, compared to the former ages. If the price of things be raised, the wages of labour must be raised also, because the labourer can no longer subsist on the sum on which he lived before. The value of money being changed, the rate profit must change also, and if wages and profit change in proportion to the new value of money, then rent must follow the same course in as much as it is only the surplus profits and consists of what remains after paying the wages of labour and the ordinary rate of profit. The proportion might be broken for a temporary period but it cannot fail to be readjusted in the course of things.

Money is but the measure of things, and when the things themselves remain constant, no permanent change of proportion in the income of the different classes can take place by any change in the quantity of precious metals. The only effect of the introduction of a large quantity of new precious metals will be to raise the money value of wages, profit, rent, as well as of every thing else, in due proportion; so that with respect to the conveniences of life, there will be no other change

than what results from the possession of a large quantity of shining materials to work with.

MOHENDEO LAUL SHOME, *Hindoo College,*  
*First College Class, Second Year,*  
*Senior Scholar of the First Grade.*

*Answer 1st.*—From a wide survey of all the countries of the earth, it becomes apparent that there must be some connexion that should tie the owner of the land, and him who takes it from him in order to raise his own food from it. Land therefore is appropriated and this is the origin of rent. The landowner will not appropriate his lands until he gets a remuneration from the cultivator, and this remuneration is the *rent* which he gets from his souls. The cultivator is under the necessity of getting the land or else he will starve; and on the part of the landholder again there remain plenty of soils from him, of no use, after he gets his conveniences, and therefore he gives way his lands and apportions it amongst various cultivators and takes from them something in return.

Rents therefore are surplus profits.

The different kinds of rents that prevail in the different parts of the world, on account of the different contracts between the landholder and the cultivator are, serf rents, metayer rents, cottier rents, ryot rents and farmers rents. Of these the first may be included under the labour rents; the second three under peasant rents.

*Answer 2nd.*—Ryot rents are paid by the cultivators of lands, who extract their own wages from the soil, in produce, to the landholder. The ryot is not obliged to labour on the demesne lands of his landlords, like the serf, for a fixed period, as a return to his holding the land, nor does he pay a money rent to the landholder like the cottier, but he is quite uncertain of his possessions. Of all the three classes included under the peasant rents, he is under the influence of frequent impositions, and his right over the land is as precarious as oppressive dominations may devise to make him.

These rents prevail in Asia, and the name which is given to them is derived from an asiatic word signifying a *subject*. The different countries in which they prevail in this quarter, are, India, Persia, Turkey, and China.

The circumstances to which ryot rents owe their origin are in the right of the sovereign as the chief owner of the soil, and secondly to his right being established as a possessor of the land, by conquest. The followers of a chief acknowledge him to be the sovereign of the land which is gained by conquest and it is quite optional with him to distribute the lands amongst them. These chiefs or sovereigns are very bad superintendents and are always given up to extract much from their ryots, who held their rights very precariously.

The ryot of India has no permanent interest in the improvement of the land in the present moment. The ryot is not responsible to the government for the tenure of his land. He is subjected to the 'zemindar' a collector of revenue appointed by the government. This system though it saves the government much trouble and care, is very bad on the part of the ryot. The zemindar himself is a great arbitrary man and he displaces the ryot from his land at his caprice; for instance by laying upon him more impositions and extra taxes.

So it is not the interest of the ryot in India to improve their land because he would get no additional interest from it. If the farmers rents be prevalent in this country, as they are in England, then every improvement of the land, would give them more profits,—under the present system, the ryot of this year would seldom be a great capitalist ten years hence though he may apply additional labour, because his tenure is precarious.

*Answer 3rd.*—In the present system of the government of India, the cultivators are not at all connected with but they have their contracts made with the zemindar. Now when the revenue is relinquished by the government, there is no advantage to the cultivators, but the zemindars are benefitted. They keep all this revenue themselves, and consequently those who cultivate the land and raise corn are not at all freed from any burden which they had formerly. The price, therefore, in this case of the food must necessarily be the same as it was before. The price of food will not fall in such a case. The zemindars will not take less than they had done before and consequently it is the nature of the cultivators to keep up their own interests, which is by having the same price of their commodities as it was before, and not lessening them.

*Answer 4th.*—From the general view of the different kinds of rents prevalent in different countries it may be proved that the interest of the landlords are not in opposition to those of the other classes. We plainly find that where the labour tenantry is prevalent, the landlords are despots and the effect is that slavery is the consequence, and the absence of a middle class, or nonagriculturists is the general effect, which reduces the prosperity of the country and weakens its power. Change these tenants into peasants and the aspect of the country will be different. Let the tenants be first metayers and then cottiers and then let in the third stage them to be farmers and the consequence is that they will be capitalists, as are the conditions of the tenants of England, and then there will be a middle class—a third estate—which will raise the country to a greater pitch of power. The commoners will be screened from the oppression of the sovereign of the soil, and so be perfectly happy. Let the landlords of the ryots decrease their oppressive taxes and let them be free and give them grants of lands with fixed contracts, then there will be an interest in the tenant to improve his land. A great writer says that where there prevails a system of government which is oppressive, and high rents are taken from the cultivators there, “the illusions of self-interest are all understood” because the country can no longer thrive. The prosperity of the landholders will be of a very short moment, but in the sequel he cannot but suffer.

For the same reason all the classes of a community being dependent on one another by a general and common interest, by a depredation of the interest of any one, another may rise for some little time, but in the end their fall is quite certain suppose the capitalist takes an exorbitant interest of his capital and by that means depress him who has borrowed from him. It will in a course of time so happen that both the one and the other will be nearly nothing.

And so on for every other class.

*Answer 5th.*—The effects on rents and wages by an increase of the precious metals will be that these being too much, wages will fall but rents will rise.

OOMA CHURN DAS, *Dacca College,*  
*First Class, First Year.*

## English Essay.

“One touch of nature makes the whole world kin.”—*Shakespeare*.

Human society has been very appropriately represented as a large family, of which the different members are all the children of one common father who is the head and manager of the family.

Notwithstanding the manifold diversities of colour, height, form, temper, morals and religion, there remains enough of similarity between men of the most different races and countries, to indicate that they are all moulded by the same hand, and that all partake of the same common nature. They are all originally impelled to act by the same necessities and are all actuated by the same passions. Whether we seek our models amongst the most civilized nations of the world or amongst the rude barbarians who live in caves and subsist on hunting, whether we are engaged in examining the character of an English gentleman or that of a wandering Tartar, we find that in every case, man bears sufficient resemblance to his fellowmen to be considered as a member of the same common family. We are not only the children of the same common father, but are all gifted with a common nature, and with propensities that we inherit from our birth. We are not only brothers by origin but also by similarity of nature. When therefore we wound the feelings of a human being, which we often do without sufficient consideration, we ought to pause and reflect, on whom it is that we are thus heedlessly inflicting the most excruciating of tortures mental agony. We ought to recollect that it is our brother who suffers, that we are unconsciously or rather unnaturally injuring a child of the same father, and one who is as much the object of that father's care as ourselves. The “primeval curse” the sin of Cain, is on the head of every murderer, for all of us are the children of the same father and that father is the supreme judge of all our actions.

As Arvidorous when he loved Imogen unconsciously did an act of kindness towards the child of his father, so when we are benevolent to any of our fellow men, we do an act of kindness to our brother, although we might not, at that moment recollect that he is such. If this precept of universal brotherhood, were always borne in mind, we would suffer no human being to be in distress whilst we have the power of relieving him; but to our shame, how often do we turn a deaf ear to the cries of humanity. What a vast amount of suffering would disappear from the surface of the globe, if the doctrine implied in our motto, had been equally impressed on the mind of every member of this common family. Utopia would have been realized; nay more than that, for we are told by More that his Utopians sometimes warred against their neighbours; but the recollection of this precept would drive away all sorts of misery that man inflicts on man, from the surface of the earth. But to suppose that man, with all the imperfections incident to his nature as at present constituted should be always able to act up to the principle of universal brotherhood, is an absurdity. The benevolence of human beings is generally limited by the most weak barriers, as the difference of colour, shape or country. But if we could survey, human society with the eyes of a being of a superior order, all the minor characteristics (great

as they appear to us) that distinguish man from man, would vanish from our sight, and human nature would appear in the broad lineaments which characterize the whole race. Can we distinguish one fly from another? It is the microscopic eye given to every individual of a genus to enable it to distinguish one member of his community from another that magnifies our perception of the distinctive properties that exist amongst individuals. Notwithstanding therefore the wonderful differences that exist amongst individuals of the same species, their similarity is far more wonderful. This similarity appeared so striking to the lofty genius of Plato that he concluded from it, that the essence of every thing existed, in the mind of the eternal from eternity to eternity and that this essence, notwithstanding the circumstance of its being possessed by an almost infinite number of individuals, is itself an indivisible whole. So that according to him every individual man possesses the same common essence which is possessed by others of the human race. A doctrine very similar to Plato's is inculcated by our Vedas, with regard to the unity of the human soul.

This kindredship arising out of our common nature ought to be far stronger in man than in other creatures. The inferior animals might live each by itself or only in pairs; they might subsist on the spontaneous productions of the earth; but man is insufficient of himself; he is endowed by nature with cravings and with wants, that can only be satisfied by the assistance of other men. Society is his proper element and in society, each individual is indebted, for his comforts and necessities, nay for his very existence to the assistance of his fellow men. Hence arises a fresh source of brotherhood, amongst men. In the present state of society an individual man is but an incomplete being, he is but an element or component part of a large and complete whole. He is the fellow labourer of a vast number of individuals in a work of very great importance, which is no less than that of upholding the fabric of society.

Not only are men joined together by their physical necessities but also by the constitution of their mind. They require the sympathy of others even in cases where that sympathy can be of no material use to them. We wish to participate our joys as well as our sorrows with others. The former lose half of their relish when enjoyed alone and our sorrows press upon us with a double weight, when they are not alleviated by the sympathy of others. From all these, it is evident that we are destined by nature to live in a state of brotherhood with our fellowmen. How beautifully is the desolation of solitude, represented in those magnificent lines of Cowper in which he makes Alexander Selkirk to complain of his forlorn condition. What happiness is there in being the monarch of all we survey, if we can not enjoy our monarchy in the company of our brother men? So much is fellowship an indispensable ingredient of our happiness that it has been remarked by Bacon that those who are placed by fortune above the fellowship of other men generally descend from their envied elevation into a state of brotherhood with their inferiors. We are therefore, by our common origin, by our own disposition as well as by our necessities, placed in a state of brotherhood with mankind.

In primeval times when the distinction between different ranks was not so great as now, and the dependence of one man upon others was

more immediate though not so extensive as at present, all the members of a society regarded each other as actual brothers and cousins. In the highlands of Scotland, the meanest retainer or to use the appropriate phrase of Sir Walter Scott, the most "wretched Kerne" was considered as cousin or kinsman to the chief, and was used by him as such.

In every age the brotherhood of man to man was recognized in theory though not always acted upon. It is only a few philanthropists, men like Howard and Boerhaave, had endeavoured to the utmost of their means to act up to this principle. But notwithstanding the general inconsistency of men's actions with their principles, never was this great principle which we are discussing, so grossly violated as in the general prevalence of that impious trade, by which one race of men were dragged to a distant country to be the slaves of another. Well might insulted humanity stand up and cry shame on mankind, as she was feigned to have done, by the poets.

MOHENDRO LALL SHOME, *Hindu College,*  
*First College Class, Second Year,*  
*Senior Scholar.*

Wherever we turn our view, we find the unanimous voice of the greatest philosopher and the greatest bard of England, confirmed by the general suffrage of mankind, against "wasting on" ourselves those virtues and accomplishments which, when imparted to others, might produce important public or private benefit; they do not however say that teach them all your cunning and treachery; but only such parts as may lead to "fine issues." They call upon us to put all our good thoughts into action, and not merely to cherish them for a little while and then dismiss them without making any effort to cultivate the course of conduct to which they lead. They moreover advise us not to "give every unformed thought its tongue" and to let every wild creation of our brain have its course.

Such is the great precept before us, and we now proceed to consider whether the correct observance of it involves any point of moral responsibility. It must be conoed as a matter of fact that different men have been endowed with different degrees of talents and adapted to different pursuits, or at least that a very few are fitted by natural genius or education to discover scientific laws or invent any of those contrivances which have so remarkably contributed to the comfort and safety of mankind. Some thousand generations had passed away before "the pure intelligence" of Newton made its appearance; but among them who had ever anticipated that there exist such "sublimely simple" laws as those he discovered and thereby brought to light the order and harmony of the universe? Under these circumstances, could we suppose that Newton was jealous of imparting his knowledge to others, and resolved to "keep it y-buried stark," there would be an end of all further progress of Astronomy. The same remark applies to all other important discoveries made in the other branches of science. Hence we are compelled into the acknowledgement of the truth so powerfully enforced in the sacred writings that "to whom much is given, of him much shall be required," and that, deep guilt attaches to the conduct of

the man who has dared to put God's injunctions at defiance in this respect and iniquitously withheld others from their just share of benefits. It must not be understood however that writers in prose or verse are exempt from this restraint unless their works tend to pollute the imagination or corrupt the moral feelings; though much solid advantages may not accrue from the productions of their brains, their works are not the less useful nor less calculated to promote our happiness and comfort; "a man," says Hugo Grotius, "furnished with good books and a good wife may defy the world." They can elevate us in misfortunes, support us in adversity, and comfort us in distress; on account of these reasons a poet may incur as deep guilt in allowing his fancy "to waste its sweetness in the desert air" as the astronomer by concealing his discoveries.

Indeed I can't see any reason, why any man should be solicitous to have his knowledge locked up in the deep recesses of his heart, unless he be influenced by a hatred of mankind (bordering on misanthropy.) It is a kind of treasure which possesses this magical virtue that instead of being diminished, it increases by being imparted to another, and contrary effects ensue when closely confined in the mind; like mercy it,

"Blesseth him that gives and him that takes."

The communication of "our parts to others" moreover produces so much esteem in this world that no rational being has been yet found who could resist these combined inducements, temporal as well as religious, and remain deaf to Bacon and Shakespeare's call.

MOHINI MOHUN ROY, *Kishnaghur College,*  
*Third Class First Year,*  
*Junior Scholar Second Year.*

### Bengali Essay.

Describe the advantages that have resulted from the cultivation of the Physical Sciences.

## পদাৰ্থ বিদ্যার অনুশীলন দ্বাৰা যে উপকাৰ দৰ্শিয়াছে তাৰার বৰ্ণন কৰ।

জগদীশৰ মনুষ্যেৰ মুখ সৌৰ্য্যাৰ্থে নানা প্ৰকাৰ অন্তু কৌশল সম্ভৱ এই বিশ্বচনা কৱিয়া তঁহাকে বুজি বৃত্তি প্ৰভৃতি নানা মানসিক শুণ প্ৰদান কৱিয়াছেন, যে তদ্বারা সমস্ত বস্তুৰ সমূহ নিৰ্বারণ পূৰ্বক আৰণ্যক সমূহ নিৰ্বাহ কৰতঃ আপনাকে চৱিতাৰ্থ বোধ কৱিতে পাৱেন। তদৰূপারে তিনি নানা বিষয়ে এই সমস্ত বৃত্তিহিংসকে সব্যাপাৰ রাখিয়া জগদীশৰেৰ অভিপ্ৰায় সাধন কৱিতেছেন। মনুষ্যেৰ আদিমাৰহায় ষৎকিঞ্চিং জানেৰ আলোচনা ছিল, সূতৱাঁ তঁহার অবস্থা ও অপকৃষ্ট ছিল। এবং বণ্য পশ্চ বধ ও অল্পায়াস লন্তু কল মূল দ্বাৰা জীবিকা নিৰ্বাহ হইত। কিন্তু জগদীশৰেৰ কি আশৰ্য্য মহিমা! ক্ৰমেু পৃথিবী নানা অন্তু ধৰ্মসম্বন্ধ লোকেৰ আবাস হান হইতে লাগিল। এবং তঁহাদিগেৰ বুজিপুতোৱে বিবিধবিষয়ক আৰিষ্ট্যুয়া হইয়া নানা বিশয়ীণী বিদ্যাৰ অনুশীলন হইতে লাগিল, সূতৱাঁ মনুষ্যেৰ অবস্থাৰও ক্ৰমেু ষৎকৰ্য্য জৰিতে আৱৰ্ত্ত হইয়া পৃথিবী এইজনে এই বৰ্তমান অবস্থা প্ৰাপ্ত হইয়াছে। কিন্তু এইজনেই যে সম্পূৰ্ণ সুখেৰ অবস্থা উপস্থিত হইয়াছে এমত কৰ্ত্তা বলা যাইতে পাৱেন। এখনও জগদীশৰেৰ কত নিয়ম অব্যক্ত রহিয়াছে, মনুষ্য যে পৱিমাণে সেই সমস্ত নিয়ম প্ৰকাশ কৱিতেছেন, সেই পৱিমাণেই মুখ স্বচ্ছতা বৃজি কৱিতেছেন।

এই তপ পুর্খাপর আলোচনা হারা স্পষ্টই প্রতীয়মান হইতেছে, যে, মনুষ্যের উন্নতি ষ্টাইবার নানা কারণ মধ্যে পদার্থ বিদ্যার অনুশীলন এক প্রধান। ষেহেতুক পদার্থ বিদ্যা হারা সম্ভব পদার্থের পরম্পর সম্মত তাহাদিগের দ্বৰা শুধু বিচার করিয়া আমরা নামা সাংসারিক কর্ম উত্তম রূপে সম্মান করিতেছি। পদার্থ বিদ্যার কি রূমণীয় উণ, এই বিদ্যা হারা আমরা জগদীশ্বরের নানা কৌশলের মর্যাদান্ত করতঃ কি বিপুলানন্দ উপভোগ করি। ও তাহার সম্ভব কৌশল সুভাবিপ্রায়ে সঙ্কলিত দেখিয়া আমারদিগের চিন্ত করই বা তাহার প্রতি ভক্তিরসে পরিপূর্ণ হয়। এবং তাহাকে পরম মিত্র বলিয়া তাহার আজ্ঞা প্রতিপালনে করইবা প্রবৃত্তি জয়ে। পদার্থ বিদ্যার অনুশীলন না থাকিলে, জগদীশ্বর আমারদিগের কিন্তু প্রতিপূর্ণ পরম বন্ধু ইহা কি আমরা সম্পূর্ণরূপে বুঝিতে পারিতাম, অথবা তাহার অবিচল কর্তৃতাৰ ইন্দৃশী ভূয়ূ প্রমাণ প্রাপ্ত হইতাম?

পদার্থ বিদ্যার অনুশীলন হারা মনুষ্য অসংখ্য উপকার লাভ করিয়াছেন। এমত কি এই বিদ্যার অভাবে মনুষ্য সমাজ অতি হীন অবস্থায় থাকিত। পদার্থ বিদ্যা হারাই বাস্তু ও বায়ুর, কাঠ ও জলের, পরম্পর সম্মত নিরপিত হইয়া, নৌকা, অর্ঘ পোত, ও বাস্তীয় জাহাজ প্রভৃতি প্রত্যন্ত হইয়াছে। এই সকল হারা বাণিজ্য কর্মের কি সুগম হইয়াছে। অতি দূর বর্তি দেশ থেন অতি নিকট বর্তি হইয়া পড়িয়াছে। পদার্থ বিদ্যার প্রভাবেই নানা কলের সৃষ্টি হইয়াছে। এই সম্ভব হারা মনুষ্যের অতিশয় অম সাপেক্ষ কর্ম সমূহ অতি অল্প সময় ও অল্পায়াসেই সম্ভব হইতেছে। এইক্ষণে কলে কত দুব্যই প্রত্যন্ত হইতেছে। বস্ত্র বয়ন ও তন্ত নির্মাণ প্রভৃতি কলে হইতেছে। এবং ছাপা কর্ম ও মুদ্র নির্মাণ কলেই হইতেছে, অন্য উপায়

ঘারা সন্ধি হইলে এতাদৃশ সহজ ও পরিষ্কার হইবার বিষয় কি? এইখনে রেল রোড ঘারা লোকেরা দুই মাসের পথে এক দিনে উপস্থিত হইতেছে, এবং বেলুন বজ্রের ঘারা শূন্য গমন করিতেছে। এ সমস্ত পদাৰ্থ বিদ্যার কল। বেলুন বেৱেপ হইলে কৰ্মাপযোগী হয় অন্যাপি সেৱেপ হয় নাই অৰ্থাৎ উহার ঘারা শূন্য পথে এক হাব হইতে অন্য হাবে ইচ্ছানুরূপ ঘাওয়া ঘায়না। কিন্তু অন্যান্য কলের অভিবৃত্তি ও চমৎকারিতা শব্দশব্দে ইহা সহ্যুর্গপে বিখ্যাত হয় যে পদাৰ্থ বিদ্যার শ্রীবৃত্তি সহকারে উহার ও উৎকর্ষ হইবে। পদাৰ্থ বিদ্যা অন্যই বেলা বোধনাৰ্থ হকি নিশ্চিত হইয়াছে ও মানা প্রকার সন্তুত সূচক বজ্র প্রতুত হইয়াছে, যাহাদিগকে একবার বাজাইলেই ক্রমাগত বাজিতে থাকে।

পদাৰ্থ বিদ্যার কি মহিয়সী শক্তি। উহার ঘারা যে দূৰবীক্ষণ নিশ্চিত হইয়াছে, তাহা নিয়িব মধ্যে বতোমণ্ডের সমাচার এই পৃথিবীতে আনয়ন করিতেছে। এবং অনুবীক্ষণ ঘারা নয়নের অগোচর ক্ষুদ্র কীট পতঙ্গের সৌম্র্য সদৰ্শন করিয়া আমরা চক্ষুহয়কে চরিতাৰ্থ করিতেছি। কি আশ্চর্যের কথা! যবুষ্য, পদাৰ্থ বিদ্যা প্রজাবে নিঃসন্দেহে প্রকাশ কৰিয়াছেন যে চক্ষু সূর্য ও অন্যান্য গুহ বহুজাদি পরস্পরের আকৰ্ষণি শক্তি অন্য শূন্যে এতপ সংস্থাপিত রহিয়াছে। এবং তাহারদিগের গতি নিজাতণ কৰতঃ অন্যান্যে বলিতেছেন যে অমুক সময়ে চক্ষু গুহণ কি সূর্য গুহণ হইবে।

মনুষ্যের আবিস্কৃয়া সমূহের প্রতি ক্রিয়কাল হিৱ চিত্তে বিবেচনা কৰিলে। তাহার অন্তুত জ্ঞানতা দেখিয়া বিঅয়াপন্ন হইতে হয়। তখন এমতই বোধ হয় যে মনুষ্যের অসাধ্য কিছুই নাই। পদাৰ্থ বিদ্যার অসুশ্রীলন ঘারা সেই অন্তুত জ্ঞানতা ক্রমশ বৃক্ষিকেই প্রাপ্ত হইতেছে।

পৃষ্ঠিবীর পুর্বতন অবস্থার সহিত বর্তমান অবস্থার তুলনা করিলে, পদার্থ বিদ্যার ফল বিলক্ষণ হৃদয়ঙ্গম হয়। পুর্বে এই পৃষ্ঠিবী সামাজিক সুগম বিষয়ে কি হীন ছিল—তখন বে প্রকার শিল্পকর্মাদি প্রচলিত ছিল সে অতি সামান্য। কিন্তু এইক্ষণে নানা কলের সাহায্যে অন্ন সময়ে উত্তম কর্ম হইতেছে। পুর্বতন লোক দিগের অশন বসন ভাদৃশ উত্তম ছিল না, এইক্ষণে আহার ও বর্ত্রের পারিপাট্য হইয়াছে এবং পুরুষাপেক্ষা অন্ন মূল্যে লাভ হইতেছে। পুর্বে দূর দেশে যাইতে হইলে কত বিলম্ব হইত। এইক্ষণে কত শীতু সে কর্ম সম্ভব হইতেছে। পুর্বে গৃহ মধ্যে বকু পাতের আশক্তা ছিল এইক্ষণে তাহা নিরাকৃত হইবায় উপায় প্রদর্শিত হইয়াছে। এইরূপ ভ্রান্তি হওনের মূলিভূত কারণ পদার্থ বিদ্যার অনুশীলন। ইতি

অপ্রসরচন্তু রায়।

২৮ আধিন  
১৭৭৩ শক

তৃতীয় শ্রেণী

কৃষ্ণনগর কালেজ।

PROSUNNO CHUNDER Roy, *Kishnaghur College,*  
*Candidate for Senior Scholarship,*  
*Third Class, First Year.*

\* The five best Bengali Essays were from the Kishnaghur College, but it was not deemed advisable to print them all.

## পদার্থ বিদ্যার অনুশীলন দ্বারা যে উপকার দর্শিয়াছে তাহার বর্ণন কর ।

পৃথিবীত সমস্ত লোকেরই পদার্থ বিদ্যা অনুশীলন করা  
কর্তব্য । কেননা ইহা দ্বারা তাৎক্ষণ্যের প্রকৃত পুণ এবং  
স্বচ্ছতা প্রকাশ হয় । অতএব যাহারদিগের পদার্থের সহিত  
সর্বদা কার্য করিতে হয় এবং পদার্থের প্রায়  
তাৎক্ষণ্যের মূল কারণ তাহারদিগের নিকট পদার্থ  
বিচার হইতে অধিক আর কি প্রয়োজনীয় হইতে পারে ।

মনুষ্য জাতি যে সকল বস্তু দ্বারা বেষ্টিত রহিয়াছে  
তাহারদিগের স্বতাব ও পরম্পরার সম্বন্ধ অবগত না হইয়া কার্য  
করিলে আপনাদিগের অভীক্ষ সিদ্ধি হওয়া দূরে থাকুক বরং  
অচিরে মনুষ্য বৎশ ঋণ হইয়া থায় ।

পুরুষকালে কোন কোন দেশে কুৎসিতরূপে পদার্থ বিদ্যার  
অনুশীলন প্রচলিত ছিল । কিন্তু অবশ্যেই মহা বিচক্ষণ লাভ  
বেকেন যথগুহণ করিয়া এই মহোপকারী শাস্ত্র অধ্যয় অভিনব  
পদ্ধা দর্শাইয়া পৃথিবীর অপর্যাপ্ত মঙ্গল সাধন করিয়াছেন ।  
যৎকালীন এই নব পুণ্যালী ব্যক্ত হইয়াছিল তখন পুরুষের  
পশ্চিমদিগের মতের বহির্ভূত বলিয়া কিঞ্চিৎ অশ্রেক্ষ হইয়াছিল  
কিন্তু অল্প কাল মধ্যেই সকলে ইহার যথার্থ পুণ জানিতে পারিয়া  
যথা সাধ্য ইহার পোষকতা এবং এতদনুসারে কার্য করিতে  
আরম্ভ করিল ।

ঝি কালাবধি পদার্থ বিদ্যার অনুশীলন দ্বারা যে উপকার  
দর্শিয়াছে তাহা স্মরণ করিলে বিশ্বায়াপন্ন হইতে হয় । বস্তু  
এবং পদার্থের যথার্থ মিমাণসা হওয়াতে সমুদয় শাস্ত্রই উন্নত  
হইয়াছে এবং সহস্র প্রকার মনুষ্যের মুখ সম্ভিক্ষির উপায়  
প্রচার হইয়া দৃঢ় রাশি দূরীভূত হইয়াছে । বহু বিষয়ে যে

মানবগণের কুসংস্কার ছিল তাহা দূর হইয়া নির্মল জ্যোতির্ময় জ্ঞানচন্দ্রের উদয় হইয়াছে। অসামান্য অন্তুত ব্যাপার সমন্ব অতি সহজে সম্ভব হইতেছে। এবং অকালে কাল গুুস হইতে নিষ্ঠার পাইতেছে।

এইক্ষণে বাণিজ্য দ্বারা যে সমন্ব শুভ কল নয়ন গোচর হয় সে সকল পদাৰ্থ বিদ্যানুশীলনের কল। জল এবং বায়ুর পৱনসূর সমন্ব নিরূপণ কৰিয়া এবং চুম্বক প্রস্তুরের দ্বারা কল্পাশ অৰ্থাৎ দিক প্রদৰ্শক বন্ধ নির্মান দ্বারা মনুষ্য ক্ষুদ্র অৰ্ব পোত আৱেহণে অতি প্রচণ্ড তর সমন্ব উত্তীৰ্ণ হইয়া পৃথিবীত মানা দেশ বিদেশে গমনানন্দের অনায়াসে বাণিজ্য কৰিতেছে। এই প্রকার সকল দেশের জ্ঞানুক্তি হইতেছে। যে দেশে যাহা মা জম্বে তাহা অনায়াসে ভিন্ন দেশ হইতে প্রাপ্ত হওয়া যায়। এবং কোন দেশের আচার ও ব্যবহারে অসভ্যতা থাকিলে তাহা সভ্য দেশীয় সভ্যের সহবাস এবং তাহারদিগের সহিত সদালাপ দ্বারা শীঘ্ৰ নিরাকৰণ হয়।

পুরুষকালে পুনৰুক্ত অভাবে অনেক লোক বিদ্যা এবং জ্ঞান উপার্জন কৰিতে সক্ষম হইত না। এক খানি পুনৰুক্তের এতাধিক মূল্য নিষ্কারিত ছিল যে বিশেষ ধৰণাবান না হইলে তাহা ক্রয় কৰা সম্ভব হইত না। এ নিমিত্ত অনেককেই বিদ্যার আশায় জলাঞ্জলি প্রদান কৰিয়া অন্যান্য ব্যবসা অবলম্বন কৰিতে হইয়াছিল। কিন্তু পরমেশ্বরানুকল্পাতে ছাপা বন্ধ নির্মান হইয়া এই অবস্থা দূর হইল এবং এইক্ষণে অল্প ব্যয় কৰিয়া উত্তম বহুবিধ গৃহ সংকলন পুরুষক কিঞ্চিৎ কাহিক ও মানসিক পরিশ্ৰম স্বীকার কৰিলে বিদ্যা লাভ কৰা সহজ বটে। পদাৰ্থ বিদ্যার অনুশীলন না হইলে ছাপা বন্ধ নির্মান সম্ভাবনা ছিলনা।

পদাৰ্থ শাস্ত্র অনুশীলনে জ্যোতিঃবিদ্যার ও বহু উপকারু দৰ্শিয়াছে। পুরুষতন মত সমূহ বিজ্ঞাবিত হইয়া নৃতন বিশুদ্ধ

মত পুচার হইয়াছে। দূরবীক্ষণ যন্ত্র দ্বারা অভোমণ্ডলের তাবৎ বৃক্ষান্ত নিঃসৎ শয়ে অবগত হওয়া গিয়াছে।

চন্দ্র ও সূর্য গুহণের কারণ চঙালের গুমেছা না বলিয়া যথার্থ যে ছায়া পতন তাহাই নির্ণয় হইয়াছে।

ঔষধ বিদ্যার ও বৃক্ষ হইয়াছে। বন্ধুর যথার্থ শুণ ও স্বভাব জানিতে পারিলে অনায়াসে রোগ দূর হইতে পারে। এইঙ্গন পর্যন্ত ও পৃথিবী রোগ শোক ও নানা বিধি ক্লেশের আধুন্য হইয়া রহিয়াছে। ইহার মূল কারণ এই যে মানবেরা সম্যক্রূপে বন্ধুর প্রাকৃতিক অবস্থা নির্ণয় করিতে পারে নাই এবং বায় বন্ধুর সহিত যে মানব প্রকৃতির সমন্বন্ধ আছে তাহা তাহার দিগের অগোচর। কিন্তু যৎকালীন পদার্থ বিদ্যার সম্যক উন্নতি হইবে তখন মনুষ্যেরা কুসৎসার হইতে ত্রাণ পাইয়া পদার্থের স্বধর্ম অবগত হইতে পারিবে এবং তৎকালীন ব্যয় হইলে দেব দেবীর নিকট ছাগ ও মহিষাদি প্রদান করিতে মানসিক না করিয়া বরং বৈদ্যকেই আঙুন করিবে। অনেক কবিরাজ মহাশয়েরা জর রোগ হইলে মারিডয়ের ঔষধ দিয়া থাকেন ইহার কারণ এই যে তাহারা পদার্থের শুণ বিষয়ে একেবারে জ্ঞান শূন্য, এতদ্বিষয় কৃষিকর্মেরও অনেক উপকার হইয়াছে যাহা বিশেষ বর্ণনা করা কেবল বাহ্ল্য মাত্র এই পুকার ইহা স্পষ্ট প্রতীত হয় যে পদার্থ বিদ্যার অনুশীলন দ্বারা পৃথিবীতে মহোপকার হইয়াছে এবং মনুষ্যের সুখ সহসুৎ পুকার সমৃদ্ধি হইয়াছে।

শ্রীকালীচরণ চট্টোপাধ্যায়।

CALLEY CHURN CHATTERJEE, *Dacca College.*  
*Second College Class, First Year.*





SCHOLARSHIP EXAMINATIONS

OF

1853-54.





# **SCHOLARSHIP EXAMINATIONS**

**OF THE**

**GOVERNMENT COLLEGES AND SCHOOLS**

**IN**

**BENGAL,**

**FOR**

**1853-54.**



**CALCUTTA:**

**THOS. JONES, CALCUTTA GAZETTE OFFICE.**

**1854.**



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## PUBLIC EXAMINATIONS OF 1853-54.

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I. The examination of the pupils of the Hindu College for Senior and Junior English Scholarships ; of the pupils of the Howrah, Ooterparah, and Baraset Schools for Junior Scholarships ; and of candidates for insertion in the lists directed to be furnished by the Council of Education, in accordance with the Resolution of October 10th, 1844, will be held in the Town Hall, upon the dates and at the hours specified below :

### DATES.

### SUBJECTS.

*Senior Scholarships.*                           *Junior Scholarships.*

|           |               |                                                |               |
|-----------|---------------|------------------------------------------------|---------------|
| Saturday  | April 1st, .. | Literature Proper,.....                        | Grammar.      |
| Monday    | „ 3rd,..      | Moral Philosophy & Political Economy, History. |               |
| Tuesday   | „ 4th,..      | History,.....                                  | Mathematics.  |
| Wednesday | „ 5th,..      | Pure Mathematics,.....                         | Geography.    |
| Thursday  | „ 6th,..      | Mixed Mathematics,.....                        | Translations. |
| Friday    | „ 7th,..      | English Essay,.....                            | Literature.   |
| Saturday  | „ 8th,..      | Translations,.....                             | Viva Voce.    |

The examinations will be held daily from 10 A. M. to 1½ P. M., and from 2 P. M. to 5½ P. M. precisely, at which hours all answers to the morning and afternoon papers, respectively, must be given in. Candidates are recommended to be in attendance a quarter of an hour earlier than the beginning of each examination, in order that no time may be lost in taking their places.

II. The subjects for the Essays will be set, and the papers of questions will be prepared, in strict accordance with the scholarship rules, by the gentlemen whose names are appended to each.

## English Scholarships.

### *Senior.*

|                                         |                            |
|-----------------------------------------|----------------------------|
| English Essay, .....                    | W. Grapell, Esq., M. A.    |
| Political Economy & Moral Philosophy, . | R. Thwaytes, Esq., B. A.   |
| Literature Proper, .....                | W. Grapell, Esq., M. A.    |
| History, .....                          | James Graves, Esq., M. A.  |
| Pure and Mixed Mathematics, .....       | J. Sutcliffe, Esq., B. A.  |
| Vernacular Translations, .....          | The Revd. K. M. Bannerjee. |
| Latin Essay, .....                      | J. Sutcliffe, Esq., B. A.  |

*Junior.*

The questions for Junior Scholarships will be set and the answers examined by the officers of the different Colleges for their own Institutions, in strict accordance with the existing standards and rules on the subject.

The Local Committees will perform the same duty for the respective Zillah Schools over which they preside.

**Arabic Scholarships.**

|                                  |                         |               |
|----------------------------------|-------------------------|---------------|
| <b>CALCUTTA MUDRISSA</b> , ..... | { Senior and<br>Junior, | Dr. Sprenger. |
| <b>HOOGHLY MUDRISSA</b> , .....  |                         |               |
|                                  | { Senior and<br>Junior. | Dr. Sprenger. |
|                                  |                         |               |

III. The following subjects were selected in 1852 as the standard in Literature, History, Pure and Mixed Mathematics, from which the examination papers of the present year will be prepared :

**Senior Scholarships.****FIRST CLASS.****LITERATURE.**

*Prose*.—Bacon's Essays.

*Poetry*.—Shakspeare's Henry the 8th.

The first two Books of Milton's Paradise Lost, as in Richardson's Selections.

*History*.—The first three Chapters of Macaulay's History of England.

*Moral Philosophy*.—Smith's Moral Sentiments.

*Political Economy*.—Smith's Wealth of Nations, Vol. 1.

**MATHEMATICS.**

Differential and Integral Calculus.

Optics, (as in Potter.)

Spherical Trigonometry and Astronomy, (as in Brinkley.)

**2ND CLASS.****LITERATURE.**

Same as first Class, with the exception of Smith's Wealth of Nations.

**MATHEMATICS.**

Newton, (Sections I., II. and III.)

Elements of Differential Calculus.

Hydrostatics, (as in Webster.)

**3RD CLASS.****LITERATURE.**

*Prose*.—Bacon's Essays.

*Poetry*.—Childe Harold, Canto 3rd, as in Richardson's Selections.

*Moral Philosophy*.—Smith's Moral Sentiments.

*History*.—The first three Chapters of Macaulay's History of England.

## MATHEMATICS.

*Analytical Conic Sections.*  
*Mechanics, (as in Potter or Snowball.)*

## 4TH CLASS.

## LITERATURE.

*Prose.*—Addison's Spectator from the end of the Criticism on Milton,  
 (Calcutta Edition.)

*Poetry.*—Akenside and Johnson, as in Richardson's Selections.

*History.*—Keightley's History of England, Vol. II.

## MATHEMATICS.

*Euclid, Algebra, Plane Trigonometry.*

## VERNACULAR.

All candidates for Senior English Scholarships will be required to translate into their Vernacular tongue, two moderately difficult passages, one in prose, the other in verse, from some classical English author; to translate a very difficult passage from the Vernacular into English; and to answer searching questions in Vernacular Etymology and Syntax, as well as exhibit an intimate acquaintance with the Grammar of his own language.

## Junior Scholarships.

## LITERATURE.

*Prose.*—Selections from Goldsmith's Essays, (Calcutta Edition.)

*Poetry.*—Selections from Pope, Prior and Akenside, Poetical Reader,  
 No. 3, Part 2nd, (last Edition.)

*History.*—Keightley's History of England, Vol. I.

*Grammar.*—Crombie, Part II.

*Geography and Map Drawing.*

## MATHEMATICS.

*Euclid, Books VI. and XI.*

*Algebra, to the end of Simple Equations, Arithmetic.*

## VERNACULAR.

The text-books are in Bengali, the Punchabinshati and Tutwa Bodhenee Putrika; in Urdu, the Bagh-o-Bahar and Khrud Afroz; in Hindi, the Betal Pacheesee and Marshman's History of India; and in Oorya, the Readers and Elements of Natural Philosophy, published by the Calcutta School Book Society.

The candidate must also be able to translate into the Vernacular, such passages from English authors, as may be selected.

**Supplementary Course**  
**OF**  
*Study for the five months preceding the*  
**EXAMINATIONS OF THE PRESENT SESSION.**

**Senior Scholarships.**

**FIRST CLASS.**

**LITERATURE.**

*Prose.*—Bacon's *Novum Organum*.

*Poetry.*—Shakespear's *Tempest*.

Dryden's *Absalom and Achitophel*; and so much of Young's Poems as are contained in Richardson's Selections.

*History.*—Robertson's Introduction to the History of Charles V.

*Political Economy.*—Smith's *Wealth of Nations*, Books 2nd and 3rd.

**SCIENCE**

Herschell's Introduction to the Study of Natural Philosophy, Parts 1st and 2nd.

**SECOND CLASS.**

The same with the exception of Political Economy.

**THIRD CLASS.**

*Prose.*—The same as 1st and 2nd Classes.

*Poetry.*—Gray's Poems as contained in Richardson's Selections.

*History.*—As in the 1st and 2nd Classes.

**FOURTH CLASS.**

*Prose.*—The Spectator, from the beginning to the Criticism on Milton.

*Poetry.*—Cowper's Poems, as in Richardson's Selections.

*History.*—Keightley's *England*, Vol. I.—The Tudor Reigns.

**Junior Scholarships.**

*Prose.*—*Moral Tales*—*Encyclopedia Bengalensis*, No. X.

*Poetry.*—*Poetical Reader*, Part I., No. 3 (Calcutta Edition.)

Crombie's *Etymology and Syntax*, Part I.

IV. The Senior Scholarship answers will be examined by the gentlemen who set the questions; the Junior Scholarship answers will be examined by the officers of the respective Colleges; those of the branch Schools will be examined by the officers of the Colleges to which the Schools are attached; and those of Zillah Schools will be examined by the Local Committees presiding over them.

The Arabic scholarship answers will be examined by Dr. Sprenger.

All reports of the results of the examinations are to be furnished before the end of the long vacation.

V. The following "Rules for the examination of candidates for insertion in the list directed to be annually furnished to Government, by the Notification of the Governor General, dated 10th October 1844," are re-published for general information.

1. No one shall be allowed to become a candidate for insertion in the annual returns, who is less than 18 or more than 20 years of age, and who is not at the time a student either of a Government College or of a private Institution recognized by the Council of Education. All competitors must likewise produce satisfactory proofs of good moral character.

2. Every candidate, whether he belong to a Government College or a private Institution, shall be required to undergo the usual annual examination for Senior English Scholarships, a Latin Essay being substituted for translations, at the option of each candidate.

3. There shall be two classes of merit : the first shall comprehend all who are in the last year of a Senior Scholarship, or who, though not actually in the last year, would be so, if there had been a vacant scholarship at the time when they first became eligible for one ; or have been engaged for ten years in the study of English at a private institution, and who obtain at least three-fourths of the number of marks allowed in each subject. The second class shall include all other candidates, who obtain at least half of the number of marks allowed for complete answers in each subject contained in the Senior English Scholarship standard.

4. The place of each successful competitor in his class shall be determined by the relative merit of his examination.

5. Every candidate for insertion in the Council's list shall pay a registration fee of Co.'s Rs. 5, prior to being allowed to compete at the examination.

6. A student who shall fail to prove himself qualified for insertion in the Council's list, shall not be permitted to present himself for examination more than three times, pre-paying on each occasion the usual registration fee.

7. A candidate whose name shall once have appeared in the return, shall not be allowed to compete again with a view to obtain a higher class.

8. All candidates, whether from Government or private institutions, must distinctly understand, that insertion in the returns will by no means be a sure passport to employment, since the preference must depend upon other qualifications, as well as upon literary and scientific acquirements and good moral conduct.

9. The following is the system of examination adopted :

Sets of questions in the various branches of study will be prepared under the direction of the Council of Education, who will likewise fix, within a reasonable time beforehand, the days on which the examinations shall be held.

The students shall be assembled in a room without books, papers, or references of any kind. They shall not be allowed to communicate with each other during the examination, and on that account shall be placed at a proper distance from each other.

They will be required to answer the questions and to write the Essays without any assistance whatever, and to ensure this, one of the Members of the Council of Education will remain in the room and superintend the whole examination.

Any attempt at, or practice of, unfair means, shall subject the offender to exclusion from the examination, as well as from the returns of the Council, and will be deemed to render him ineligible for Government employment.

The Examiners will fix an uniform standard of value for each question according to its importance ; a perfectly correct and complete answer will obtain the full number of marks attached to the question, an imperfect answer will obtain a part only of the full number, in proportion to approximation to correctness and completeness. At least 50 per cent. of the aggregate number

of marks attached to an entire set of examination questions, will be necessary to entitle a student to a Senior Scholarship.

VI. The scholarship questions with the most distinguished answers in English Literature, History, and the best Essays, will be published for general information and distribution, as soon as practicable after the receipt of the reports.

Very distinguished answers from out-candidates will also be published.

With a view to facilitate the classification and examination of answers in each subject, all candidates are directed to write their answers on one side of the paper only, and to answer no more than one question on any piece of paper.

Performances not executed in conformity with the above rule will not be examined.

(By order of the Hon'ble the President and Council of Education.)

FRED. J. MOUAT, M. D.,

COUNCIL OF EDUCATION, }  
January 31, 1854. }

*Secretary.*

# SCHOLARSHIP QUESTIONS.

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## SENIOR SCHOLARSHIPS, 1854.

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### Literature Proper.

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*Saturday, April 1st—Morning Paper.*

#### FIRST AND SECOND CLASSES.

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#### SHAKSPEARE :—THE TEMPEST.

1. With what other Play of Shakspeare has the Tempest been compared? State very briefly the points of similarity.

2. Explain accurately the meaning of the following passages; and state what other readings have been proposed:—

(a) Thy turfy mountains, where live nibbling sheep

And flat meads thatched with stover them to keep ;  
Thy banks with pioned and twilled brims,  
Which spongy April at thy hest betrims,  
To make cold nymphs chaste crowns ; and thy broom groves  
Whose shadow the dismissed bachelor loves  
Being lass lorn.

(b) And for the rest o' the fleet

Which I dispers'd, they all have met again  
And are upon the Mediterranean flote  
Bound sadly home for Naples.

(c) I forget

But these sweet thoughts do even refresh my labours  
Most busy least when I do it.

3. What are the "Dramatic Unities" laid down by Aristotle? Show clearly how far they were attended to by Shakspeare

in composing the *Tempest*. Mention instances of other plays, in which he openly rejected them.

4. Explain etymologically the following words :—*corollary* ; *to trash* ; *a stale* ; *impediment* ; *to canker* ; *teen* ; *patch* ; *to deck* ; *ditty* ; *welkin* ; *sincere*.

5. Paraphrase the following passages, and explain the full force of the words printed in italics :—

(d) *As wicked dew as e'er my mother brush'd  
With raven's feather from unwholesome fen  
Drop on you both.*

(e) *I  
Have given you here a *thread* of my own life  
Or that for which I live.*

(f) *Seb.—But, for your conscience,—*

*Ant.—Ay Sir ; where lies that ; if 'twere a *kybe*,  
'Twould put me to my *slipper* ; But I feel not  
This deity in my bosom ; twenty consciences  
That stand 'twixt me and Milan, *candied be they*,  
*And melt, ere they molest.**

6. True beauty dwells in deep retreats,  
Whose veil is unremoved,  
Till heart with heart in concord beats,  
And the lover is beloved.

Apply these lines of Wordsworth to a brief discussion of the character of Miranda.

7. Our revels now are ended ; these our actors  
As I foretold you, were all spirits, and  
Are melted into air, thin air :  
And, like the baseless fabric of this vision,  
The cloud-capp'd towers, the gorgeous palaces,  
The solemn temples, the great globe itself,  
Yea, all which it inherit, shall dissolve ;  
And, like this unsubstantial pageant faded,  
Leave not a rack behind : *We are such stuff  
As dreams are made on, and our little life  
Is rounded with a sleep.*

(g) Paraphrase very carefully this passage.  
 (h) What objections have been to the word "rack"? Quote a sentence in which Bacon uses the word in the like sense.  
 (i) Explain shortly the full force of the sentence printed in italics.

8. Thy dukedom I resign ; and do *entreat*  
 Thou pardon my wrongs.

What is here the force of "do"? In what mood is "*entreat*"? — and how from analogy do you prove the truth of your assertion?

9. *Pros.*—Ye elves of hills, brooks, standing lakes and groves ;  
 And ye that on the sands with printless foot  
 Do chase the ebbing Neptune, and do fly him  
 When he comes back ; you demi-puppets that  
 By moonshine do the green sour ringlets make  
 Whereof the ewe not bites.

Render this accurately in plain prose.

What is the popular belief with reference to the "fairy-ringlets" here alluded to?

For 'green sour,' many Editors have read 'green-sour,' and the manuscript correction in Mr. Collier's folio is 'greneward.'

State which reading you prefer, and give clearly the reasons which influence your choice.

#### DRYDEN : ABSALOM AND ACHITOPHEL.

10. A man so various that he seem'd to be  
 Not one, but all mankind's epitome ;  
 Stiff in opinions, always in the wrong ;  
 Was every thing by starts and nothing long ;  
 But in the course of one revolving moon,  
 Was chymist, fiddler, statesman and buffoon.

Who is here alluded to? State very shortly the leading features of his career. Quote Pope's lines on his death.

Why was Dryden especially bitter against him?

11. Who was Titus Oates, and under what name does Dryden introduce him?

12. Great wits are sure to madness near allied,  
 And thin partitions do their bounds divide ;  
 Else why should he, with wealth and honor blest,  
 Refuse his age the needful hours of rest ?  
 Punish a body which he could not please,  
 Bankrupt of life, yet prodigal of ease ?

Paraphrase accurately this passage.

To whom is reference here made ?

13. Explain accurately the meaning of the clauses, or words which in the following passages are printed in italics :—

- (k) To compass this *the triple bond* he broke ;  
 The pillars of the public safety shook.
- (l) Such were the tools ; but a whole *Hydra* more  
 Remains of sprouting heads too long to score.
- (m) His long chin proved his wit ; *his saint-like grace*  
*A church-vermilion, and a Moses' face.*
- (n) Few words he said ; but easy those and fit,  
 More slow than *Hybla-drops*, and far more sweet.

14. Whateley says that *Metaphor* and *Simile* differ only in form ; the Resemblance, or Analogy, being in the latter *stated*, and in the former *implied*.

Adopting this definition, state whether in the following lines there is pure Metaphor ; pure Simile ; or a mixture of both,— pointing out those words which, in your judgment, constitute either one or the other.

Heaven has to all allotted, soon or late,  
 Some lucky revolution of their fate :  
 Whose motions if we watch with skill,  
 (For human good depends on human will,)  
 Our fortune rolls as from a smooth descent  
 And from the first impression takes the bent ;  
 But if unseized she glides away like wind  
 And leaves repenting folly far behind.

## THIRD CLASS.

BYRON, CHILDE HAROLD.—*Canto 3rd.*

1. State very briefly what you conceive to be the peculiar characteristics of Lord Byron's style.

2. —— Above me are the Alps,  
 The palaces of nature, whose vast walls  
 Have pinnacled in clouds their snowy scalps,  
 And throned Eternity in icy halls  
 Of cold sublimity, where forms and falls  
 The avalanche—the thunderbolt of snow !  
 All that expands the spirit, yet appals,  
 Gather around these summits, as to show

How Earth may pierce to Heaven, yet leave vain man below.  
 Give a very accurate paraphrase of these lines.

3. —All that most endears  
 Glory is when the myrtle wreathes a sword  
 Such as Harmodius drew on Athens' tyrant.

Explain fully the historical allusion.

4. Whateley, in his definitions of Poetry and Prose, says, that Poetry is “elegant and decorated language in metre, *expressing* such and such thoughts ;” and Prose—“such and such thoughts *expressed* in good language.”

Explain fully the force of the distinction here shadowed forth.

5. Italia ! too, Italia ! looking on thee,  
 Full flashes on the soul the light of ages,  
 Since the fierce Carthaginian almost won thee  
 To the last halo of the chiefs and sages  
 Who glorify thy consecrated pages.

What great victory did Hannibal gain in Italy itself ?

Give a rapid sketch of the career of Hannibal after that victory was won.

6. Thy tide washed down the blood of yesterday  
 And all was stainless, and on thy clear stream  
 Glass'd with its dancing light the sunny ray ;  
 But o'er the blackened Memory's blighting dream  
 Thy waves would vainly roll, all sweeping as they seem.

Give an accurate prose rendering of these lines.

7. (a) Either you or I *are* in fault.  
 (b) Either you or I *is* in fault.  
 (c) Neither you nor I *are* in fault.  
 (d) Neither you nor I *is* in fault.

State which of these four expressions are logically correct ; and give clearly the reasons for your statement.

8. Where did Lord Byron die ? And in what political work was he then heartily engaged ?

#### BACON: ESSAYS.

9. Who was Lord Bacon's early patron and what was his fate ?

10. Distinguish as shortly as possible between Simulation and Dissimulation.

11. "Envy is as the sun-beams that beam hotter upon a bank, or steep rising ground, than upon a flat."

Show the full force of this observation.

12. Give the etymological meaning of the following words :— *trivial*, *scandal*, *forwardness*, *anathema*, *error*, *impediment*, *libel*, *virtue*, *sycophant*, *superstition*, *wit*.

13. " *Misanthropy* that make it their practice to bring men to the bough, and yet *have never a tree for the purpose of their gardens as Timon had* ; such disparities are the very errors of human nature ; and yet they are the fittest timber to make great *politics* of; like to *knee-timber*, that is good for ships that are ordained to be tossed, but not for building houses that shall stand firm."

Paraphrase this passage : and afterwards explain accurately the meaning of the words, and clause in italics.

14. Bacon says a great remedy of sedition is to remove want and poverty in the State ; and that for this purpose *sumptuary laws* are of great avail.

State clearly what is to be understood by this term ; and enumerate several of such laws which have, at various times, had force in England.

15. "To be master of the Sea is an *abridgment* of a monarchy. \* \* \* We see the great effects of battles by Sea : the battle of *Actium* decided the empire of the world ; the battle of *Lepanto* arrested the progress of the Turks. There be many examples where Sea-fights have been final to the war ; but this is when princes or states have *set up their rest* upon the battles."

- (a) Explain the above use of " *abridgment*."
- (b) Who were the commanders of the opposite fleets at *Actium* ?
- (c) When was fought the battle of *Lepanto* ? Give the name of the leader of the victorious armament.
- (d) " *Set up their rest*"—explain clearly this expression.

16. Give a brief analysis of Bacon's Essay " *On Studies*."

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#### FOURTH CLASS.

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##### COWPER : POEMS.

1. Praise enough

To fill th' ambition of a private man  
That *Chatham's* language was his mother tongue  
And *Wolfe's* great name compatriot with his own.

Give very shortly, the particulars of the deaths of these great men respectively.

2. The cattle mourn in corners ; where the fence  
Screens them ; and seem half *petrified* to sleep  
In *unrecumbent* sadness. There they wait  
Their wonted *fodder* ; not like hungering man  
Fretful if unsupplied ; but silent, meek,  
And patient of the slow-paced swain's delay.

(a) Give a paraphrase of these lines ; observing accurately the etymological meanings of the words printed in *italics*.  
 (b) What other English poet has given a similar description ?  
 3. State shortly, in plain prose, the distinction which Cowper draws between " *Knowledge* " and " *Wisdom* ."

4. The lapse of Time and Rivers is the same,  
 Both speed their journey with a restless stream ;  
 The silent pace with which they steal away  
 No wealth can bribe, no prayers persuade to stay :  
 Alike irrevocable both when pass'd,  
 And a wide Ocean swallows both at last.  
 Though each resembles each in every part,  
 A difference strikes at length the musing heart ;  
 Streams never flow in vain ; where streams abound  
 How laughs the land with various plenty crown'd !  
 But Time that should enrich the nobler Mind  
 Neglected leaves a dreary waste behind.

Paraphrase this passage.

5. Enumerate in as few sentences as may be, the points wherein Cowper's poetry differs from that of Pope and his imitators. What great Master of later years has carried Cowper's principles of Art more fully out ?

6. Where men of judgment creep and feel their way  
 The positive pronounce without dismay ;  
 Their want of light and intellect supplied  
 By sparks, absurdity strikes out of pride.

Quote, if you can, a parallel passage in the works of another poet.

7. But me, scarce hoping to attain that rest—  
 Always from port withheld, always distress'd,—  
 Me, howling blasts drive devious, tempest-toss'd,  
 Sails ripp'd, seams opening wide, and compass lost ;  
 And day by day some current's thwarting force  
 Sets me more distant from a prosp'rous course.

Give a very accurate prose rendering of this passage.

## ADDISON: SPECTATOR.

8. "The English writers of Tragedy are possessed with a notion that when they represent a virtuous or innocent person in distress they ought not to leave him till they have delivered him out of his troubles, or made him triumph over his enemies."

What are Addison's arguments in confutation of this notion?

9. Give a sketch of the main-plot, or narrative which connects the various Essays in the Spectator. What becomes ultimately of the old Knight? And what reason is Addison said to have assigned for such a termination?

10. "The old song of Chevy Chase is the favorite ballad of the common people of England, and Ben Jonson used to say that he had rather have been the author of it than of all his works. Sir Philip Sidney, in his discourse of Poetry, speaks of it in the following words:—‘ I never heard the old song of Percy and Douglas, that I found not my heart more moved than with a trumpet; and yet it is sung by *some blind Crowder with no rougher voice than rude style*: which being so evil apparelled in the dust and cobweb of that uncivil age, what would it work trimmed in the gorgeous eloquence of Pindar ! ’"

(c) Explain accurately the meaning of the clause printed in italics.

(d) When did Ben Jonson flourish? And what are the leading characteristics of his works?

(e) Narrate the circumstances of Sir Philip Sidney's death.

11. How does Addison distinguish "Discretion" and "Cunning"?

12. Explain the meaning of the following words: *allegory, satire, lampoon, paradox*.

13. "Such a history as that of Suetonius, which gives a succession of absolute princes, is to me an unanswerable argument against despotic power."

Give the several objections on which this argument of Addison is based.

14. State accurately the difference between "mirth" and "cheerfulness;" and give Addison's reasons for preferring the latter.

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*Saturday, April 1st—Afternoon Paper.*

FIRST AND SECOND CLASSES.

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SHAKSPEARE: HENRY VIII.

1.

Fairly answer'd  
A loyal and obedient subject is  
Herein illustrated: The honour of it  
Does pay the act of it; as i' the contrary  
The foulness is the punishment.

Paraphrase, accurately, these lines.

2. Give the etymological meanings of the following words: *cardinal*; *conclave*; *consistory*; *clinguant*; *paragon*; *truant*; *sincere*.

3. (a)

He makes up the file  
Of all the gentry; for the most part such  
To whom as great a charge as little honour  
He meant to lay upon; and his own letter  
(The honourable Board of Council out)  
Must bring him in he papers.

(b) — I am the shadow of poor Buckingham,

Whose figure even this instant cloud puts on  
By dark'ning my clear sun.

(c) Not friended by his wish, to your high person  
His will is most malignant.

Explain fully the meaning, and construction of these passages.

4. Was Sir Thomas More the "Lord Chancellor" really in office at the coronation of Anne Boleyn?

Give a very brief sketch of his life and character.

5.

I do profess

That for your Highness' good I ever labour'd  
 More than mine own ; that *am, have, and will be.*

For the words in italics what others have been proposed ?  
 Defend the original reading ; explain it grammatically and adduce,  
 if possible, any similar constructions from Shakspeare or from the  
 works of any other author.

6.

He was a man

Of an unbounded stomach ; ever ranking  
 Himself with princes ; one that *by suggestion*  
*Tied all the Kingdom ; Simony* was fair play ;  
 His own opinion was his law ; i' the Presence  
 He would say untruth ; and be ever double  
 Both in his words and meaning ; he was never,  
 But when he meant to ruin, pitiful ;  
 His promises were, as he then was, mighty ;  
 But his performance, as he is now, nothing.

Paraphrase this passage : taking especial care to convey the  
 full force and meaning of the words printed in italics.

7. " *Collars of SS.*" Who were originally entitled to wear  
 these collars ? Who wear them now ? Explain, if you can,  
 the meaning of the name " *SS.*"

8.

He was most princely ; ever witness for him  
 Those twins of learning ; that he rais'd in you  
 Ipswich and Oxford ! One of which fell with him,  
 Unwilling to outlive the good that did it ;  
 The other, though unfinish'd, yet so famous,  
 So excellent in art, and still so rising  
 That Christendom shall ever speak his virtue.

Explain fully the allusions : is there here a double meaning in  
 the word " Christendom " ?

9. Show by a genealogical table the exact degree of relationship  
 in which Katharine of Arragon stood to Charles V.

## MILTON : PARADISE LOST.

10. In what metre is this poem composed ? Explain the following metrical expressions ; *Alexandrines* ; *Service-Metre* ; *Ele-  
giacs* ; *Riding Rhyme* ; *Spenserian Stanza*.

11. Millions of spirits for his fault amerc'd  
Of Heaven, and from eternal splendours flung  
For his revolt ; yet faithful how they stood,  
Their glory wither'd ; as when heaven's fire  
Hath scathed the forest oaks, or mountain pines,  
With singed top their stately growth, though bare,  
Stands on the blasted heath.

(a) Paraphrase this passage.

(b) Quote the lines in which Shakspeare uses the expression  
"blasted heath."

12. What political office did Milton hold during the Protectorate ?

13. As at the Olympian games, or Pythian fields  
Part curb their fiery steeds, or shun the goal  
With rapid wheels, or fronted brigade form.

Explain the allusions ; how frequently were the Olympian games celebrated ?

## YOUNG.

14. State in as few words as possible, what you conceive to be the peculiar characteristics of Young's style.

15. Here to Steel's humour makes a bold pretence  
There bolder aims at Pulteney's eloquence.

Who was Pulteney ? Give a rapid sketch of his political career.

## THIRD CLASS.

## GRAY.

1. Oh ! Sovereign of the willing Soul  
 Parent of sweet and solemn-breathing airs  
 Enchanting shell ! The sullen cares  
 And frantic passions hear thy soft control.  
 On Thracia's hills the Lord of War  
 Has curb'd the fury of his car,  
 And dropp'd his thirsty lance at thy command.  
 Perching on the sceptred hand  
 Of Jove, thy magic lulls the feather'd king  
 With ruffed plumes and flagging wing :  
 Quench'd in dark clouds of slumber lie  
 The terror of his beak, and lightnings of his eye.

(a) Give an accurate prose rendering of this passage.  
 (b) Explain fully the Mythological allusions.  
 2. She-wolf of France, with unrelenting fangs  
 Thou tear'st the bowels of thy mangled mate,  
 From thee be born, who o'er thy country hangs  
 The scourge of heaven.  
 (c) Who is the "she-wolf of France" ? Who her "mangled mate" ? And who "the scourge of heaven" ?  
 3. Give the exact meanings of the following words : *mad-ding* ; *havock* ; *curfew* ; *precincts* ; *ingenious* ; *ingenuous*.

4. Edward, lo ! to sudden fate  
 (Weave we the woof, the thread is spun)  
*Half of thy heart* we consecrate.

Who is here alluded to ? How did Edward express his sorrow when this prophecy was fulfilled ?

5. (d) Then ask not bodies doom'd to die  
 To what abode they go,  
 Since knowledge is but Sorrow's spy  
 'Tis better not to know,

*Sir W. Davenant.*

(e) She dwelt among the untrodden ways,  
 Besides the springs of Dove,  
 A Maid when there were none to praise  
 And very few to love.  
 A violet by a mossy stone  
 Half hidden from the eye,  
 Fair as a star when only one  
 Is shining in the sky.

*Wordsworth.*

How like a younker or a prodigal  
 The scarf'd bark puts from her native bay,  
 Hugg'd and embraced by the strumpet wind !  
 How like a prodigal doth she return ;  
 With over weather'd ribs, and ragged sails,—  
 Lean, rent, and beggar'd by the strumpet wind !

*Shakespeare, Merch. of Ven.*

Quote from Gray's Poems, three passages strictly parallel to the three above given.

5. Alike to all, the kind impartial heav'n  
 The sparks of truth and happiness has given ;  
 With sense to feel, with memory to retain,  
 They follow pleasure, and they fly from pain ;  
 Their judgement mends the plan their fancy draws,  
 The event pressages, and explores the cause :  
 The soft returns of gratitude they know,  
 By fraud elude, by force repel the foe ;  
 While mutual wishes, mutual woes endear,  
 The social smile and sympathetic tear.

Paraphrase accurately this passage.

#### BACON: NOVUM ORGANUM.

6. State clearly what you understand by the word "Idol" as used by Bacon.

7. "Heraclitus saith, 'men seek the sciences in the lesser worlds and not in the great and common one'—of which kind of "Idol" is this an example ?

8. Explain what Bacon means by "the anticipation of nature"?
9. Bacon says, "the common Logic is better fitted to fix and establish errors which are founded in vulgar notions than for searching after truth." Whateley declares it as his belief that if Bacon had lived in the present day "he would have made his chief complaint against unmethodized inquiry and illogical reasoning."
- Shew, from a consideration of the expression "*common Logic*," that Whateley's assertion is sound and legitimate.
10. Give Bacon's answer to the objection that "the arts and sciences may be wrested, and turned to evil purposes."

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#### FOURTH CLASS.

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#### JOHNSON.

1. Once more, Democritus, arise on Earth,  
With cheerful wisdom, and instructive mirth ;  
See motley life in modern trappings dress'd  
And feed with varied fools th' eternal jest.  
Thou who could'st laugh where want enchain'd caprice,  
Toil crush'd conceit, and man was of a piece,  
Where wealth unlov'd without a mourner died  
And scarce a sycophant was fed by pride.
- (a) Accurately paraphrase this passage.  
(b) Explain fully the allusion to Democritus.
2. State as shortly as possible what you conceive to be the peculiar characteristics of Dr. Johnson's style, as well Prose as Verse.
3. In full-blown dignity, see Wolsey stand,  
Law in his voice, and fortune in his hand.
- (c) Why is the epithet "full-blown" applied to Wolsey ?  
(d) To what religious house did Wolsey betake himself after his fall ? and in what terms does Shakspeare make him then "reproach the faith of Kings" ?
4. Explain accurately the meaning of the following words :—  
*venal, virtue, vicissitude, palladium, adamant, libel, septennial, obsequies, obsequious.*

5. What gave great Villiers to th' assassin's knife,  
And fixed disease on Harley's closing life?  
What murder'd Wentworth, and what exil'd Hyde,  
By kings protected, and to kings allied?

(e) Give the respective titles of the four statesmen alluded to in these lines.

(f) Where, and by whom was Villiers slain?

(g) In whose reign was Wentworth condemned to death? Give very briefly the particulars of his trial and condemnation.

(h) How is the fourth line strictly applicable to Hyde?

6. Pour forth thy fervours for a healthful mind,  
Obedient passions and a Will resigned;  
For Love, which scarce collective man can fill;  
For Patience, sov'reign o'er transmitted will;  
For Faith, that panting for a happier seat  
Counts death kind nature's signal of retreat;  
These goods for man, the laws of Heav'n ordain,  
These goods he grants, who grants the power to gain;  
With these celestial Wisdom calms the mind  
And makes the happiness she does not find.

Give an accurate paraphrase of this passage.

### AKENSIDE.

7. Then with Promethean art  
Into its proper vehicle he breathes  
The fair conception...

Explain the mythological allusion.

8. By degrees the mind  
Feels her young nerves dilate: blind Emotions leave  
His bosom, and with loveliest phrenzy caught,  
From earth to heaven he rolls his eye  
From heaven to earth. Anon ten thousand shapes,  
Like spectres trooping from the wizard's call  
Flit swift before him.

Quote the lines of Shakespeare, of which the above passage is an imitation.

9. Give Akenside's definition of "Taste;" if possible in his own words.

10. Waked in the shock, the public genius rose,  
 Abash'd and keener from his long repose ;  
 Sublime in ancient pride, he raised the spear  
 Which slaves and tyrants long were wont to fear.  
 The city felt his call : from man to man,  
 From street to street, *the glorious horror ran* ;  
 Each crowded haunt was stirr'd beneath his power  
*And, murmuring, challeng'd the deciding hour.*

(a) Explain accurately the meaning of the clauses printed in italics.

(b) Who was the "Curio" of Akenside? Mr. Macaulay speaks of him as "the greatest leader of Opposition that the House of Commons had ever seen." Who was the Prime Minister whom he so earnestly opposed?

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### Political Economy.

*Monday, April 3rd—Morning Paper.*

FIRST CLASS.

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### SMITH'S WEALTH OF NATIONS.

1. What three general causes determine the relative efficiency of the labour of different nations? Shew that the efficiency of human labour practically determines the relative amount of the wealth of different nations.

2. Explain the origin and use of Money.

3. When the labouring classes are not on the Minimum of Subsistence, a rise or a fall in wages, taking place under different circumstances, may both of them either accelerate or retard the

rate of increase of the people. Prove this, and enumerate the principal circumstances which determine what shall be the actual effect on the rate of increase of any given rise or fall in wages.

4. What are the sources of Capital? Why is a low rate of profit in a nation, ordinarily an indication of great power in that nation to accumulate Capital from profits?

5. How does Adam Smith define "Rent of Land"? Explain his view of its origin and of its variations. Is his definition correct?

6. State Smith's distinction as to the relative advantages of Capital in Manufactures, Inland Trade, Foreign Trade, and Carrying Trade.

7. What are the advantages and disadvantages of a Paper Currency?

8. Explain Value. In what sense and to what extent can there be a standard or a measure of Value?

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### Moral Philosophy.

*Monday, April 3rd—Morning Paper.*

SMITH'S MORAL SENTIMENTS.

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### SECOND AND THIRD CLASSES.

1. How according to Smith do we judge of the propriety or impropriety of the affections and sentiments of other people?

2. Shew that generally we are more disposed to sympathize with passions which originate from the imagination, than those which originate from the body.

3. Shew that our sympathy with sorrow is more lively than our sympathy with joy; but that it always falls much more short of the violence of what is felt by the person principally concerned.

4. Shew that the medium through which we view the misfortunes of men of rank, influence, and wealth, is apt to excite

in us, for every calamity that befalls them, and every injury that is done them, more compassion and resentment than we would have felt had the same things happened to other men.

5. What is the difference between a love of Praise and a love of Praise-worthiness ?—Point out in what respect these two sentiments resemble each other.

6. How does Smith prove, that the pleasure experienced from unmerited applause is small compared with the pain felt by unmerited reproach ?

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*Monday, April 3rd—Afternoon Paper.*

FIRST, SECOND AND THIRD CLASSES.

1. What are the necessary conditions to be fulfilled before an action, to the impartial spectator, can be rendered the complete and proper object of gratitude or resentment ? And shew that his gratitude or resentment will always be in proportion to the fulfilment of these conditions.

2. "When we are always so much more deeply affected by whatever concerns ourselves, than by whatever concerns other men ; what is it which prompts the generous upon all occasions and the mean upon many, to sacrifice their own interests to the greater interests of others ?"

3. How does Smith prove that the general rules of morality are founded upon experience and induction, and that they may be justly regarded as the Laws of the Deity ?

4. The principles of the imagination upon which our sense of beauty or deformity depends, may easily be changed by habit, and by education ; but our sentiments of moral approbation and disapprobation, though they may be corrupted, can never be entirely perverted.

5. Shew that the standard by which different nations judge of the propriety of behaviour under all circumstances may be taken as a proper measure of their civilization.

6. Explain Aristotle's distinction of *commutative* and *distributive* justice. How is it adopted and used by Grotius? How by more modern writers?

7. What is Epicurus's doctrine concerning the nature of Virtue? In what respect is it inconsistent with that which Smith endeavours to establish? And wherein does it differ from the systems of Plato, Aristotle and Zeno?

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### History.

*Tuesday, April 4th—Morning Paper.*

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#### FIRST, SECOND, AND THIRD CLASSES.

1. In what respects may the monastic institutions of the Middle Ages be regarded as having been beneficial? Was the spiritual supremacy arrogated by the Pope at the same period productive solely of evil?

2. Show how the effects of a union of France under the Government of the Plantagenets would have been probably disastrous to England. To what circumstances did England owe her escape from it?

3. In what respect did the wars arising from the claim of Edward III. to the crown of France differ from those waged by the Plantagenets of the 12th century against the descendants of Hugh Capet? What opinion does Macaulay express regarding the policy of those latter wars?

4. Explain, according to Macaulay, the origin of the animosity of the aristocratical factions in the wars of the Roses. What social change was proceeding cotemporaneously with those wars?

5. Describe the peculiar character of the old English aristocracy, as distinguished from that of the neighbouring countries. How were the relations between the aristocracy and commonalty affected by the wars of the Roses?

6. Whence arose the change generally from the limited monarchies of the Middle Ages into absolute monarchies? What rendered the English monarchy a singular exception?

7. Why did the Puritans not offer any systematic opposition to the government of Elizabeth? In what instance did the Parliament directly oppose it, and with what result?

8. State the causes of the political and the religious schisms under James I., becoming wider than before.

9. What effect had the Irish Rebellion, under Charles I., on the state of the hostile political parties?

10. Describe the nature of the connexion formed between Charles II and Lewis XIV. With what views did Lewis enter into it? To what did Charles bind himself by the Treaty of Dover?

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#### FOURTH CLASS.

1. Relate the early history of Luther, and the circumstances which led to his becoming a reformer. What advantages have the people of India derived from the triumph of the reformed principles in England?

2. Explain the nature of the Millenary Petition; the conference to which it led, and its result.

3. Mention the causes of the battle of Prague; its result, and consequence.

4. Give an account of the trial of Sir W. Raleigh, and of his last expedition.

5. Relate James's proceedings, to gain the Infanta for his son. How did the negotiation terminate?

6. Describe the different parties that constituted the Commons, at the commencement of the reign of Charles I., and their conduct in regard to the supplies.

7. For what expedition was Buckingham preparing when assassinated? Who succeeded him in the command of it, and how did it end?

8. For how long a period did Charles I. exercise unlimited power in England, after the dissolution of his third Parliament

and what means did he resort to during that period, to raise a revenue ?

9. Relate the changes made by Charles I. in the Church of Scotland. What were the *Tables*, and the *Covenant* ?

10. What was the final demand made of Charles I. by the Long Parliament ? What reflections does Hallam make on the conduct of the Parliament in that instance ?

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*Tuesday, April 4th—Afternoon Paper.*

**FIRST, SECOND, AND THIRD CLASSES.**

1. What are the reasons for supposing that the barbarous nations, by which the Roman empire was invaded, were by no means populous ?

2. Enumerate the general causes, which led to the downfall of the Roman Empire.

3. State the effects of the Feudal System on the Arts and Sciences, on Religion, and on the character of the human mind.

4. Describe the effects of the municipal privileges on the condition of the inhabitants, on the power of the nobility, on the power of the crown, and on the increase of industry.

5. What were the effects of the revival of the Roman Law, on the administration of justice, and on the state of Society ?

6. Show how the first literary efforts of the Middle Ages were ill directed. What prevented their being more extensive ?

7. Explain the origin and nature of the Hanseatic league.

8. What influence had the marriage of Mary of Burgundy to Maximilian, on the state of Europe ?

9. What was the most important effect arising from the expedition of Charles VIII. into Italy ?

10. Describe the nature, objects, and effects of the League of Cambray.

## FOURTH CLASS.

1. Give an account of the league called the Triple Alliance.
2. Relate the particulars of the attack made by James II. on the privileges of the Universities.
3. Mention the date and particulars of the Peace of Riswick.
4. Explain the origin of the War of the Succession.
5. What was the date of the Peace of Utrecht, who were the parties concerned in it, and what were its leading articles ?
6. Relate the origin of the dispute between England and her American Colonies.
7. In what light was the French Revolution in 1789 viewed in England ? Give the substance of Mr. Burke's speech, in reference to it.
8. Explain the nature of the Armed Neutrality, of 1801 ; its consequences, and termination.
9. Give a brief account of the battle of Trafalgar. In what respect was the victory gained there, most important to England ?

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Pure Mathematics.*Wednesday, April 5th—Morning Paper.*

## FIRST CLASS.

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DIFFERENTIAL AND INTEGRAL CALCULUS.

1. Define a differential co-efficient, and differentiate the expressions  

$$\frac{1}{b \sqrt{a^2 - b^2}} \sin^{-1} \left( \frac{x \sqrt{a^2 - b^2}}{a \sqrt{x^2 + b^2}} \right), \frac{\sqrt{2ax - x^2}}{a \sqrt{a^2 - x^2}}, \frac{x}{a} e^{\frac{a}{x}}.$$
2. Find the limits of the difference between  $f(x + h)$  and the first  $n + 1$  terms of its expansion by Taylor's Theorem.
3. Prove that  $(\sin x)^{-1} = x^2 + \frac{2^2}{3.4} x^4 + \frac{2^2 \cdot 4^2}{3.4 \cdot 5.6} x^6 + \dots$
4. If  $y = z + x f(y)$ , where  $x$  and  $z$  are independent, expand  $f(y)$  in a series of ascending powers of  $x$ .

5. Show how to find the value of a fraction the numerator and denominator of which vanish for a particular value of  $x$ . Prove that the same rule applies if they become infinite.

Find the value of  $\frac{\sin^3 x}{x - \frac{1}{2} \sin 2x}$ , when  $x = 0$ .

6. Define maxima and minima values of a function, and show how they may be determined.

Ex.  $x^3 + x^2 - x + 1$ .

7. Define the circle of curvature, and find an expression for its radius at any point of a plane curve referred to rectangular co-ordinates.

The circle of curvature at any point of a parabola, except the vertex, cuts the axis at two points on opposite sides of the vertex.

8. Investigate the integrals of the following expressions :—

$$\frac{dx}{\sqrt{x^2 - a^2}}, \quad \frac{dx}{x \sqrt{x^2 - a^2}}, \quad \frac{dx}{x \sqrt{x + a}}, \quad \frac{x^3 dx}{(x - a)^2},$$

$$(a + b \cdot \sec^2 x)^{\frac{1}{2}} dx.$$

9. Trace the curve whose equation is

$$x^2(x + y) = a^2(x - y)$$

and determine whether the area included between the curve and its asymptote is finite or infinite.

### SECOND CLASS.

#### DIFFERENTIAL CALCULUS.

1. Define a differential co-efficient, and differentiate

$$\frac{1}{b \sqrt{a^2 - b^2}} \sin^{-1} \left( \frac{x \sqrt{a^2 - b^2}}{a \sqrt{x^2 + b^2}} \right), \quad \frac{\sqrt{2ax - x^2}}{a \sqrt{a^2 - x^2}}, \quad \frac{x}{a} e^{\frac{a}{x}}.$$

2. State and prove Leibnitz's Theorem.

Show that  $\frac{d^n (e^{ax} y)}{dx^n} = e^{ax} \left( a + \frac{d}{dx} \right)^n y$ .

3. Expand  $f(x + h)$  in a series of ascending powers of  $h$ , and deduce Maclaurin's Theorem.

4. Prove that  $(\sin x)^2 = x^2 + \frac{2^2}{3.4} x^4 + \frac{2^2 \cdot 4^2}{3.4.5.6} x^6 + \dots$

5. Show how to find the value of a fraction the numerator and denominator of which vanish for a particular value of  $x$ . Prove that the same rule applies if they become infinite.

Find the value of  $\frac{\sin^3 x}{x - \frac{1}{2} \sin 2x}$ , when  $x = 0$ .

6. Define maxima and minima values of a function, and show how they may be determined.

Ex.  $x^3 + x^2 - x + 1$

7. A curve will be convex or concave to the axis of  $x$  according as  $\frac{d^2y}{dx^2}$  has or has not the same sign as the ordinate.

8. Define the circle of curvature, and find an expression for its radius at any point of a plane curve referred to rectangular co-ordinates.

The circle of curvature at any point of a parabola, except the vertex, cuts the axis at two points on opposite sides of the vertex.

9. Trace the curve whose equation is

$$x^2(x+y) = a^2(x-y).$$

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### THIRD CLASS.

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#### CONIC SECTIONS.

1. Find the equation to a straight line referred to rectangular axes and explain the meaning of the constants.

2. Find the equation to a straight line which shall pass through a given point and make a given angle with a given line.

Ex. Through the point  $(0, 0)$  making an angle of  $90^\circ$  with the line  $x + y = a$ .

3. Prove the rule for transforming the axes of  $x$  and  $y$  to others inclined to them at a given angle; and show by transforming the axes through  $30^\circ$  that the equation  $a y = 3 x^2 + 2 \sqrt{3} x y + y^2$  belongs to a common parabola.

4. Find the equation to the circle when referred to any rectangular axes, the origin being a point in the circumference.

5. From a given external point two tangents are drawn to a circle, find the equation to the line joining the points of contact.

6. Trace the parabola from its equation  $y^2 = 4 a x$ .  
What does the equation,  $x^2 + 4 a y = 0$ , represent?

7. Two equal parabolas have the same focus, and their axes at right angles to each other, and a normal to one of them is perpendicular to a normal to the other : prove that the locus of the intersection of such normals is a parabola.

8. Find the polar equation to the ellipse, one of the foci being the pole, and trace the curve from the equation.  
If  $PSP'$  be any focal chord (not perpendicular to the axis) prove that  $PSP'$  is greater than the latus rectum.

9. If  $P$  be any point in an ellipse whose vertex is  $A$  and focus  $S$  : then will  $\tan PAS = (1 + e) \cot \frac{ASP}{2}$ .

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#### FOURTH CLASS.

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##### ALGEBRA.

1. Extract the square root of  

$$\frac{9}{4}x^3 - 5x^{\frac{5}{2}}y^{\frac{1}{2}} + \frac{179}{45}x^2y - 4x^{\frac{3}{2}}y^{\frac{3}{2}} + \frac{4}{25}xy^2.$$

And if  $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$  : prove that  

$$\frac{a}{b} = \frac{ma + nc + re}{mb + nd + rf}$$

2. If  $A + Bx + Cx^2$  &c.,  $= a + bx + cx^2 +$  &c., be true for all values of  $x$ , then  $A = a$ ,  $B = b$ ,  $C = c$ , &c.  
Resolve into partial fractions  $\frac{1 + x^2}{(1 - x^2)(x + 2)}$

3. If  $a$  be the first term and  $l$  the last term of an arithmetic series, whose common difference is  $d$  then the sum of  $n$  terms  $= \frac{n(l^2 - a^2)}{2(n - 1)d}$ .

Show that  $(m^2 - n^2 - 2mn)^2, (m^2 + n^2)^2$   
and  $(m^2 - n^2 + 2mn)^2$  are in arithmetic progression.

4. Prove that there are as many combinations of  $n$  things taken  $r$  together, as there are taken  $n - r$  together.
5. Assuming the binomial theorem to be true when the index is a positive integer; prove that it is true when the index is negative or fractional.

Write down the  $r^{\text{th}}$  term of  $(a^{-3} - x^{-3})^{2n}$

6. Determine all the positive integral values of  $x$  and  $y$  which satisfy the equation  $13x + 9y = 250$ .
7. Show that 144 represents a square number whatever be the radix of the scale.
8. If  $x = cy + bz, y = az + cx, z = bx + ay$ ,

Show that  $\frac{x}{\sqrt{1-a^2}} = \frac{y}{\sqrt{1-b^2}} = \frac{z}{\sqrt{1-c^2}}$  and find

the relation between  $a, b$  and  $c$ .

9. Solve the equations—

$$(1.) \quad x + \sqrt{(x-a)^2 - 4bc} = a + 2b.$$

$$(2.) \quad \left. \begin{aligned} (x+y)^{-2} - (x-y)^{-2} &= a^{-2} - b^{-2} \\ (x+y)a^{-2} + (x-y)b^{-2} &= 1. \end{aligned} \right\}$$

*Wednesday, April 5th—Afternoon Paper.*

FIRST CLASS.

DIFFERENTIAL AND INTEGRAL CALCULUS.

1. If  $u = f(y_1, y_2, \dots)$  where  $y_1, y_2, \text{ &c.}$ , are functions of  $x$ , show that  $\frac{du}{dx} = \frac{du}{dy_1} \cdot \frac{dy_1}{dx} + \frac{du}{dy_2} \cdot \frac{dy_2}{dx} + \dots$
2. Show how to transform an expression from one independent variable to another.

If  $x = \cos t$  then

$$(1-x^2) \frac{d^2y}{dx^2} - x \frac{dy}{dx} = 0 \text{ becomes } \frac{d^2y}{dt^2} = 0.$$

3. If  $u = \left\{ (c-x)(c-y)(x+y-c) \right\}^{\frac{1}{2}}$ , show that it is a maximum when  $x = y = \frac{2c}{3}$ .

4. What is the evolute of a curve?

A tangent to the evolute is a normal to the curve.

5. Show that  $-\frac{d\theta}{du}$  is the polar subtangent of a curve,  $u$  being the reciprocal of the radius vector; and that there is generally a point of inflexion when  $u + \frac{d^2u}{d\theta^2} = 0$ .

6. How may the existence of singular points in curves generally be ascertained?

Find the singular points in the curve

$$y^2 - 2xy + 2x^2 - x^3 = 0.$$

7. Integrate the expressions

$$\frac{b^3}{a^3 - x}, \quad \frac{x}{(a-x)^{\frac{3}{2}}(a+x)^{\frac{5}{2}}}, \quad e^{ax} \cdot (\sin x)^2.$$

8. Determine the volume of the solid generated by the revolution of the curve  $(x^2 + y^2)^2 = a^2 x^2 + b^2 y^2$  about the axis of  $x$ ,  $a$  being greater than  $b$ . And show what the result becomes when  $a = b$ .

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### SECOND CLASS.

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#### DIFFERENTIAL CALCULUS.

1. Show how to transform an expression from one independent variable to another. Transform the expression  $\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^2$  into one in which  $y$  is the independent variable.
2. Determine the position of the two lines drawn from the

centre of an ellipse to the circumference at right angles to one another, the product of which is greatest.

3. If  $f(x, y) = 0$  where  $y$  is a function of  $x$ , find the values of  $\frac{dy}{dx}$  and  $\frac{d^2y}{dx^2}$ .

If  $x^2 - y^2 = 0$ , find  $\frac{dy}{dx}$ .

4. Find the point of inflexion in the curve,

$$y(a^4 - b^4) = x(x - a)^4 - xb^4$$

5. Find an expression for the angle included between the radius vector at any point of a curve and the tangent to the curve at that point.

6. Define the evolute of the curve.

Find the equation to the evolute of the curve  $y^3 = a^2 x$ .

7. In the curve  $y = x^4 - 4x^3 - 18x^2$ , find the nature of the curve at the points  $x = 3, -1$  and  $\frac{3}{2}(1 \pm \sqrt{5})$ .

8. Trace the curves

$$y^4 + x^2 y^2 - a^2 x^2 = 0 \dots \dots \dots (1)$$

$$r = \frac{4 a \cos \theta}{\sin^2 \theta} \dots \dots (2)$$

### THIRD CLASS.

#### CONIC SECTIONS.

1. Find the locus of the feet of the perpendiculars dropped from the foci on the tangent to an ellipse.

2. The tangents at the extremities of any focal chord of an ellipse intersect in the directrix, and the line joining their intersection and the focus is perpendicular to the chord.

3. A parallelogram is constructed by tangents drawn at the extremities of two conjugate diameters of an ellipse, prove that the diagonals of the parallelogram form a second system of conjugate diameters, and that the relation between the two systems is reciprocal.

4. Find the equation to the hyperbola when referred to the vertex as origin.

5. In the hyperbola prove the following relations :—

$$S Y^2 = B C^2 \cdot \frac{SP}{HP}$$

$$C P^2 - C D^2 = a^2 - b^2$$

6. In the hyperbola only one of any two conjugate diameters can meet the curve.

7. A line drawn through one of the vertices of an hyperbola, and terminated by two lines drawn through the other vertex parallel to the asymptote, will be bisected at the point where it cuts the hyperbola.

8. If the plane section of a right cone whose vertical angle =  $2a$  be an ellipse : the greatest and least distances of the circumference of which from the vertex are  $d$  and  $d'$ , then will the semi axis minor =  $\sin a \sqrt{dd'}$ .

9. Find the conic section to which the equation  

$$(x+y)^2 - 2c(x-y) = 2c^2$$
  
 belongs, and determine the position of its principal axis and focus.

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#### FOURTH CLASS.

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#### ALGEBRA.

1. Define a geometrical progression : and show that the product of any two terms equi-distant from a given term is always the same ; and that if each term be subtracted from the preceding, the successive differences are also in geometrical progression.

2. Expand  $(a + b \sqrt{-1})^n + (a - b \sqrt{-1})^n$ , writing down the general term ; and find the value of

$$\frac{a - \sqrt{2ax - x^2}}{a + \sqrt{2a^2x - ax^2}},$$

$$a - \sqrt[3]{2a^2x - ax^2}$$

when  $x = a$ .

3. Prove that

$$(a - b)^n = a^n \cdot \left\{ 1 - n \cdot \frac{b}{a - b} + \right.$$

$$\left. \frac{n \cdot (n + 1)}{1 \cdot 2} \left( \frac{b}{a - b} \right)^2 - \frac{n \cdot (n + 1) \cdot (n + 2)}{1 \cdot 2 \cdot 3} \left( \frac{b}{a - b} \right)^3 + \right\}$$

and hence find the sum of the series

$$1 - \frac{1}{2} \cdot \frac{1}{2} + \frac{1 \cdot 3}{2 \cdot 4} \cdot \frac{1}{2^2} - \frac{1 \cdot 3 \cdot 5}{2 \cdot 4 \cdot 6} \cdot \frac{1}{2^3} + \dots \text{ to infinity.}$$

4. If  $\frac{p}{q}$  and  $\frac{p'}{q'}$  be any two consecutive converging fractions, prove that  $pq' - p'q = \pm 1$ .

5. Show how to transform a number from one scale of notation to another. Transform 545 from the senary scale to the denary, and 5.75 from the denary to the senary.

6. Solve the equations—

$$(1.) (x^2 - a^2)(x + a) b + (a^2 - b^2)(a + b)x \\ + (b^2 - x^2)(b + x)a = 0. \}$$

$$(2.) (x - y)(x^2 + 4y^2) = x^3 + y^3 \\ x y = e^2. \}$$

7. Two persons A and B walk to meet each other from the extremities of a line AB: a third person C, who walks faster than either A or B, starts with A, and when he meets B turns back, and so on, till they all come together; the distance C walks in the direction A B, is twice that which he walks in the contrary direction, and when they come together he has passed over a space equal to A B; show that the rates of A, B and C are as 1, 2, 3.

### Mixed Mathematics.

Thursday, April 6th—Morning Paper.

FIRST CLASS.

### OPTICS.

1. Show that a diverging pencil, either direct or oblique, diverges from a point after reflection at a plane surface.

2. Find the geometrical focus of a pencil of rays after refraction at a spherical surface.

If the surface be convex and have a radius of 3 inches, find the position of the origin that the refracted pencil may be convergent and the geometrical focus at a distance of 30 inches from the surface whose refractive index = 1.5.

3. A ray of light is refracted through a prism in a plane perpendicular to its edge ; find the deviation produced by refraction.

4. A parabola whose latus rectum = 27 is placed before a concave spherical reflector; the focus and axis of the parabola being coincident with the centre and axis of the surface. The parabola is concave to the surface : find the nature of the image formed by direct pencils.

5. Find the focus of emergent rays when a small pencil of diverging rays is incident directly on a double convex lens.

6. Explain the difference between the dispersion and the deviation of a pencil ; show how the dispersive power of a medium is measured, and that the fact of an achromatic combination depends on the fact of different media having different dispersive powers.

7. Find the condition of distinct vision through a convex lens and its magnifying power.

8. An astronomical telescope of 3 feet focal length is fitted with Huyghens' eye-piece, the lenses of which are 2 inches apart. Trace the course of a pencil through it and find its magnifying power.

9.  $ACB$  is a section of an isosceles prism, whose refracting angle  $ACB = 2a$ , made by a plane perpendicular to its edge. The refractive index of the prism =  $\sqrt{2}$ , and a ray of light in the plane  $ACB$  which is incident on  $CB$  at  $P$  after refraction falls on  $CA$  at the critical angle and being reflected emerges through the middle point of  $AB$ . Prove that

$$CP = AC \cdot \cos a \cdot \frac{\cos a - \sin a}{\cos 2a + \sin 2a}$$

## SECOND CLASS.

## HYDROSTATICS.

1. The pressure upon any particle of a fluid of uniform density is proportional to its depth below the surface of the fluid.
2. When a solid floats in a fluid, the weight of the solid is equal to the weight of the fluid displaced ; and the part immersed is to the whole body as the specific gravity of the body is to that of the fluid.
3. A body immersed in a fluid is balanced by a weight  $P$  to which it is attached by a string passing over a fixed pulley : and when half immersed is balanced in the same way by a weight  $2P$ . Compare the densities of the body and fluid.
4. A weighs 10 grains in water and B 14 grains in air, and A and B connected together in water weigh 7 grains : the S. G. of air being 1 and of air .0013. Show that the S. G. of B is .8237, and that it is as large as 17.023 grains of water.
5. Explain the construction of the common barometer, and show how to find the pressure of the Atmosphere by means of it. When the mercury in the barometer is at 30 inches, find the corresponding height of the water barometer, the S. G. of mercury being 13.568.
6. The elastic force of air at a given temperature varies inversely as the space occupied.
7. A cylinder has an air-tight piston without weight fitted to one end, which is forced down through half the height of the cylinder : if the area of the base be 4 square inches and the pressure on a square inch 14 lbs., find the force applied to the piston.
8. Describe the common hydrometer and compare the S. G. of two fluids by means of it.
9. Describe the diving bell—and find the tension of the string when sunk to any depth.

8. Explain the construction of the thermometer, and the different ways of graduating it. What is the advantage of Fahrenheit's over the Centigrade and others?

9. A Smeaton's air pump and a condenser have a common receiver, and the ascents and descents of their pistons are performed in equal times, the piston of the one ascending while that of the other descends. If the piston of the air pump be originally in its lowest position, find the density of the air after three ascents and descents of the piston of the air pump.

### THIRD CLASS.

#### MECHANICS.

1. Assuming that the diagonal of a parallelogram represents the direction of the resultant of two forces acting at a point, the magnitudes and direction of the forces being represented by the sides of the parallelogram, show that the diagonal will also represent the magnitude of the resultant.

2. Two weights of 40 and 20 lbs. are suspended from the ends, A, B, of a beam 30 feet long. The weight of the beam is 100 lbs. and the distance of its centre of gravity from A is 10 feet; find the position of the fulcrum about which the whole will balance.

3. What is meant by the *resolved part* of a force in any direction? Assuming the rule for the resolution of forces, determine the resultant of any number of forces acting at the same point.

4. Define the centre of gravity of a material system; and find the centre of gravity of two particles  $P$  and  $P'$ .

If  $r$  be the distance from  $P$  of a point in the line joining  $P$  and  $P'$ , and  $r'$  its distance from  $P'$ ; show that  $Pr^2 + P'r'^2$  is least when that point is the centre of gravity.

5. Find the condition of equilibrium in that system of pulleys in which all the pulleys hang by a separate string—the weight of each pulley being the same.

6. If a man stand in a scale attached to a moveable pulley, and a rope, having one end fixed, pass under this pulley, and then over a fixed pulley ; with what force must he hold the free end in order to support himself—the strings being parallel ?

7. What are the requisites of a good balance ? Find the condition that a balance may possess great sensibility and great stability.

8. A shop-keeper has a false balance, and thinks to make his customers' consequent losses and gains balance by weighing the goods alternately in the one scale and in the other,—does he succeed ?

9. Show that the principle of virtual velocities holds in the single moveable pulley with the cords inclined.

10. If a cylinder has its base united concentrically to the base of a hemisphere of equal radius : find the height of the cylinder in order that the solid may stand on a smooth horizontal plane on any part of its surface, the distance of the centre of gravity of the hemisphere from its vertex being  $= \frac{2}{3}$  rad.

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#### FOURTH CLASS.

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#### EUCLID AND ALGEBRA.

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

2. If two parallel planes be cut by another plane their common sections with it are parallel.

3. If a line be drawn from one corner of a square cutting off one-fourth from the diagonal, it will cut off one-third from a side. Also, if lines be drawn similarly from the other corners the square contained by them will be two-fifths of the original square.

4. Define the tangent of an angle, and trace the change in its magnitude and sign as the angle increases from  $0^\circ$  to  $360^\circ$ .

5. Find the general value of all angles which satisfy the equation  $\text{Sec.}\theta = a$ .

6. Express  $\cos A$  in terms of  $\sin 2A$ , and show how in any particular case the proper signs of the radicals are to be determined.

Given  $\sin 210^\circ = -\frac{1}{2}$ , apply the formula to find the value of  $\cos 105^\circ$ .

7. If  $a + b + c + d = 360^\circ$ , prove that  $\tan a + \tan b + \tan c + \tan d = \text{sum of the products of the tangents taken three and three together.}$

8. Prove the formulæ—

$$\sin 3A. \cosec A - \cos 3A. \sec A = 2,$$

$$2 \tan^{-1} \frac{1}{3} + \tan^{-1} \frac{1}{7} = \frac{\pi}{4};$$

and find the value of  $x$  in the equation

$$1 - \sin a = 2 \sin^2 \left( x - \frac{a}{2} \right)$$

9. Define a logarithm—its mantissa and characteristic, and state the advantages which arise from taking 10 as the base of a system of logarithms.

Given  $\log 2 = .3010300$ ,  $\log 5.743491 = .7591780$ , find the fifth root of .0625.

10. Prove that  $\log_e \frac{n+1}{n} = 2 \left\{ \frac{1}{2n+1} + \frac{1}{3} \cdot \frac{1}{(2n+1)^3} + \dots \right\}$

If  $n = 8$ , find from the above  $\log_e 3$ , having given  $\log_e 2 = .693147$ .

*Thursday, April 6th—Afternoon Paper.*

FIRST CLASS.

### ASTRONOMY.

1. State and prove the properties of the polar triangle ; and show that the sum of the angles of any spherical triangle lies between 6 and 2 right angles.

2. Describe in their chief features the apparent motions of the fixed stars and of the sun ; and supposing these appearances to arise solely from the motion of the earth, deduce the nature of the earth's motion.

3. Define sidereal, solar, and mean solar time. Define also the equation of time. Find when the equation of time caused by the unequal motion in the ecliptic is additive or subtractive.

4. Describe the transit instrument and the mode of making an observation with it.

5. Find the latitude of a place by observing two equal altitudes of the sun before and after noon on a given day.

6. Find the effects of parallax on the hour angle and declination of a known body.

7. Explain the cause of aberration, and find the amount and direction of the change it produces in the apparent place of a star.

8. Find the time, magnitude and duration of a lunar eclipse.

9. In the Italian reckoning of time, half an hour after sunset is designated 24 o'clock ; find the hour of noon at a place in latitude  $45^{\circ}$  on a day in August, when the tangent of the sun's declination =  $\text{Sin} 15^{\circ}$ .

10. If the sun be supposed to move uniformly in the ecliptic and  $t, t'$ , be the lengths of the morning and evening at a place whose latitude is  $l$  on a day when the sun's declination at rising is  $d$ , then

$$\frac{t'}{t} = 1 \pm \frac{2 \text{ Sin } l. \text{ Sec}^2 d}{365} \left\{ \frac{\text{Sin } (\omega + d). \text{ Sin } (\omega - d)}{\text{Cos } (l + d). \text{ Cos } (l - d)} \right\} \frac{1}{2}.$$

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#### SECOND CLASS.

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#### NEWTON, SECT. 1, 2, 3.

1. Define what is meant by the term "limit" and "limiting ratio"—and show that the limiting ratio of the chord, arc and tangent to each other is a ratio of equality, when the arc itself vanishes.

2. State and prove Lemma 10.
3. If a body move in any orbit about a fixed centre of force, the areas described by lines drawn from the centre to the body lie in one plane, and are proportional to the time of describing them.
4. Sensible gravity at the equator being 288 times the centrifugal force, show that if the earth moved round its axis with 17 times its present velocity, bodies at the equator would cease to gravitate.
5. Investigate the expression  $F = \frac{2h^2}{S Y_2}$  limit  $\frac{Q R}{Q T_2}$  and show that  
 $v^2 = (\text{Force in the normal}) (\text{rad. of curvature.})$
6. Find the law of force under which a body may describe an equiangular spiral.
7. Find the velocity at any point in an ellipse under a force in the center, find also the periodic time.
8. A body moves in a parabola, find the law of force to the focus.
9. A body describes an ellipse under a force in the focus, determine the point where the velocity is an arithmetic mean, and also the point where it is a geometric mean between the velocities at the greatest and least distances.
10. Show that the volume of a paraboloid is one-half of the circumscribing cylinder.

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### THIRD CLASS.

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### DYNAMICS.

1. How is accelerating force measured? If  $g$  be the measure of gravity when one second is the unit of time, and  $g'$  its measure when half a second is the unit, prove that  $g' = \frac{1}{4}g$ .
2. A body acted on by gravity descends in a straight line,— prove that the space described varies as the square of the time from

rest. Prove also that it is equal to half the space which would be described in the same time with the last velocity continued constant.

3. State and prove the second law of motion.

A body is projected vertically upwards with a velocity which will carry it to a height  $2g$  feet,—after how long a time will it be descending with a velocity  $g$ ?

4. Given the velocities of two balls whose masses are  $A$  and  $B$ , and elasticity  $c$ ,—find their velocities after a direct collision.

5. A body descends down an inclined plane; find the accelerating force and velocity at any point, and show that if  $u$  and  $v$  be the velocities at two points,  $v^2 - u^2 = 2gy$ , where  $y$  is the difference of the altitudes of the points above a horizontal plane.

6. The path of a projectile in vacuo is a parabola, and the velocity at any point is that acquired in falling from the directrix.

7. A body is projected vertically upwards from a point  $A$  with a given velocity,—find the direction in which another body must be projected from a point in the same horizontal line with  $A$ , so as to strike the first body.

8. If  $v_1, v_2, v_3$ , be the velocities at three points of the path of a projectile, where the inclinations to the horizon are  $3a, 2a$ , and  $a$  respectively, prove that  $\frac{1}{v_1} + \frac{1}{v_3} = \frac{2 \cos a}{v_2}$ ,

9. A pendulum which vibrates seconds at the surface of the earth, loses  $10''$  in 2 hours when taken to the bottom of a mine; find the depth of the mine, supposing gravity to vary as the distance from the centre of the earth.

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#### FOURTH CLASS.

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#### TRIGONOMETRY.

1. In a triangle two sides and the included angle are given, find the remaining angles.

If one of the given sides be half the other and the included angle  $60^\circ$ , find the other angles.

2. Prove that

$$(\cos a + \sqrt{-1} \sin a)^m = \cos ma + \sqrt{-1} \sin ma$$

for all values of  $m$ .

3. An equilateral triangle and an equilateral and equiangular pentagon have the same perimeter : compare the radii of the circles inscribed in them.

4. Having given  $\tan \alpha$ ,  $\tan \beta$  &c., find  $\tan (a + \beta + \dots)$  the number of angles being  $2n + 1$ .

5. Expand the sine of an angle in a series ascending by powers of its circular measure. Point out the step in the process at which the circular measure is introduced and state the advantage which arises from its introduction.

Calculate  $\sin 648''$  to seven places of decimals.

6. If  $\frac{\sin(\theta - \alpha)}{\sin(\theta - \beta)} = \frac{a}{b}$ , and  $\frac{\cos(\theta - \alpha)}{\cos(\theta - \beta)} = \frac{a'}{b'}$ ,

$$\text{prove that } \cos(\alpha - \beta) = \frac{aa' + bb'}{ab' + a'b}.$$

7. From the extremities of the base  $AB$  of a semicircle two chords,  $AC, BD$ , are drawn, intersecting in  $E$  ; join  $DC$ , and prove that—

$$\text{area of triangle } DCE = (\text{area } ABE) \cdot \cos^2(A + B).$$

8. On the sides of an equilateral triangle three squares are described. Compare the area of the triangle formed by joining the centres of these squares with the area of the equilateral triangle.

### English Essay.

*Friday, April 7th.*

#### FIRST AND SECOND CLASSES.

Lives of Great Men all remind us  
 We can make our lives sublime,  
 And departing leave behind us  
 Footprints on the sands of time.

Footprints, that perhaps another  
 Sailing o'er life's solemn main,  
 A forlorn and ship-wrecked brother  
 Seeing shall take heart again.

*Longfellow.*

Not fortune's slave is Man : our state  
 Enjoins, while firm resolves await  
 On wishes just and wise,  
 That strenuous Action follow both  
 And Life be one perpetual growth  
 Of heavenward enterprise.

*Wordsworth.*

### THIRD AND FOURTH CLASSES.

A country which has no National Literature, or a Literature too insignificant to force its way abroad, must always be, to its neighbours, at least in every important spiritual respect, an unknown and misestimated country.

*Carlyle.*

### Vernacular Translation.

*Saturday, April 8th—Morning Paper.*

FOR ADVANCED SCHOLARS.

*Translate the following passages into Bengali.*

I cannot call riches better than the baggage of virtue ; the Roman word is better, " impedimenta ;" for as the baggage is to an army, so is riches to virtue ; it cannot be spared nor left behind, but it hindereth the march ; yea, and the care of it sometimes loseth or disturbeth the victory ; of great riches there is no real use, except it be in the distribution ; the rest is but conceit ; so saith

Solomon, "Where much is, there are many to consume it ; and what hath the owner but the sight of it with his eyes ?" The personal fruition in any man cannot reach to feel great riches : there is a custody of them ; or a power of dole and donative of them ; or a fame of them ; but no solid use to the owner. Do you not see what feigned prices are set upon little stones and rarities ?—and what works of ostentation are undertaken, because there might seem to be some use of great riches ? But then you will say, they may be of use to buy men out of dangers or troubles ; as Solomon saith, "Riches are as a stronghold in the imagination of the rich man ;" but this is excellently expressed, that it is in imagination, and not always in fact : for, certainly, great riches have sold more men than they have bought out. Seek not proud riches, but such as thou mayest get justly, use soberly, distribute cheerfully, and leave contentedly ; yet have no abstract or friarly contempt of them ; but distinguish, as Cicero saith well of Rabirius Posthumus, "In his desire of acquiring fortune it was evident that he sought not the gratification of avarice, but means for enlarged benevolence."

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My sentence is for open war ; of wiles,  
More unexpert, I boast not : them let those  
Contrive who need, or when they need ; not now.  
For while they sit contriving, shall the rest,  
Millions that stand in arms, and longing wait  
The signal to ascend, sit lingering here  
Heaven's fugitives, and for their dwelling-place  
Accept this dark opprobrious den of shame,  
The prison of his tyranny who reigns  
By our delay ? No, let us rather chuse,  
Arm'd with hell flames and fury, all at once  
O'er heaven's high towers to force resistless way,  
Turning our tortures into horrid arms  
Against the Torturer ; when to meet the noise

Of His almighty engine he shall hear  
 Infernal thunder ; and for lightning see  
 Black fire and horror shot with equal rage  
 Among his angels ; and his throne itself  
 Mix'd with Tartarean sulphur, and strange fire,  
 His own invented torments. But perhaps,  
 The way seems difficult and steep to scale  
 With upright wing against a higher foe.  
 Let such bethink them, if the sleepy drench  
 Of that forgetful lake benumb not still,  
 That in our proper motion we ascend  
 Up to our native seat : descent and fall  
 To us is adverse.

*Saturday, April 8th—Afternoon Paper.*

FOR OLD SCHOLARS.

*Translate the following passage into English :—*

সত্ত্বান্দ কহিলেন আপনকার জনকের সহস্রাঙ্গের লিখিত  
 যে লিপি আছে সেই লিপি কালিদাসকে দেউন্ত। রাজা  
 বলিলেন সে কোন পত্র। সত্য কহিলেন সে পত্রো এই  
 হাতাতে লেখা আছে যে অযমাংশ আবাঢ়মাসাংশ দিবসে  
 মধ্যাহ্নকালে এই নারিকেল বৃক্ষের উপরে অনেক শর্ম আমি  
 রাখিলাম। আমার পর আমার উত্তরাধিকারী ষ্ণোড়শবর্ষ-  
 বয়স্ক প্রাপ্তব্যবহার হইলে সইবে ইতোমধ্যে কদাচিত্ত হস্তসাং  
 করিবে না।

কালিদাস তোমার পৈতৃক মহাজন অতএব হুমি নিষ্কপটে  
 এ সকপট শুনুক্তি পৈতৃ চীরক লেখ্য পৈতৃকর্জ পরি-  
 শোধনাৰ্থ তাহাকে দেও যেমন শুণ তাহার তেমনি শোধন

ପର ଦିବସେ ମରଳେ ମଭାତେ ସନ୍ଧାନୋଗ୍ୟ ହାମେ ଉପବିଷ୍ଟ ହିଲେ କାଲିଦାସ ଓ ତ୍ୱରିତାକୃତ ହିୟା ଏ କବିତା ପାଠ କରିଲେନ । ତାହାର ଅର୍ଥ ଏହି ଭୋଜରାଜେର ପିତା ସଜ୍ଜଦ୍ଵତ୍ ଅଧିର୍ମର୍ଣ୍ଣ କାଲିଦାସ ନାମକ ଉତ୍ସମର୍ଦ୍ଦେର ହାମେ ଇଯିଥିକେର ପ୍ରତି ସମ୍ବନ୍ଧରେ ବୈଶାଖେର ଦଶମ ଦିବସେ ଅନ୍ତୋଦୟ ଲଙ୍ଘ କୋଟି ଅବର୍ଣ୍ଣ ଖଣ୍ଡ ଲାଇଲେନ । ଅଭିଧର ପଣ୍ଡିତୋର କଟ୍ଟି ପୁର୍ବାଭ୍ୟାସ ପାଠେର ନ୍ୟାୟ ଆମାୟାସେ ଦେ କବିତାର ବାଟିତି ଅବିକଳ ଆୟୁତି କରିଯା କହିଲେନ ମହାରାଜ କାଲିଦାସ ଅନ୍ୟାନ୍ୟର ପ୍ରାଚୀନ ଶ୍ଲୋକ ଅଭ୍ୟାସ କରିଯା ସ୍ଵକବିଭୂତ ଖ୍ୟାପନ କରିତେଛେନ ଆମାର ଏ କବିତା ଅମେକ ଦିନଅବଧି ଜାନି ଏ ଶ୍ଲୋକ ନବ୍ୟ ବୟ ବୟ । ଆପଣି ପିତୃଖ୍ୟାପକ କରଣ କରନ ଅନକେର କର୍ଜ ପୁଣ୍ୟରେ ଅବଶ୍ୟ ପରିଶୋଧ ।

ତମମନ୍ତ୍ରର ଭୋଜରାଜ ଏ ଲିଖିତ ପତ୍ର କାଲିଦାସେର ହଟେ ଦିଲେନ । କାଲିଦାସ ପତ୍ରାର୍ଥ ଅବଗତ ହିୟା ଅଯନାମ୍ବମତେ ଆବାଚ୍ମାନାନ୍ତ ଦିନେ ମାଧ୍ୟାହ୍ନିକ ଛାଯାର ଶୂନ୍ୟଭୂତେହୁକ ଛାଯା ପାଦତଳେ ଆସିଯା ଥାକେ ଅତ୍ୟନ୍ତ ଛାଯାକଟେ ବୃକ୍ଷଗୁରୁଦେଶ ବୃକ୍ଷମୂଳେ ଥାକେ ଏହି କାରଣେ ସୁରି ଏହି ନାରିକେଳ ବୃକ୍ଷମୂଳେ ଥନ ଆଛେ ଇତ୍ୟାକାରକ ତ୍ୱରିତର ତାତ୍ପର୍ୟାବଗତ ହିୟା ଦେ ଲାଜଳୀ ବୃକ୍ଷ ସମୂଳୋନମୂଳନ କରିଯା ଅଧୋଭୂମି ଭାଗେ ମିଥାତ ତାମୁମୟ ପକ୍ଷେ-ଦର୍ଶନେଟେ ସଂହିତ ପଞ୍ଚଲଙ୍ଘ ଅର୍ଣ୍ଣ ପାଇଲେନ । କାଲିଦାସେର ଏତା-ଦୂର ଅସାଧାରଣ କର୍ମ ଦେଖିଯା ମଭାତ୍ ମମନ୍ତ ଶୋକ ଅତ୍ୟାକର୍ଷ୍ୟ ମାନିଯା ଅପ୍ରକୃତ ହିୟା ଚିତ୍ରାପିତ ପ୍ରାର୍ଥ ତଟ୍ଟ ହିୟା ଥାକିଲେନ ।

1. What is the grammatical difference between the following sets of words, and what would be the most appropriate rendering of each in English?

(a) জান, জাত, জেয়, জাপন, জাপিত, জাপক,  
জিজানা, জিজার, জিজাসিত.

(b) দৃষ্টি, দৃষ্ট, দৃষ্টা, দৰ্শিত, দৃশ্যমান, দৰ্শনী, দৃষ্টব্য.

(c) ইত্বা, ইত, ইষ্টা, ইনন, ষাতক, জিহাংছ,  
জিহাংসা.

2. Write the passive participles preterite of the following :

গমন, সূরণ, পরিধান, দান, গুহণ, স্পর্শন, দমন,  
বচন, বহন, আরোহণ.

3. Write the feminines of the following nouns :

বিদ্বান, যশকর, মেজেষ্টী, মানী.

4. In Bengali prose, what is the natural position in a sentence of the nominative case, the accusative case, the finite verb, verbs in the infinitive mood, and participles?

*Saturday, April 8th—Morning Paper.*

(FOR 3RD AND 4TH CLASS SCHOLARS.)

*Translate the following passages into Bengali.*

There are but two things which, in my opinion, can reasonably deprive us of this cheerfulness of heart. The first of these is the sense of guilt. A man who lives in a state of vice and impenitence can have no title to that evenness and tranquillity of mind which is the health of the soul, and the natural effect of virtue and innocence. Cheerfulness in an ill man deserves a harder name than language can furnish us with, and is many degrees beyond what we commonly call folly or madness.

Atheism, by which I mean a disbelief of a Supreme Being, and consequently of a future state, under whatsoever title it shelters itself, may likewise very reasonably deprive a man of this cheerfulness of temper. There is something so particularly gloomy and offensive to human nature in the prospect of non-existence, that I cannot but wonder, with many excellent writers, how it is possible for a man to outlive the expectation of it. For my own part, I think the being of a God is so little to be doubted, that it is almost the only truth we are sure of ; and such a truth as we meet with in every object, in every occurrence, and in every thought.

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Life makes the soul dependent on the dust ;  
Death gives her wings to mount above the spheres.  
Through chinks, styl'd organs, dim life peeps at light ;  
Death bursts th' involving clouds, and all is day ;  
All eye, all ear, the disembody'd pow'r.  
Death has feign'd evils nature shall not feel :  
Life, ills substantial, wisdom cannot shun.  
Is not the mighty mind, that son of Heav'n,  
By tyrant Life dethron'd, imprison'd, pain'd ?  
By Death enlarg'd, ennobled, deify'd ?  
Death but entombs the body, Life the soul.  
" Is Death then guiltless, how he marks his way  
" With dreadful waste of what deserves to shine !  
" Art, genius, fortune, elevated pow'r !  
" With various lustres these light up the world,  
" Which death puts out, and darkens human race."  
I grant, Lorenzo, this indictment just :  
The sage, peer, potentate, king, conqueror !  
Death humbles these ; more barb'rous Life the man.

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Saturday, April 8th—Afternoon Paper.

FOR 3RD AND 4TH CLASS SCHOLARS.

*Translate the following passages into Bengali.*

ভূয়োভূয় উঠেখ কৱা গিয়াছে, যে সকল মঙ্গলালয় পরমেশ্বর কেবল মঙ্গলজনক নিয়ম সমুদায় সংস্থাপন করিয়া বিশ্বাজ্য পালন করিতেছেন, এবং সংসারের সমস্ত বস্তুকে আমারদের উত্তরোন্তর অধিকৃতি সাধনের উপযোগি করিয়া সৃষ্টি করিয়াছেন। কেবল মঙ্গলই তাহার সমুদায় নিয়মের প্রয়োজন, এবং সুখই সমস্ত বস্তুর উৎপাদ্য। সংসারে এমত কোন নিয়ম নাই, যে তাহা দুঃখোৎপন্নির নিমিত্তে স্থাপিত হইয়াছে, এবং এ প্রকার কোন পদার্থ নাই, যে তাহা জগতের অশুভ সম্পাদনার্থে সৃষ্টি হইয়াছে। যদিও এই সমস্ত কথা অস্থাৰ্থ বটে, তথাপি ভূমগল কেবল দৃঢ়ের স্থান কপে প্রতীয়মান হইতেছে; রোগের যাতনা, দারুণ দৈন্যদশা, পরের অত্যাচার, আকস্মীক দুর্ঘটনা, নৈসর্গিক উৎপাত এবং অন্যান্য নানা প্রকার শারীরিক ও মানসিক পীড়ায় পীড়িত হইয়া ভূরি ভূরি লোকে দুঃসহ যন্ত্রণা ভোগ করিতেছে। অতএব, এই সমস্ত দৃঢ় পরমেশ্বরের নিয়ম পালনাধীন ষষ্ঠিতেছে, কি তাহার অধিবহন নিয়ম অবহেলন করাতেই মৰ্জ্যলোকের এইকপ দারুণ দুর্দশা হইতেছে, তাহ বিবেচনা কৱা কৰ্তব্য। বিবেচনা করিলে অবধারিত হইবে যে যাবতীয় দৃঢ় তাহার নিয়ম লংঘনেরই ফল। সেই পর্ণ ন্যায়বান বিশ্বসন্মুটি অশুভ কর্মের দৃঢ় কপ ফল বিধান

કરિયાછેન, એવા સંસારે યે કિછુ સુધી આછે, તાહાઓ તીવ્ય  
સર્વ સાધારણે સુધેર નિમિટ્ટે સૂજન કરિયાછેન।

1. What is the difference between the rules of English and Bengali prose composition, as to the position of the verbs, adverbs, and participles in a sentence ?
2. Write the feminines of the following nouns : દ્રિક્ષયા, સહ-  
ચર, યશ્ચર, સાધુ, બુદ્ધિમાન, ભદ્ર.
3. How are adverbs formed from adjectives in Bengali ?
4. What is the grammatical difference between the following words દાતુ, દાતા, દેય, દાન, દાતવ્ય, દાન્નો ?

### Literature Proper.

(*Extra Paper.*)

#### FIRST AND SECOND CLASSES.

*Monday, April 10th—Morning Paper.*

#### BACON: NOVUM ORGANUM.

1. Bacon asserts of syllogism that, " it catches the assent, but lets things themselves go through." Explain this assertion and either justify, modify or refute it.
2. Define accurately the philosophical terms—"Idea," and "Idol."
3. Enumerate the principal defects of the human understanding from which arise the " Idols of the Tribe."
4. State shortly, and without entering into any discussion of their respective modes of operation, the several obstacles to the acquisition of knowledge.
5. Give Bacon's definition of a "true consent." Is consent, in matters of the understanding a safe mark of truth ? State clearly the reasons for your assertion,

6. "Thus, like Atalanta, stooping to take the golden fruit, they interrupt the course and lose the victory."

Explain the allusion, and give Bacon's application.

7. State accurately the distinction which Bacon draws between "experiments of light," (*lucifera*), and experiments of profit (*fructifera*); and give examples of each.

8. In his comparison of the doctrinal and empirical schools, Bacon likens the Empiric to the ant, the Rationalist to the spider, and the true Philosopher to the bee. Explain fully the force and application of this figurative comparison.

9. What are the five grounds of hope, which Bacon entertains, that knowledge must needs be progressive? Enumerate them simply without attempting their discussion.

10. Distinguish between "abstraction" and "generalization."

#### BACON: ESSAYS.

11. "On the other side, Nobility extinguisheth the passive envy for others towards them, because they are in possession of honour."

Explain what is here meant by "passive envy."

12. What three disadvantages does Bacon attribute to Simulation and Dissimulation?

13. "All rising to great place is by a winding stair: and if there be factions it is good to side a man's self whilst he is in the rising, and to balance himself when he is placed."

(a) Paraphrase very accurately this sentence.

(b) Explain more fully the author's meaning.

14. "Dangers are no more light, if they seem light; and more dangers have deceived men than forced them."

Clearly explain this passage.

15. "Certainly some there are that know *the resorts and falls of business*, that cannot sink into the main of it; like a house that hath convenient stairs and entries but never a good room; therefore you shall see them find out *pretty looses in the conclusion*, but are no ways able to examine or debate matters;

and yet commonly they take advantage of their inability, and would be thought *wits of direction.*"

Give the general meaning of this passage ; and explain with all accuracy the clauses printed in italics.

16. " Certain it is, that rebels, figured by the Giants, and seditions Fames and Libels, are but brothers and sisters, masculine and feminine."

What is Virgil's story of the birth of Fame ?

In what other Essay has Bacon used it ?

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### Natural Philosophy.

(*Extra Paper.*)

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*Monday, April 10th—Afternoon Paper.*

#### FIRST AND SECOND CLASSES.

1. Explain fully the difference between Abstract and Physical Science.
2. What are the characters which distinguish the relation of Cause and Effect ?
3. A Law of Nature may be regarded in two lights :—which of the two is the more important ? State distinctly the reasons which guide you in your choice.
4. The nature and object of Classification ? The difference between Natural and Artificial systems of Classification ?
5. Explain what is meant by the Analysis of a Complex Phenomenon. Analyse the Phenomenon of the rise of Mercury in the Barometer.
6. Explain the use of Hypotheses in the framing of Theories.
7. What is the meaning of the term " Prerogatives of Instances" ? Give examples of Collective and Crucial Instances.

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## JUNIOR SCHOLARSHIPS.

1854.

(Hindu College.)

## English Grammar.

*Saturday, April 1st—Morning Paper.*

1. Define what you mean by the Case of Nouns.
2. In what words is there strictly an Objective Case ?
3. Enumerate the various kinds of Pronouns, and show in what they differ from each other.
4. Explain accurately the distinctions which exist between the different Moods of the Verb.
5. What is a Participle, and what are its various uses ?
6. Parse the following sentence :—"Having lost considerably by this undertaking, I shall not renew it."

*Saturday, April 1st—Afternoon Paper.*

1. Correct the following sentences, and give the rule in each case. "You and me will go." "Who did you give it to?" "Neither him or her have been spoke to."
2. What do you mean by the words—Prosody, Metre, Rhyme ?
3. What poetic feet are in most common use ? Give examples.
4. Mark the accented syllables in the following lines :—

Queen and huntress, chaste and fair,

Now the sun is laid to sleep,

Seated in thy silver chair,

State in wonted splendour keep.

Hesperus invokes thy light,

Goddess, exquisitely bright.

5. Give examples of the following figures of Rhetoric :—Metonymy, Prosopopœia, Apostrophe, Antithesis, Interrogation, Climax.

History.*Monday, April 3rd—Morning Paper.*

1. State, briefly, the efforts made by Alfred the Great to improve his people.
2. After the death of William the Conqueror, his sons, William and Robert, were competitors for the Crown. State the particulars of the accommodation to which they consented, when William in 1091 embarked a large force and landed in Normandy.
3. With what monarch did Richard the 1st co-operate in his crusade against the armies of Saladin? By whom was the English King taken prisoner, under what circumstances, and what monarch resolved to take every advantage of Richard's calamity?
4. What caused the war between John and his Barons, the King having signed *Magna Charta*?
5. Name the celebrated castle in England, built during the reign of Edward the Third, and relate the tradition respecting the Order of the Garter, instituted in this reign.
6. There are conflicting accounts of the manner of Richard the Second's death; to which should most credit be attached?

*Monday, April 3rd—Afternoon Paper.*

1. Relate, briefly, the events which ushered in the Reformation.
2. In whose reign were Monasteries suppressed; and by whom was the annual income derived from them, appropriated?
3. What proceedings chiefly characterized the reign of Queen Mary?
4. Mary, Queen of Scots, arrived in Scotland from France in 1561—Contrast the character of the Court and Country she had left, with that of the People over whom she came to rule.
5. What measures were passed in the reign of Queen Elizabeth, before the Reformation was finally and effectually established?

6. When Philip of Spain was preparing to invade England with his Invincible Armada, what claim did he put forth to the Crown of England? Relate the fate of the Armada.

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## Mathematics.

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*Tuesday, April 4th—Morning Paper.*

### ARITHMETIC AND ALGEBRA.

1. Multiply  $\frac{6\frac{5}{6}}{7\frac{1}{2}}$  of  $\frac{12\frac{1}{2}}{16\frac{2}{3}}$  by  $1\frac{1}{3}$ ; and divide  $1\frac{1}{4}$  of  $\frac{2}{5}$  of  $3\frac{2}{7}$  by  $7\frac{2}{3}$  of  $\frac{1}{4\frac{2}{3}}$ .
2. Divide 5.075 by .007; and prove the result by vulgar fractions.
3. If £175. 5s. at simple interest, amount to £210. 6s. in 5 years, what is the rate per cent?
4. Find the discount on a bill for £73 due 90 days hence, at 6 per cent.
5. What sum of money must be invested in the 3 per cent consols, when the price of stock is  $85\frac{3}{4}$ , to produce an annual income of £100?

6. The floor of a room, measuring 20 feet by  $15\frac{1}{2}$  feet, is to be covered with matting  $1\frac{1}{4}$  yard wide: find the length required, and the cost at 3s. 4d. a yard.

7. Multiply  $x^{\frac{1}{2}} - x^{\frac{1}{4}} y^{\frac{1}{2}} + y^{\frac{1}{4}}$  by  $x^{\frac{1}{4}} + y^{\frac{1}{4}}$ , and divide  $x^4 + x^3 - \frac{1}{x} - 1$  by  $x + \frac{1}{x}$ .

8. Extract the square root of

$$a^4 - \frac{4}{3} a^3 b^{\frac{1}{2}} + \frac{10}{3} a^2 b - \frac{4}{3} a b^{\frac{3}{2}} + b^4.$$

And write down the elementary factors of

$$a^2 - x^2, a^4 - x^4, a^3 + x^3, a^3 - x^3.$$

9. Find the G. C. M. of  $x^4 - 3x^3 + 6x^2 - 5x + 3$  and  $x^4 + x^3 - 4x^2 + 5x - 3$ ; and the L. C. M. of  $m^2 - mn + n^2$ ;  $m^2 + mn + n^2$ ;  $m + n$  and  $m - n$ .

10. Solve the equations :

$$(1.) \frac{5x + 19}{9} - \frac{7 - 2x}{5} = \frac{4}{3} (x + 4).$$

$$(2.) a + bx + cx^2 = 0.$$

$$(3.) x^6 - 6x^3 - 2 = 0.$$

11. A traveller passing through a certain place, travels at the rate of 13 miles in 2 hours ; 12 hours afterwards another passes through the same place, travelling the same road at the rate of 26 miles in 3 hours. How long and how far must he travel, before he overtakes the first ?

*Tuesday, April 4th—Afternoon Paper.*

#### GEOMETRY.

1. The rectangle contained by two lines is a mean proportional between their squares.
2. In any triangle, right angled at A, if CD be drawn bisecting the angle C, show that  $AB : AC :: BC - AC : AD$ .
3. Similar triangles are to one another in the duplicate ratio of their homologous sides.
4. Planes to which the same straight line is perpendicular, are parallel to one another.
5. If two straight lines be cut by parallel planes, they shall be cut in the same ratio.
6. If a straight line be at right angles to a plane, every plane which passes through that line is at right angles to the first mentioned plane.

## Geography.

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*Wednesday, April 5th—Morning Paper.*

1. What simple facts satisfactorily prove that the earth is of a spherical form, and not, as was once supposed, a vast plane?
2. Explain the terms Promontory, Table-land, Coast, Desert, Oasis, Volcano, Archipelago, Estuary, Haven, Roadstead and Cataract; and give an example of each.
3. Mention the principal Seas and Peninsulas in both Continents; specifying their situations.
4. Give, by a sketch, a comparative view of the principal mountains in the world, two from each quarter; and state, as exactly as you can, the number of feet they are elevated above the level of the sea.
5. What rank does Europe hold among the grand divisions of the globe, in point of magnitude and population? In what particulars is it infinitely superior to them all? Name the countries it contains, with their respective situations.
6. Describe the government, religion and principal manufactures of England; enumerate her foreign possessions, and mention the circumstances to which her commercial prosperity is attributable.
7. What is the Germanic Confederation?
8. Why are Greece, Palestine and Egypt, objects of interest to the enlightened traveller?

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*Wednesday, April 5th—Afternoon Paper.*

1. What is the most striking physical feature of Africa, by what different races is it inhabited, and what localities do they occupy?
2. Draw a map of Hindustan, laying down in it the principal mountains and rivers, and marking the positions of Calcutta,

Pondicherry, Calicut, Goa, Attock, Lahore and Darjeeling. Give a brief account of these places and also mention the chief productions of Hindustan, the amount of its population, and the nature of its government.

3. For what is China remarkable? What is there peculiar in the government of Japan, and is there any other country in which the same peculiarity exists?

4. Describe the boundaries, and government of the United States of North America, mentioning the number of States, of which the Union is at present composed, and the amount and description of its population.

5. What and where are the Maelstrom, Land's-end, Brighton, Bordeaux, Gibraltar, St. Helena, Surat, Hong-kong, California and Niagara?

6. Of what parts of the globe are the Rein-deer, Giraffe, Camel, Kangaroo and Llama, natives? In what countries are cotton, indigo, coffee, tea, mahogany and teak produced? and where are coal, iron, tin, copper, gold and diamonds chiefly found?

7. Describe the national characteristics of the English, French, Arabs, Bengalese and Chinese.

8. State concisely what causes the alternation of day and night, and give the rule for finding, by the artificial globe, the hour at any place from the hour given at any other place.

## LIBRARY MEDAL EXAMINATION.

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### *Hindu College.*

1. What was the extent of the Roman Empire at the time of the establishment of the Monarchy? State what you know respecting the character and morals of the people at the same period.
2. Give a narrative of the chief events which attended the constitution of the Monarchy, and sum up as briefly as possible the characters of the leading actors in these events.
3. What changes in the constitution and administration of government were made by Augustus?
4. Give a short account of the career, and final fate of Germanicus.
5. What important changes in the law were wrought by Tiberius, and Caligula respectively?
6. State from a brief consideration of the leading events of his reign, what you conceive to have been the natural character of Claudius: and give the names of those who seem to have exercised the greatest influence over him.
7. Describe the moral condition of Rome under the later Emperors.
8. Give an account of the commerce of the Romans.
9. State the causes of the corruption of the Latin language.

When did Roman Literature reach its highest perfection?

10. For what purpose was Eloquence cultivated under the Emperors? Name the later Historians of Eminence.
11. What was the State of the Arts under—1st—Augustus, 2nd—Nero, 3rd—Vespasian, 4th—Hadrian.
12. Sketch the Progress of Christianity.

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*Hooghly College.*

1. Had the Art of Printing any existence in ancient times or is it entirely a modern invention? Do any doubts hang over the origin of modern Printing? Is it known exactly who was the inventor and where the Art was first cultivated?
2. In what country was the modern Art of Printing first practised? To what other countries did it ere long extend? Who introduced the Art into England, and in what year did this take place?
3. Mention some of the books which were first printed. Had the Art an immediate effect on the progress of learning or was this effect produced only slowly?
4. Can we trace back the Art of Navigation to its origin? Among what nations did it flourish most in ancient times? What information can you give in regard to the progress of Navigation and Commerce among the Nations of Modern Europe?
5. Describe the Mariner's Compass. Mention particularly the manner in which, and extent to which, this invention has given an impulse to commerce.
6. Give a short account of the experiments made by Watt which led to the construction of his single acting Engine. Wherein was it superior to former inventions? Why are the purposes, to which this engine may be applied, limited?
7. Describe the operation of Watt's Double Acting Engine and the various contrivances for connecting the piston with the beam. What is the use of the Fly-wheel and Governor?
8. Give a short account of the various ingenious contrivances in Railway engines to overcome the supposed defect of adhesion of the face of the wheel and road, to ensure motion.
9. Give a short history of the rise and progress of the electric telegraph. In the construction of a line what are the essentials to be attended to?

10. Describe the principal instruments used for recording telegraph signals. Point out the essential difference between Morse's and Bane's instruments. How far is Bane's invention independent of Morse's ?
11. In a long circuit the electric current is found to be too weak to produce the Mechanical or Chemical effect necessary for the Instruments to make a legible record. Explain the cause of this and how the difficulty has been obviated.
12. How has the electric telegraph been used to determine the longitude of places on the earth's surface, and by its help how may the observatory at Greenwich be made to give the true Meridian time to most of the principal commercial towns in England ?

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**ANSWERS  
OF THE  
MOST PROFICIENT STUDENTS  
IN THE  
Presidency and Mofussil Colleges.**

## A N S W E R S.

### Literature Proper.

#### FIRST AND SECOND CLASSES.

##### *Morning Paper.*

*Answer to the First Question.*—The tempest has been very often compared with the Midsummer's Night's Dream. Both are instances of what Coleridge calls Romantic Drama. In both of them Shakespeare introduces the agency of Spirits and Fairies. The one represents expressly as its name imports a dream and this excuses the introduction of preternatural agency as Shakespeare himself thinks—as is evident from the concluding speech of Puck :

If we shadows have offended  
Think but this and all is mended.  
&c. &c. &c.

There are reasons for thinking that the Tempest also is intended to be the representation of a dream. The following lines warrant this belief :

And like the baseless fabric of *this vision*  
The cloud-capped towers, the gorgeous palaces,  
The solemn temples, the great globe itself  
Yea all which it inherit shall dissolve ;  
And like *this unsubstantial pageant faded*  
Leave not a rack behind : *we are such stuff*  
*As dreams are made on, and our little life*  
*Is rounded with a sleep.*

The lines in *italics* correspond with the words of Puck some of which are quoted above.

I may also remark that in both these plays, the consummation of a marriage or marriages, crowns the plot. M. Guizot has remarked in his attempt to ascertain the date of the Tempest that it is extremely probable that the play was composed on the occasion of the celebration of the marriage of Essex : He adduces in support of his conjecture (which by the bye he asserts in the form of a settled conclusion) the following arguments ; *viz.*, that the blessings bestowed on the married couple by the goddesses and the assertion of Ceres that they have resolved to have no bed-rite performed until the celebration of the marriage, plainly

indicate that the occasion for which the play was got up was the marriage of Essex. It is probable also that the Midsummer Night's Dream was also got up for a similar occasion.

Oberon and his fairies also bestow their blessing with no sparing hands on the married pairs of that play.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

*Answer to the Second Question.*—(a) The meaning of this will appear from the following paraphrase. Thy green hills where dwell the grazing flocks and level plains covered with lusty grass which serve to keep alive those fleecy herds ; thy mounds with delved and clay be-plastered tops which showery April at thy command adorns, adorns with flowers, wherewith chaste maidens all weave chaplets pure ; and thy groves of broom whose shade the rejected woer likes best being bereft of his love.

It was proposed to substitute pionied for pioned ; lilled for twilled ; and brown groves, for broom groves. The reason for the last substitution was that the brooms grew in shrubs only, so that they could not form groves. We have however two towns of the names of Broomgrove and Bromsgrove which show that it was not unusual in former times to talk of broomgroves.

(b) And for the remaining part of the navy which I scattered they have all reassembled and are at this moment sailing on the Meditarranean wave in melancholy plight directing their course towards Naples. It was proposed to substitute *float* (in the sense of *afloat*) for *flote*.

(c) I neglect my business, but these delicious ideas, reinvigorate me after my toils, so that I am least fatigued when I am thus employed.

The latter part of the sentence might have another interpretation, by transferring the comma after *busy*, *viz.*—I am most fatigued when least I employ myself thus. But as the double superlative is used in many other places in Shakespeare—I think the reading may stand as it is. It was proposed to substitute *busiless* for *busy least* ; but as the particle *less* is never joined to adjectives but always to nouns this emendation would not hold.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

*Answer to the Third Question.*—These are the Unities of (1) Time (2) Place and (3) Action. The time occupied by the plot must not be more than twenty-four hours—it must be confined to the same place or at least must not change to very distant places—and there must be continuity in the Action (*i. e.*) the action must be one and not composed of detached events.

The *Tempest* is the only play in which all these are strictly adhered to. The time taken up between the commencement of the *Tempest* and the restoration of Ferdinand to the longing eyes of his father is not more than three hours and Shakespeare has been anxious to display this in the clearest manner as appears from the speeches of Alonso and others.—Thus in the concluding scene Alonso says to Prospero that it was but three hours since they gave themselves up for lost. The Botswain repeats the same information “which but three glasses since, &c.”

The scene lies all along in the same small island.

The unity of the action is also strictly adhered to, in the *Tempest*.

From the beginning it was tending to the same conclusion, *viz.*, the marriage of Ferdinand and Miranda and the restoration of Prospero to his dukedom.

The unities are very ill preserved in the historical plays of Shakespeare particularly the unity of Time. In the *Henry VIII.*—the play commences with the accusation of Buckingham in 1521, and ends with the death of Katharine in 1536—and includes a period of 15 years. In this play Shakespeare has made the birth of Elizabeth succeed the death of Katharine, though really she was born in 1533 and the queen died in 1536. In *Ant. and Cleo.* the places changes from Egypt to Rome and Rome to Egypt and occupies a long period. In *Othello*, the scene changes from Venice to Cyprus. I could point out many more breaches in the unities if I had time.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

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*Answer to the Fourth Question.*—Corollary—(from *corolla*) something superadded. In the *Tempest* it means—something in superabundance.

Trash—from old Fr. *trasher* (*cotgreve*)—Afterwards *trassier* which means to *intrase* (*i. e.*) to put to *traces* or under confinement or restraint.

The thing (whether man, dog or hawk) that thus required to be trashed by reason of its being otherwise ungovernable was hence called *trash*. Thus anything become useless, any rubbish-

ing thing—(*e. g.*) an ill-trained hound, a hot simpleton like Roderigo—was denominated trash. Harmand a divine of the reign of Charles the first almost defines its meaning in a sentence which I quote. “This contracty” says he “always interposes some obstacles to hinder or *trash* you from doing things you would.”

Thus Shakespeare also makes Iago say of Roderigo :

This poor trash of Venice whom I trace  
For his swift hunting.

Some editions make the *trace*, *trash*, but seeing that Iago does not mean to restrain Roderigo in his wild goose chase but rather halloes and encourages him to it, we cannot accept the latter.

Again the same play Iago says

Who steals my purse, steals trash  
’Tis something nothing.

State was formerly something exhibited at a public show—Thus in the *Taming of the Shrew*—she says

Sir, is it your will  
To make me a state among these mates.

Afterwards it came to mean something put forth as a bait a decoy duck.

Impediment, from *impedimenta*—baggage—and thence any hinderance or obstacle.

Canker—from *cancer* a crab and thence an ulcer that crawls like a crab—it also means a disease in plants.

Teen is grief.

Deck—from *deckon* to cover—afterwards to dress—and thence to ornament.

Patch originally meant and still means—to cover a rent in a cloth, by means of a small piece of cloth—hence it came to mean a counterfeit one who assumes a guise which does not belong to him.

Ditty—from Anglo-Saxon—*dihton* (whence also Modern German—*dichton*—hence their poets are called *dichter*) to indite—to compose;—therefore *ditty* means any thing indited.

Welkin—Anglo-Saxon *Velkin* (whence also German *wolking*) closed—and therefore means the cloudbase of the heavens.

Sincere is *sine* (without) and *cera* (wax)—means without alloy. Trench says that the honey which the Romans were in the habit of using when without wax were called *sincere*. Hence it means, honest, without the alloy of falsehood.

Or it may be derived from the custom of showing the statues on certain days by taking off their waxen covering—and thence sincere may mean—anything without disguise or undisguise.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

*Answer to the Fifth Question.*—(d) As bewitched dew as ever my dam gathered with raven's feather from pestilential moors, fall on Prospero.

Wicked from Anglo-Saxon *Wicca* to enchant—whence *Wicca* an enchanter.

(e) Having given you here my heart-string or the thread by which I am bound to this world.

(f). *Seb.* But for the pangs of your conscience—

*Ant.* Conscience say you, where lives that if it were a blister on my hiles, it would have some effect, *viz.*, force me to use slippers—but for this divinity—I do not find myself conscious of his existence in my breast—twenty such things that interposed between me and the possession of Milan, would thaw and dissolve themselves—yea, even if they were congealed hard before they could annoy or obstruct me.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

*Answer to the Sixth Question.*

True beauty dwells in deep retreats  
Whose veil is unremoved  
Till heart with heart in concord beats  
And the lover is beloved.

*Wordsworth.*

The character of Miranda resolves itself into the very elements of womanhood. She is gentle, mild, and unassuming ; she is these only. We find nothing in her character which is rough or which does not harmonize with the rest of her character. She is so perfectly unsophisticated, so tenderly susceptible of love, that all the other female characters, imagined by any other poet, cannot stand the comparison for a moment with her. Even let us suppose Shakspeare's, one of loveliest and sweetest creatures, it cannot for a moment be brought into contact with this pure child of Nature, with this Eve of an enchanted Paradise.

The only being with whom she can be contrasted is Ariel. Beside the subtle essence of this ethereal sprite, this child of elemental light and air, Miranda herself appears a palpable reality, a woman

breathing thoughtful breath ; a woman walking the earth with a heart as passion-touched and as frail-strung as ever glittered in a female bosom. But do we therefore compare her with any of those fancied beings with the ancient poets filled the forest depths, the fountains and the rivers ? No ; Miranda is a perfectly consistent *human* being. And if we presuppose all the circumstances in which she is placed, can we wonder that she should be such as she is represented to be, and that she cannot be otherwise. She has sprung to beauty under the immediate care of the princely magician Prospero ; her companions have been rocks and woods, the many-shaped and many-tinted clouds : her play-mates have been the ocean billows ; the very air had been made vocal by her father, to comfort and solace her ; Ariel and all his fellows ministered duteous to her very command. Being placed in such a situation, she is exactly as Shakespeare had represented her to be ; the impulses which have come to her are of nature ; and when she meets Ferdinand, she is at once enchanted ; and as Wordsworth says, *her* heart with *his* heart in concord beats.

RADHAGOBIND DOSS,  
*Hindu College, First Class.*

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*Answer to the Seventh Question.*—Our festivity is now at an end, these actors as I told you before are all sprites and are all dissolved into air—the unsubstantial air : and exactly like the unfounded superstructure of this dream, the sky-reaching turrets, the splendid domes of kings, the holy fanes—the mighty earth itself—aye with every thing that it holds shall vanish, and dissolving like this immaterial show, leave behind them no trace of their existence. Man and dreams are made of kindred stuff and the narrow sphere of our existence is compassed by a dreamful slumber.

Rack is a small cloud and in that sense Bacon uses it in his history of the winds.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

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*Answer to the Eighth Question.*—Thy ducal coronet I give back to thee and with all my heart do beseech thee to forgive me the injuries that I have done thee.

*Do* makes the verb following emphatic and is a verb.—Entreat is in the infinitive mood, the *to* being understood. In the Saxon and

German languages where the infinitive causes the verb to change its form—this becomes very evident and the analogy may be extended to the English.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

*Answer to the Ninth Question.*—O ye sprites of mountains, fresh pools and brakes and ye that do follow the retiring ocean, along the sands when it ebbs and fly back—when it flows, you tiny forms that cause the fairy ring on the green grass, by moon-light, so that the grass being made sour the sheep nibbles not. The popular belief is that these circles are formed by the dancing of the fairies in the night. I prefer to keep it green sour that being the original text and making complete sense I deem it unnecessary to make any change. To make a double adjective of green sour is not quite correct. Greensward would be unobjectionable were we sure that Shakespeare wrote it.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

### DRYDEN.

*Answer to the Tenth Question.*—Villiers, duke of Buckingham, is here alluded. The versatility of his genius, his bigoted adherence to principles which though often changed were seldom preferred for their truth. His changes were the effects of sudden impulse and not deliberate judgment, so that it was impossible to expect that he would stick long to anything. He was not only often changing opinions but his occupations also. All this is historically true and happily delineated. He was banished with Charles, returned with him, took possession of a very large estate on his return, stuck for sometime to the court, was a member of the Cabal—encouraged the French alliance, was privy to the secret money treaty, took disgust with the Government, went into opposition with Shaftsbury—spent all his large fortune in dissoluteness and died—

In the worst inn's worst room with mats half hung  
With floors of plaster and walls of dung  
Great Villiers lies, how changed from him  
That life of pleasures, that soul of dream.

Pope.

He castigated Dryden very severely in the Rehearsal which was composed under his direction and partly by him.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

*Answer to the Eleventh Question.*—Titus Oates was the celebrated witness who swore away the lives of so many Roman Catholics during the ferment of the Popish plot which was first contrived by him. He was originally a Jesuit but was thrown soon out of his living for his loose conduct.—He then became a Catholic and hovered round St. Omar—the English College of the Jesuits where it is probable he learnt the names of so many of the order. He pretended to have received his doctor's degree at

He is called by Dryden Corah. He was the most shameless perjurer that ever lived.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

*Answer to the Twelfth Question.*—Men of great parts are very nearly related to mad men and a very narrow distinction separates them. Had it not been so, why should Shaftesbury, crowned with riches and rank, forbear from giving to his old age the repose which it so much required? Torture himself because he could not get content, ruined in his life and spendthrift of his repose.

Reference is made to Shaftesbury.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

*Answer to the Thirteenth Question.*—(k) The Triple bond was the Triple league formed between England, Holland and Sweden. It was the work of De Witt—the grand pensionary and Temple D'Hona was the Swedish ambassador. The peace of Aix la Chapelle and the evacuation by Louis XIV. was its result. Its aim was to protect the decaying monarchy of Spain against the ambition of Louis XIV.

(l) Hydra was the fabulous monster which Hercules slew. It was a serpent with numberless heads and whenever any of its heads were cut off, it sprung up again. Hydra here means the numberless rebels.

(m) His only indications of sanctity was a ruddy countenance and sleek and oily countenance like that of Moses when he came down from the Mount Oreb. The skirts of the vestment of the church is red and therefore Oates's ruddy hue is called Church Vermillion.

(n) Hybla was a town in Sicily famous for its honey—the meaning here is that the words were as sweet as the honey of Hybla.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

*Answer to the Fourteenth Question.*—Adopting the definition of Whateley that resemblance is *stated* in the *Simile* and *implied* in the *Metaphor*, we see that the line

“Some lucky revolution of their fate” is metaphorical, inasmuch as the resemblance or analogy of the revolution of the stars and the consequent production of changeful events in the destinies of men, is rather *implied* than *stated*.

But the lines

“Our fortune rolls as from a smooth descent  
And from the first impression takes the bent.”

are made up of both Simile and Metaphor; for in the first line the analogy is *stated* and in the second it is *implied*.

And in the lines

“But if unseized, she glides away like wind,” the analogy of the wind gliding away is *stated* explicitly; and consequently it is a pure Simile.

RADHAGOBIND Doss,

*Hindu College, First Class.*

*Afternoon Paper.*

*Answer to the First Question.*—You have spoken honestly, your words prove you to be a loyal and obedient subject, and the honour of being such a subject sufficiently rewards you for your dutiful conduct, as the wickedness and baseness of the contrary character is a sufficient punishment.

THOMAS KALLONAS,

*Dacca College, Second Class,*

*First Year, Senior Scholar.*

*Answer to the Second Question.*—Cardinal—from *cardo*, a hinge—*i. e.*, one on whom every thing hinges. Conclave—from *con* together, and *clavo*, a key; *i. e.*, a meeting, in which the members are shut up in a room.

Consistory—(literally,) standing round; a meeting of the pope and the cardinals. Clinquant—from the Anglo Saxon *Clink*, (the modern German *klinken*,) to rattle, to gingle, to make a rattling noise. Chaucer has “the *clinking* of your bells.” Gay also uses the word in his “Trivia,” where he has “the clinking pattens.”

Paragon—from the Italian *paragone*, touchstone. So we have in Othello:—

“A maid  
“That *paragon* description and wild game.”

Truant—from *trouand*, an old name for a gipsy, a wanderer.

Sincere—from *sine* without, and *cera* wax, *i. e.*, without wax; pure.

RAJENDER NATH MITTRÉ,  
Hindu College, First Class.

*Answer to the Third Question.*—(a) He makes a list of all the gentry; and he includes within this list, all the men on whom he intends to impose cost in the inverse proportion of honour; and his own order without the cognizance of the honourable Council Board, must enforce the attendance of him whom he puts in his paper.

It may at first sight appear that there is a redundancy of prepositions in the passage (a). But *lay upon* might be used as a compound verb, in the sense of impose or confer. Moreover Latham considers the so-called prepositions *upon*, *after*, &c. as really no prepositions but adverbs and they are in truth prepositional adverbs or adverbial prepositions. We have however examples in which Shakespeare uses double prepositions.

“In what qualification is Marcius poor in?”—*Coriolanus*. *Out* is used in a peculiar sense, *viz.*, as the past participle of a verb. *Papers* is used as a verb for puts into the paper.

(b) I am but the shadow of my former self—and the outlines of this shadow is shrouded in a cloud by the englooming of my bright sun (to wit) the royal favour.

*Instant* might be used in the sense of impending. This is its original meaning as being made up of *in* and *stand*—on the brink of.

*Puts on* has for its nominative—shadow and means *it* (the shadow) enshrouds itself in a cloud.

By dark'ning my clear sun—taken as whole is in the case called in Latin, the Instrumental case.

(c) Not only is his wish (his passive inclination) unfriendly to you but his will (his active volition) is evilly disposed towards you. The difference between *wish* or *inclination* and *will* or *volition*, is that the one is active and the other passive. Thus in Hamlet Claudius says

"Pray can I not though inclination  
"Were as sharp as will."

The sentence (c) therefore means that not content with *wishing* ill to you—he was desirous of *doing* ill to you.

Disregarding this difference between *wish* and *will* we might make another meaning of the sentence—that is

His wishes not being friendly towards you (his king) his disposition must be very malicious.

But I prefer the former signification.

MOHENDRO LOLLO SHOME,

*Hindu College, First Class.*

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*Answer to the Fourth Question.* Anne Boleyn was not crowned till the resignation of More. In fact the approaching marriage was the cause of More's resignation, so that his successor Audley was the Lord Chancellor when the coronation took place.

More was the first layman that sat on the woolsack and was one of the most learned men of the time and the particular friend of Erasmus. He was the son of an English gentleman of moderate fortune and by hard study and application had acquired so much learning that when Wolsey was deprived of the Great Seal, no body was thought so fit to fill the Chancellorship as More. He had a *conscience* however—a thing which few men of that age could boast of. When the king intended to throw off his allegiance to the Pope and to marry Anne without obtaining a *divorce* from him: his (More's) devotion to the Roman Catholic religion and his integrity would not suffer him to sanction these proceedings. He therefore resigned theseal and retired to thebosom of his family. But Henry was of too vindictive a temper to allow him to differ from him or to disobey him with impunity. He was hauled up from his retreat and thrown into prison under the pretence of his countenancing the holy maid of Kent. The Venerable Bishop Fisher was in the same predicament with him—but his enemies being unable to prove his guilt—he was set at liberty. King Henry made various efforts to bring him over to his own opinions. Intimidation, coaxing and many other means were resorted to, but all in vain. More remained firmly attached to

his principles. On the occasion of the marriage, More was especially invited and had 20£ sent to him by the king to buy robes for the occasion, but More did not countenance the marriage by his presence. Enraged beyond measure by this obstinacy—the king issued a warrant against him—on the ground of his refusal to take the oath of supremacy. He was thrown into prison and many attempts were made either to make him acknowledge the king's supremacy or to force him to speak against it. But More was too prudent to fall into the snare. Among these expedients was the conversation held by the Solicitor General in his prison whilst his books were being removed. This conversation was made use of in his trial and though More did not implicate himself, yet by a tissue of falsehood and injustice, he was convicted of recusancy and was beheaded. Thus was the best man that the age produced deprived of his life by royal vindictiveness and perjury. To describe at large the learning and virtues of More would be impossible here. His integrity and adherence to his principle is attested by his death. Could he have brought himself to take an oath which the whole nation took and to countenance a marriage which the half of Europe thought to be valid—he might have enjoyed not only life—but rank, wealth and royal favour. Never was the honesty of any man so well attested and so completely without a spot. His love for his family is also well known. Yet not even the desire of enjoying their company—the entreaties of his wife could prevail on him to sacrifice his honor and honesty. His beloved daughter Mrs. Ropart—she who when he was being led to the execution with the axe before him and its edge turned towards him, fell on his neck regardless and I may say unconscious of the presence of the crowd—she I say on one occasion attempted to shake his virtue and save his life—and even she received such a reprimand that she never after dared to make the same request. The wit of More is universally known. Utopia bears testimony to his inventive power. His placid temper is proved by the serenity of his mind at the moment of his death. Indeed this was carried rather a little too far—and his facetiousness in the morning of his execution—rather shows a levity unbecoming the solemnity of the occasion. But he was so virtuous a man that we might not think ill of him—for not being impressed with awe on the occasion of his going before his Maker.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

*Answer to the Fifth Question.*—For the words in Italics Singer proposes the addition of *I* before *am*, and the turning of *have* into *true*, and read

—that I am true and will be.

This spoils the metre.

Collier changes *am* into *aim*; that does not make very good sense. The original reading requires no alteration; it makes good sense and perfectly grammatical—for if an ellipsis that is familiar to Shakespear and other writers, be supplied, the part in italics will be

—that am, have been and will be.

That this is the correct reading may be proved by the following quotations, in all which an ellipsis of the kind above mentioned has been introduced. In the preceding speech of Wolsey he says

“ My loyalty that ever has  
And shall be growing.”

In All's well that ends well, Lafean says

“ I shall speak better of you Monseaur than *you have or will deserve, &c.*”

Lastly—Bolingbroke says

“ This dedication will serve for any book that *is, has or will be published.*”

SHASHI BHOOSHUN BHADHOORY,  
*Hindu College, First Class.*

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*Answer to the Sixth Question.*—He was a man of boundless haughtiness always holding himself equal to princes. One that by overloading the kingdom with taxes, hampered it. With him the crime of Simon Magus (the selling of spiritual livings) was fair dealing. His own ideas and opinions only (and nothing else) guided or ruled his conduct. Even in the royal presence he was accustomed to speak falsehood—and was always hypocritical both in the letter and spirit of what he said. He was never compassionate except to those whom he wished to crush. His promises were like his former self—great; their performance like his present self—nothing.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

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*Answer to the Seventh Question.*—*Collars of S. S.*, originally formed a part of the royal livery and appear to have been first instituted by Henry IV. whose title was “Souveraine;” and the name of these collars was probably suggested by the initial letter of his motto. The privilege of wearing them was, afterwards, extended to all persons of a certain dignity, and were not, like the cross and the garter, confined to a particular order. They are now worn by the three chief justices of England, the lord mayor of London, and the lord mayor of Dublin.

MOHENE MOHUN ROY,

*Hindu College, Second Class.*

*Answer to the Eighth Question.*—The allusion here is to the two colleges which Wolsey founded, the one in Ipswich, the other in Oxford. The college at Ipswich was abolished soon after his death. The other college, *viz.*, Christ’s College which he established in the University of Oxford, exists to this day. There is a double meaning in the word “Christendom.” It may mean the whole Christian world or Christian Europe, as it generally does: or it may have a reference to the name of the College which he founded, *viz.*, Christ’s College. The word *dome* literally means a *house*; therefore Christiandom—means the house of Christ or Christ’s College.

RAJENDER NATH MITTEE,

*Hindu College, First Class.*

*Senior Scholar for three years.*

*Answer to the Ninth Question.*—

Ferdinand and Isabella

| their | daughters. |
|-------|------------|
|-------|------------|

Joanna—married to  
Philip of Austria.  
|  
Charles V.

Katharine of Arragon.

Ferdinand of Arragon and Isabella of Castile by their marriage united the whole of Spain under one head—they had two daughters Joanna who was tinged with insanity and married to Philip Archduke of Austria and son of the Emperor Maximillion; the issue of this marriage was Charles V. The other daughter of Ferdi-

nand and Isabella was Katharine married to Prince Arthur and afterwards to Henry.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

MILTON: PARADISE LOST.

*Answer to the Tenth Question.*—This inimitable production of the greatest epic poet of England is written in “*Heroic Blank Verse.*” The *Versification* however is very varied; sometimes beginning with a trochee, at others ending with a spondee; but generally it may be said to be composed of five iambuses.

*Alexandrine Measure* consists of six iambuses; and is so called from the fact of the ancient romances, chronicling the deeds of Alexander the Great, being written in that measure. We have an instance of it in Pope’s *Essay on Criticism*.

“ And like a needless Alexandrine end the song.”

We have also another instance :

“ He lifted up his hand that back again did start.”

Shakespeare in his *Henry VIII.* has the following one :

“ By learned approbation of the judges, if I am.”

*Service-Metre*—consists of seven iambuses. It is so called from the fact of the psalms being written in that measure.

We have an instance of it in Sir John Suckling :

“ But one request I make him that sits the skies above  
That I were freely out of debt as I am out of love.”

*Elegiacs*—consist of four line-stanzas in alternate rhyme. Gray’s *Elegy* is written in that rhyme.

*Riding Rhyme*—consists of two Heroic couplets. It is so called from the fact of Chaucer’s *Canterbury Tales*, supposed to be told by a party riding to Canterbury being written in that rhyme.

Pope’s *Essay on Criticism* is written in that rhyme.

*Spenserian Stanza*—consists of eight lines closed by an *Alexandrine*. The rhyme in the *Spenserian Stanza* may vary. It is so named from Spenser’s having written the *Fairy Queen* in that measure.

RADHAGOBIND DOSS,

*Hindu College, First Class.*

*Answer to the Eleventh Question.*—(a) An innumerable host of angelic beings deprived of their native Heaven on account of his guilt and thrust out of never dying glory for his rebellion; yet dutiful they remained though with their brightness faded; so when the aerial lightning has blasted the wooded oaks or hilly pines; with scorched crests their towering height though reft of foliage, stands on the steril heath.

(b)

“Or why  
Upon this blasted heath you stop our way  
With prophetic greeting.”—*Macbeth*.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

*Answer to the Twelfth Question.*—Milton was Latin Secretary under Cromwell.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

*Answer to the Thirteenth Question.*—The Olympian games were instituted by Hercules in honor of Jupiter. The Grecian youth from every state assembled on these occasions and exhibited their skill in various ways. Among these, the races—horse and chariot—were the principal. The goal was of the form of a *horse shoe* and the charioeteers wheeled round it as fast as they could—so that their aim was to drive as near the goal as they could do without being crushed, a catastrophe which often happened. Hence the allusion “shun the goal.” The Pythian games were instituted in honor of Apollo by Theseus. The Olympian games were held at the interval of four years, and the Greeks reckoned their time by it—as the 1st, 2nd or 3rd year of the 23rd 24th or such Olympiad.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

### YOUNG.

*Answer to the Fourteenth Question.*—Young's style appears to me a very laboured one. It has been justly remarked by Mr. Campbell that Young's ingenuity in the “*false sublime*” is very

great. In his poetry we find the inspiration of a mind fallen out with the world, viewing every thing in a melancholy mood and describing every thing with the gloomy colours of morbid sensibility. We do not find in his writings that happy felicity of diction which characterizes the style of Pope, nor that "full majestic march" and vigorous freedom we meet with in Dryden. His genius as it is observed by Dr. Johnson was the "inspiration of sullen discontent." His morose mind finds nothing worthy of desire in this world and finds this life as one uninterrupted tissue of disasters and sufferings. His vein for satirical writing however was excellent as we find in his poem on the "Universal Passion" and his cutting invective on Voltaire.

DWARKANAUTH MITTRE,  
*Hooghly College, First Class.*

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*Answer to the Fifteenth Question.*—Pultney was a famous statesman of the reign of Anne and George I. He began his career as a whig and ended it as a tory. In the beginning he was the friend and partner of Robert Walpole—so much so that when Walpole was sent to the Tower he strongly fought for him in the parliament and resigned office with him. When Walpole returned to office—he offered Pultney a barontage instead of an office. He consented to take the very subordinate post of the Cofferer of the Household in expectation of getting something better. He remained quiet for two years in their expectation.

But Walpole did not like to have him for his partner in the Ministry. "He had" says Lord Mahon in his excellent history of the reign of the Georges "two great vices in the eyes of Walpole, ability and independence, which unfitted him for office—for Walpole was determined to admit no nobâb near the throne." When his hopes were thus frustrated, he entered into a league with Bolingbroke and headed that dreadful opposition which brought down Walpole and in its shock caused even the monarchy to shake. As Earl of Bath he reaped only infamy and lost all the glory which he had won as Pultney. He is the Curio of Akenside. His avarice ruined him. His eloquence is spoken of in terms of enthusiastic admiration by the writers of the age.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

## THIRD CLASS.

*Morning Paper.*

## BYRON'S "CHILDE HAROLD."—CANTO III.

*Answer to the 1st Question.*—The poetry of Lord Byron is characterized by the glowing energy—the deep feeling and the passionate enthusiasm with which his thoughts are expressed. The genuine and all-powerful love of nature which formed so peculiar and such a predominant feature of the mind of our poet together with that awful gloominess of disposition which he contracted from brooding so violently over the many cruel wrongs he had suffered in the world gives to his poetical productions that appalling force—that fascinating though terrible charm and that dignity of expression which never fails to come home to the heart of every reader. It is in his poetry that we so often meet with "thoughts that breathe, and words that burn." But the muse of Byron though singularly successful in painting the individual traits of his own character was however as singularly deficient in pourtraying the character of other men. The gifted author of *Lara* and *Corsair* was essentially defective in the dramatic faculty, he could describe his own woes and sufferings with a master-hand but he was incapable of describing the broad outlines of human nature.

*Answer to the Second Question.*—Above my head the Alps rear their heads—those mountains—which are as it were the royal domes—the grand works of the creation—mountains whose mighty precipices piercing the clouds with their snowy tops have formed cold apartments of ice which strike the spectator with sublimity and in which Eternity seems to be enthroned—so perpetual and everlasting appear the snows to be. It is in those massy congealed halls of ice that the *avalanche*—the great thunder-shafts of snow—the fearful icy mass which crushes every thing beneath it like the thunder-bolt, it is in those places I say that the avalanche is formed. Such scenery serves to excite in the mind feelings of awe and fear and enlarges at the same time the sphere of our comprehension, it thus in a manner places before us the facility with which a mere heap of earth may reach the regions of Heaven and may leave self-assuming man confined in the pinfold here.

*Answer to the Third Question.*—The poet here alludes to the patriotic zeal of Harmodius, whose enthusiastic and undaunted courage in murdering Hipparchus though originating from selfish motives, proved at last the cause of freeing it thus from the tyranny of Hippias and Hipparchus. Harmodius and Aristogerton

were two Athenian youths in close friendship, it happened that Hippias in order to revenge himself for some fancied injury he had suffered at the hand of Harmodius mortally insulted his sister at a public religious ceremony and excited in his breast an eager thirst of revenge which blood could alone quell. Accordingly, in conjunction with his friend Aristogerton he availed himself of a religious feast which the Athenians celebrated, and concealing his arms under myrtle boughs, proceeded in quest of the tyrant-brothers, Hippias, suspecting some danger, contrived by artful means to discover the conspirators while his brother Hipparchus fell a victim to the fury of the injured friends. That youths used to carry arms concealed under myrtle boughs may be proved from the famous drinking song—

“With myrtle will I wreath, &c.”

*Answer to the Fourth Question*—The definitions of Prose and Poetry as given by Archbishop Whateley serve to place in a conspicuous light the material distinctions existing between them. Poetry brings before our minds a *vivid picture* of the thoughts which it clothes in its fairy garb. It expresses ideas in animated and burning language so that they leave a vivid impression upon our minds. Its language is the living language which goes at once to the heart and it is therefore very properly said to be *expressing* thoughts as if it spoke before us the sweet music of human lips. The language which constitutes Prose on the contrary is dull, lifeless and flat. It never leaves a strong impression upon the mind. It is the language which we *read* but the language of poetry is the language which we *hear*.

*Answer to the Fifth Question*.—The great victory which Hannibal gained over the Romans in Italy was that of Cannæ which threatened for a time to bring the Roman supremacy to the brink of destruction and to reduce the mistress of the world to that original obscurity whence she rose to the sovereignty of the then known world.

Flushed with the great victory of Cannæ the Carthaginian general marched to Campania and stationing his hardy soldiers in the luxurious capital of Capua began to enjoy for a time the pleasures of a triumph. But the loose pleasures of the Campanian capital enervated the courage of his troops and subsequently induced him to return to his native city for opposing the arms of Scipio in Africa. The fatal field of Zama gave a total defeat to Hannibal and decided the fate of Carthage. He subsequently retired to the court of Mithridates and committed suicide for falling in the hands of the Romans.

*Answer to the Sixth Question.*—Addressing the Rhine the poet says that any battle which was fought on thy banks but a day before left no trace behind : The stream of human blood poured from slaughtered necks of millions was washed away by thy waters, so that no stain of carnage could be seen and the sunbeam was clearly reflected on thy stream with its tremulous light, but in vain would thy waters oh ! majestic river try to sweep over a mind which is filled with a blackening or gloomy recollection of its past woes—all the prospects of whose pleasures have been at once blasted or blighted.

*Answer to the Seventh Question.*—Logically speaking, the expressions marked (a) and (c) are correct.

*Answer to the Eighth Question.*—Lord Byron died at Messolonghi in Greece while arduously engaged in assisting with his feeble arm the Greeks in their efforts to throw off the Turkish yoke.

*Answer to the Ninth Question.*—The early patron of Lord Bacon was the Earl of Essex who was subsequently executed for engaging in a conspiracy against Queen Elizabeth with whom he had been in the beginning of his life, a great favourite.

*Answer to the Tenth Question.*—*Simulation* is the act of pretending to those qualities which we do not possess—*Dissimulation* is the act of concealing those which we do possess.

*Answer to the Eleventh Question.*—Envy says Baron, like the rays of the sun beat more intensely upon a mound or a high rising elevation of earth than upon a level surface. This remark is very true for we see in the world that those who rise from an obscure origin to a conspicuous position in society are more liable to be exposed to the envy of their inferiors whom they leave below them while their superiors painfully alive to the growing reputation of a man whom they regard as an intruder upon their rank never fail to look upon him with an envious eye.

*Answer to the Twelfth Question.*—*Trivial* from the Latin *trivium* the place where three roads meet, means a mean, trifling thing since any thing placed in the meeting of three roads is *more trodden* than if it had been placed in any other part of the road.

*Sycophant* from a Greek word meaning one who steals figs. *Wit* (from a German word signifying to know) means one who knows.

*Answer to the Thirteenth Question.*—Malevolence or an earnest desire of doing injury to mankind leads many persons to expose their fellow creatures to all sorts of misery and yet these malevolent men would never heap upon the objects of their ill-will any such suffering which would involve a sacrifice of their own interests. Such mental constitutions seemed to be formed by nature in deviating from her right course and such are the very mental

constitutions which can best qualify men for being great politicians just as the knee-timber which are bad materials for building a house with are yet good materials for the building of a ship which shall have to brave the rage of waves and storms ; just so these illnatured men though unqualified for being good and peaceful citizens prove yet greatly able to conduct states through political dangers.

*Misanthrope*.—From two words signifying bad or ill and men means wishing ill to men.

*" Yet have never a tree," &c.*—This alludes to the anecdote related of Timon the man-hater by Plutarch in his life of Anthony, Timon one day came to the market place of Athens and mounting the rostrum told to the persons assembled near him that he had a fig tree in his garden on which many people had hanged themselves but as he intended to cut it down for the purpose of building on the spot all who had intentions of hanging themselves might avail themselves of the tree before it was too late.

Politics of for politicians of.

Knee-timber is timber of a tree the upper part of which is inclined at an angle to the main trunk.

*Answer to the Fourteenth Question*.—By sumptuary laws Bacon means *laws* regulating the expences of *living* which people are to adopt, such laws as they serve to prevent persons from coming to ruin and poverty and by forcing them to adopt a temperate mode of living are great antidotes against sedition.

*Answer to the Fifteenth Question* :

(a) By *abridgment* is meant the *surest and shortest way*.

(b) The battle of Actium was fought between Anthony and Octavius Caesar. Dolabella, the Roman general commanded on the part of Antony, *Caesar* led the naval forces in person.

(c) The battle of Lepanto which proved so great a death-blow to the rising power of the Turks was fought between the Turkish fleet under Ali and Uluzalli and the conjoined fleets of the Pope, the Venetians, the Emperor and the King of Spain under the gallant Don John of Austria natural son to the Emperor Charles V.

(d) *Set up their rest* means planted their hopes—the phrase is taken from the ancient usage of fighting muskets from a *rest*.

*Answer to the Sixteenth Question*.—In his essay on studies Bacon points out the essential advantages of study—it enables us according to him to multiply the sphere of our enjoyments in private life, gives a relish to our conversation in society and qualifies us for the general discharge and management of business—he then points out the different sorts of men who regard studies in different lights—“ crafty men” he says “ condemn studies, simple

men admire them," and wise men, use them. He then places before our view the importance of perfecting or rather tempering studies by a proper mixture of worldly experience. "Studies" he says "gives directions to the natural faculties too large except they be bounded in by experience," Bacon then goes on to distinguish the several sorts of books which are to be studied in different ways and last of all he describes the particular advantages resulting from the study of different branches of knowledge.

DWARKA NAUTH CHUCKERBUTTY,  
*Hindoo College, Third Class.*

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*Extra Paper.*

*Answer to the First Question.*—The syllogistic method was generally employed in the time of Bacon, and previously, since Aristotle flourished, in the management of all disputes. It was the engine employed by miscalled philosophers in the Middle Ages for wringing the consent of their auditors to their dogmas. If they could induce the assent of men to the premises—it could not be refused to the conclusion. Now the premises being general propositions are not easily comprehended by men, at least by the vulgar and if it fall in with the narrow sphere of their experience—they easily give their assent to it and are thus led into errors. Bacon himself explains it by saying—that syllogisms are not applied to (that is are not applicable to the raising of) general axioms and are in vain applied to intermediate ones—that is to propositions deduced from it. Bacon therefore means—that as syllogisms are not applicable to the raising of the general propositions employed by the dialecticians though they may therefore make *men* consent to the conclusions deduced by means of them yet those conclusions when tested by their agreement with facts will be found fallacious.

The proposition as worded by Bacon is too general and requires to be modified. It is true that syllogism is not the art of raising *axioms* which must be raised by means of Induction. Syllogism is the art of drawing conclusions from acknowledged data. If these last be false—the conclusion is necessarily false ; but that is not the fault of syllogism. If the data however be correct a correct conclusion will infallibly be deduced by syllogism. In this case it will catch not only the assent but things too. So that Bacon's proposition is not universally true. All the propositions of Euclid are capable of being stated in syllogistic form. It is

not to be argued thence that they are inapplicable to things. In modern times the deductive reasoning goes hand in hand with the inductive ; but all deductive reasoning might be formed into syllogisms and do really consist of syllogisms—only some of the terms are suppressed.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

*Answer to the Second Question.*—According to the ancient philosophers, such as Aristotle, *idea* is the sensible impression or as Locke terms it, the *image* of a thing in the mind. Later metaphysicians employ the term to signify a notion of a thing, or as some have expressed it more philosophically, a certain state of the mind. In this sense, then, *idea* is any notion in the mind ; it may be a false notion of a thing, or a true notion of it. But an *idol* (Greek  $\epsilon\deltaωλα$ ) is only a *false* notion of a thing, or as Bacon calls it in his “*Advancement of Learning*” *false appearances* of things, appearances which are the results not of true reflections from the nature of things. In this sense it has been used by Hallam but Stewart, Playfair and a host of other writers, understand by this term “*false divinities of the human mind*” to which men give allegiance in preference to truth. These philosophers take it in a figurative sense ; but the derivation of the terms, as well as Bacon’s use of it according to that derivation leave no doubt as to the term being employed to signify only “*the false appearances of things*.”

RADHAGOBIND Doss,  
*Hindu College, First Class.*

*Answer to the Third Question.*—The following are the sources from which the “*Idols of the Tribe*” originate : (1) the human mind is disposed to suppose more uniformity in nature than it can actually find ; (2) its prepossession in favour of certain opinions and dogmas it has once adopted ; (3) its narrowness in being pleased with those opinions which easily “*fill the imagination*” and “*strike the mind* ;” (4) its restlessness in the discovery of causes and its unwillingness to stop anywhere but at what are called final and efficient causes of phenomena ; (5) the bias of its affections and passions ; (6) the incompetency of the external senses and the disposition of the human mind to form erroneous and fallacious conclusions from their evidence ; (7) its

disposition to "abstract" nature ; i. e., to form *a priori* conclusions about her constitution without having recourse to experiment.

DWARKA NAUTH MITTRE,  
*Hooghly College, First Class.*

*Answer to the Fourth Question.*—The principal obstacles to the acquisition of knowledge and the progress of philosophy before the time of Bacon, were :—

1. The small space of time that has been favorable to the cultivation of philosophy.
2. The small share of attention which it received even during those periods when general learning flourished most. The human mind was too much occupied with Ethics in the first age, and with Theology in the second, to allow it to devote much time to this "mother of all the sciences."
3. Natural philosophy was considered in the light of a stepping-stone to something else—an humble handmaid to the arts of medicine and mechanics.
4. Its ends were not properly defined.
5. Utility and progress, the great objects of Natural Philosophy, were regarded by the ancient schools as below the dignity of man.
6. The facts on which it was based, were grounded upon traditions and a vague ill-defined experience.
7. Reverence for antiquity and the authority of great names, hindered men from making any further progress in Science.
8. It had had, in all ages, a formidable antagonist to contend with in the shape of inordinate religious zeal.
9. The institutions of colleges and academies were, in Bacon's time, singularly unfavourable to its improvement.
10. The pride which men felt in the number of works which they already enjoyed. Thus a belief of abundance, produced poverty.
11. A general despair which prevailed among mankind about penetrating further into the secret recesses of nature.
12. No rewards were held out to those who attempted at innovations.

To these causes ought to be added, the four different kinds of *idols* which beset all mankind, and the wrong method of induction then in use.

MOHENE MOHUN ROY,  
*Hindu College, Second Class.*

*Answer to the Fifth Question.*—Consent, given after mature deliberation of the point in question is the only true consent. Consent can never be considered as a safe criterion of truth. The natural indolence of men, their respect for great genius, in short the whole tribe of the *idola tribus*—contributes to make men consent to errors. It is almost a self-evident truth that when men do not take the trouble of thinking, their consent can give no validity to any opinion. Dr. Arnold in his Lectures on Modern History says “*Quot homines, tot sententia* holds good only where there is any thinking at all—otherwise there might be a hundred millions of men—and only *una sententia* if the minds of 99,999,999 are wholly quiescent.” So that it is evident that where there is no thinking at all—the opinion of a whole continent might be no more in reality than the opinion of one man. This was actually the case in Europe during the Middle Ages. Aristotle reigned sole Emperor of the thoughts of men and exercised a dominion over their minds as extensive and far more durable than ever was obtained by his renowned pupil over their bodies.

MOHENDRO LAUL SHOME.

*Hindu College, First Class.*

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*Answer to the Sixth Question.*—Atalanta was a heroine of the mythological fables who excelled very much in swift running and challenged all her suitors to a foot-race with her. The condition was that whoever outran her was to have her for his wife—but if she outran them, they were to become her slaves. Many a prince tried the *match* but none succeeded. Her speed was so great that she left them far behind. At length one of her suitors (Perseus, if I remember right) contrived to win her by the following stratagem. He carried with him to the race several golden balls—which he threw every now and then in a slanting direction out of the straight path. Atalanta charmed with their beauty ran to catch them and thus her lover outran her in the course and eventually married her.

Bacon applies this fable to those who deserting the straightforward path of philosophy—run aside to gather the golden fruits, by untimely application of the few principles they had learnt—to practical purposes, and thus lose the victory over nature and fail in the discovery of general axioms.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

*Answer to the Seventh Question.*—Experiments of light are such as are made—not with the view of being enabled to apply them to practical purposes but to discover truths for the furtherance of our philosophical investigations and tending to the discovery of axioms or laws of nature. Experiments of profit are such as are made with the view of being able to apply them immediately to some practical purpose. Thus the experiments made by Hooker with the pendulum though afterwards of great practical utility, were at the time only experiments of light. Thus the experiments made by Black for discovering the cause of dew were purely experiments of light. Again the experiments made by the Alchemists with the view of discovering the Philosopher's stone and the Elixer of life were experiments of profit though accidentally much light emanated from them. The experiments of Watt with the steam engine partake of both these characters.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

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*Answer to the Eighth Question.*—The ant exerts all its power to gather a few grains of corn and stores them up (without any way attempting to improve the food thus stored) for winter provisions. The empiric in like manner makes a few experiments but without any attempt to generalize them and applies them to his purposes. The spider weaves out of itself a web of great skill and refinement. The Rationalist without taking his materials from nature—produces a well-spun theory of the nature of the universe. It is subtle and refined like the web of the spider but is easily dissipated by the slightest breath of reason.

The bee gathers its materials from a variety of objects—flies from flower to flower—sucks the honey and prepares it for his hive. The true philosopher—in the same manner refers himself to a variety of objects, abstracts from them—the principle in which they all agree concocts it in his own mind and thus raises on axiom or law of nature which forms a part of his philosophy.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

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*Answer to the Ninth Question.*—The five grounds from which Bacon derives the hope that knowledge must needs be progressive, are—

1. From the benevolence of the Almighty Creator.

2. From the errors of past times and several methods that remain yet untried.
3. From a *natural history* compiled for its own sake and consisting of "experiments of light."
4. From the consideration that if so much has been discovered by chance much more must be discovered by a certain method of investigations carried by men of unbiased minds.
5. From his own example and the great high-road he points out to his brethren.

MOHENE MOHUN ROY,  
*Hindu College, Second Class.*

*Answer to the Tenth Question.*—Abstraction—means the abstracting or selecting or calling out, from among all the properties of a thing and only as it professes in common with their objects and the employment of these only in our reasoning. Thus when we reason about a triangle—abstractedly we disregard the particular lengths of its sides and many other things and consider it only as a figure having three sides and three angles.

Generalization is the collection of several things into a class and giving them a generic name. Thus when we refer metal to the class of minerals, we are said to generalize.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

#### BACON'S ESSAYS.

*Answer to the Eleventh Question.*—*Passive* envy as opposed to *active* may mean envy which does not lead us to take any active hand—in doing evil to the person envied. It is simply the feeling of discontent arising from a sight of others' happiness. It may however have another meaning here *viz.*, the envy of others towards them as opposed—to their own envy towards others of which last he has been hitherto speaking.

MOHENDRO LAUL SHOME,  
*Hindu College, First Class.*

*Answer to the Twelfth Question.*—1. It spoils the feathers of round flying to the mark." It prevents straightforward conduct or going straight to the object of our desire.

2. It keeps aloof all those who would have assisted us had they precisely known our object.

3. It enables our enemies to misrepresent our views.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

*Answer to the Thirteenth Question.*—(a) Every elevation to high place and rank in society is by a crooked way ; and if that society be distracted by factions, it is wise and politic on a man's part, whilst he is rising to greatness to join one of these parties, but after having once succeeded in obtaining the place he coveted, it is prudent for him to keep himself neutral between them.

(b) Bacon here means to say, that men usually become great by unfair and dark means ; i. e., to use his own emphatic words they come to "dignities" by "indignities." They can never accomplish the objects of their ambition without "the illness" which attends them. He also, as a worldly politician advises them to secure to themselves the aid of a powerful party in the community at the commencement of their career, that they may be able to employ its interests in their favour but to keep themselves neutral after the accomplishment of their projects.

DWARKA NAUTH MITTRE,

*Hooghly College, First Class.*

*Answer to the Fourteenth Question.*—If we once regard a coming danger as trivial and if instead of taking proper pains to prepare for meeting it, we bury ourselves in confident security, it generally happens that such dangers falling upon us unawares injure us severely ; and in this manner many persons have been lulled into security by the apparent lightness of dangers and thus deceived, have been subjected to greater evil than what could have fallen upon them had they taken previous precautions for meeting them, and resolutely stood to face them. "Security" says Shakespeare "is mortal's chiefest enemy." Buried in indolent repose and fancied security, we often find that those very dangers which once appeared to us as light and insignificant are now threatening us, and ready to burst upon us with irresistible fury. It is a common observation that fate strikes her blow in the "sunshine."

DWARKA NAUTH MITTRE,

*Hooghly College, First Class.*

*Answer to the Fifteenth Question.*—Assuredly there are some men who know the springs and falls of business, *i. e.*, who understand when the matter can be easily managed and when with difficulty ; but their understandings cannot drive further into the business ; they cannot understand the essential part of it. In this respect the contrivances of their understanding resemble a house, that hath convenient modes of entering into it and of ascending it, but never a fine room, *i. e.*, those contrivances enable them to enter into business in times of ease, and to leave it in times of difficulty, but not to take the lead in it. Therefore these men can find out pretty means of escaping without any danger to them ; yet they cannot examine or debate matters. But still these men would take advantage of their defect, and would pass for men, who are able to manage affairs.

RADHAGOBIND Doss,  
*Hindu College, First Class.*

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*Answer to the Sixteenth Question.*—In the *Aeneid*, Virgil speaks of the birth of Fame. He says that the giants, begotten of the earth, made war upon Jupiter and other Gods ; but that they were defeated. For this, their mother earth brought forth a daughter, called Fame to revenge on them. Bacon has used this story in the *Essay on “Seditions and Troubles.”*

RADHAGOBIND Doss,  
*Hindu College, First Class.*

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### Smith's Moral Sentiments.

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#### *Morning Paper.*

*Answer First.*—According to Smith, we judge of the propriety or impropriety of the affections and sentiments of other people by their concord or dissonance with our own. We neither have, nor can have, any other means of forming our judgments with respect to them. We, in imagination, place ourselves in the situation of the person whose sentiments we want to judge of, and according as, we find, we can or cannot enter into the motives which influenced his conduct, we regard his sentiments and affections, as proper or improper, suitable or unsuitable to the objects which excited them. Thus, if my sympathy keeps time with the grief of my friend, I cannot but admit the reasonableness of

his sorrow. The exceptions which occur to this general rule are, according to Dr. Smith, only apparent. A stranger passes by us with all the marks of the deepest affliction on his face ; and we are immediately told that he has just received the news of the death of his father. It is impossible that in this case we should not approve of his grief. Yet it may often happen without any defect of humanity on our part, that, far from entering into the violence of his sorrow, we should scarcely feel the first movements of concern upon his account. He and his father are perhaps entirely unknown to us, and we do not take time to picture to ourselves the different circumstances of distress which must occur to him. But in this, as in many other instances, the rules derived from our preceding experience correct upon the impropriety of our present emotions. We have learned from experience, that such a misfortune naturally excites such a degree of sorrow, and that, if we had taken time to consider all his circumstances, one by one, we should doubtless have most heartily sympathised with him. It is upon this conditional sympathy, that our approbation of his sorrow is founded, even when that sympathy does not actually take place.

*Answer Second.*—Our sympathy with those passions which take their rise from the body is very faint, because our bodies, not being in the same state with that of the person principally concerned, cannot be expected to enter fully into them. To the person himself, as soon as they are gratified, the objects which excited them, cease to be agreeable. He now can enter as little into his own passion as any other person. He looks round to no purpose for the charm which transported him the moment before. When we have dined we order the covers to be removed, and we should, in the same manner, treat every other object of our most impetuous passions, if it were endeared to us by no other passions than those which originate from the body. For the same reason, to cry out with bodily pain, is always regarded as unmanly. Nothing is so soon forgotten as bodily pain. The moment it is gone, the whole agony of it is over.

But it is widely different with those passions which originate from the imagination. The condition of my body can be but little affected by the alterations that are brought upon that of my companion. But my imagination is more ductile, and more readily assumes the shape and configuration of those with whom I am familiar. It is on this account that a disappointment in love or ambition will produce a more lively sympathy than the greatest bodily misfortune. The same takes place with regard to all other passions which originate from the imagination ; and we have always a greater propensity to sympathise with them than with those which take their origin from the body.

*Answer Third.*—That our sympathy with sorrow is more lively than our sympathy with joy, Dr. Smith shows from the following considerations:—

1. Our sympathy with sorrow is *more universal* than our sympathy with joy. Though the sorrow be excessive, we still can have some fellow-feeling with it; but we have no such indulgence for the excess of joy. The man who dances and skips about with that foolish and intemperate joy which we cannot enter into; is the object of our contempt and indignation, our heart renounces all sympathy with him, and we term his conduct, levity and folly.

2. Pain is a more pungent sensation than the corresponding pleasure. The mind is much more depressed below its ordinary state in the one case than raised above it in the other. It is on account of this reason that we have a more lively perception of our sympathy with sorrow than that with joy.

3. Over and above all this, we often struggle to keep down the emotions which the view of a sorrowful situation excites within our breast. We endeavour, for our own ease, to suppress them as much as we can, and we are not always successful. The struggle which we thus make with them bring them more prominently *into* our notice; but no such thing happens with regard to our sympathy with joy. When there is any envy in the case, we do not feel the least inclination to it; but when there is no envy in our way, our heart abandons itself with satisfaction to that delightful sensation.

From these considerations, it is evident that though our sympathy with sorrow is not more real than our sympathy with joy, it comes into our view in a more conspicuous manner. But on the other hand, our sympathy with joy approaches more nearly to what is felt by the person principally concerned, as will appear from what follows. The condition of the greater part of mankind is, on the whole, more happy than miserable. Between it and the highest pitch of prosperity the interval is a trifle; but between it and the lowest depth of adversity the distance is vast and immense. Consequent misfortunes depress the mind of the person principally concerned much more below its ordinary state than good fortune can ever elevate him above it. The greater part of mankind, therefore, must depart much more from the ordinary state of their mind to enter into his feelings in the one case than in the other. Our sympathy with sorrow, therefore, must necessarily fall much more short of the violence of what is felt by the sufferer. That this is actually the case, Dr. Smith shows by many familiar and beautiful illustrations, some of which are well deserving of a mention. It is upon account of this cold sensibility of mankind to the misfortunes of others, that magnanimity in the midst of great distress is so divinely graceful. It

is upon account of this same principle, of this same propensity of the human mind to sympathise more with joy than with sorrow, that we are ashamed to weep before a company, though the occasion be such that our tears are perfectly natural.

*Answer Fourth.*—From what precedes, it is evident that our propensity to sympathise with joy must be much greater than our propensity to sympathise with sorrow. It is this principle that leads us to make a parade of our riches and power and to conceal our poverty. It is this same principle that makes us peculiarly interested in the fate of men of rank and influence. When therefore any misfortune happens to these, it excites our commiseration in the highest degree. We are much concerned to see that any thing should occur to disturb the repose of those who possess such great and almost infallible means of acquiring perfect happiness. We heartily desire to see this system, which only falls short of absolute perfection complete in itself, and are therefore peculiarly sorrowful when anything happens to disturb or to destroy it. All the innocent blood, shed since the commencement of the Civil War of England, did not excite so much pity among the English people as the execution of one *great man*—Charles I—and one who had previously tyrannized over them.

*Answer Fifth.*—The *love of praise* is the desire of obtaining the approbation and admiration of our fellow-creatures. But the *love of praiseworthiness* is the desire of rendering ourselves the *proper object* of this approbation and admiration; or of becoming that thing (as Dr. Smith expresses it), which, though it should not be praised by any body, is yet really deserving of this praise. The love of praise and the love of praiseworthiness agree in this particular, that they both have a reference to the sentiments of other people; but in this case, the reference is to what actually are, and in the other case, to what ought to be, or upon a certain condition would be, their sentiments with regard to our conduct. These two principles of our nature may be, more briefly, thus expressed. The *love of praise* is the desire of obtaining the approbation of all about us. And the *love of praiseworthiness* is the desire of obtaining the approbation of *the man within the breast*, or of *the supposed impartial spectator*.

*Answer Sixth.*—As it has already been once or twice observed, pain is a more pungent sensation than the correspondent *please*. The one depresses the mind much more below its ordinary state than the other can elevate it above this ordinary state. Unmerited reproach therefore must, since it is a painful emotion, give more pain than unmerited applause can give us pleasure. There are other reasons which lead to the same conclusion. When any one praises us for qualities which we do not possess or for motives which had no sort of influence on our conduct, praises not us but

another person; and the *man within the breast* immediately humbles the pride which we might otherwise feel. This unjust praise, besides, is, in many cases, more humiliating than any just censure, inasmuch as it serves to call to our mind the most painful of all ideas, the idea of what we ought to be, and what we are not. Over and above all this, a denial rids a man of all foolish and impertinent applause. But it does not rid him of unmerited reproach. None doubts his veracity when he disclaims his praise: but it may be doubted when he denies any crime that is attributed to him. He is thus doubly enraged at the falsehood of the imputation and at the undue credit which is given to it by his friends and companions. He is deeply mortified at the thought that they should think so meanly of his character as to suppose him capable of committing the crime. If he is brought to capital punishment upon account of this imputed crime, the shades of death close over him more thick and gloomy than over other persons. It is not so much the thought of death that torments him so much; but to have his name held in everlasting infamy, set up for the hand of scorn to point at, and to be associated in the minds of his dearest friends and relations with nothing but what is horrible and dreadful, are what he deplores most. His mind becomes "a hideous phantasma;" and he dies a terrible death.

These combined causes render the pleasure experienced from unmerited applause very small compared with the pain felt by unmerited reproach.

MOHENE MOHUN ROY,

*Hindu College, Second Class.*

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*Afternoon Paper.*

*Answer First.*—The following conditions must be fulfilled before an action can be rendered, in the eyes of the impartial spectator, the complete and proper object of gratitude and resentment:—

1. The action must be the means of doing good to *somebody or bodies* in the one instance and of evil in the other before it can be capable of exciting the feelings of gratitude or resentment. Gratitude is the feeling which impels us to return good for good and resentment evil for evil—it is evident therefore that unless some good has been done there can be no gratitude or in the other case, unless some evil is inflicted there can be no resentment. Many other feelings, as esteem, love &c. in the one case, and hatred, loathing &c. in the other, impel us to take delight in the happiness or misery of the object of those passions but none of them impels us to take an active hand in it.

2. The good or the evil must have been done with a design—for where there was no design—that is where the good or the evil resulted accidentally—there can be no merit or demerit accruing to the agent—so that although, the passions might be excited merely by the goodness or badness of the result there can be no complete gratitude or resentment. Thus there can be no resentment against a stone which accidentally hurts me.

3. It must not only have been done by design, but also by such a design that is approved of in the one case and disapproved of in the other. For where there is no approbation for the motive of the agent, there can be no proper gratitude due to him. The man who bestows on another man an estate merely because his name and surname agrees with those of the other can deserve but little gratitude at the hands of the latter. Again where there is no disapprobation for the motives of the agent who does an injury—there can be no sympathy with the resentment of the party injured. If the punishment which one man inflicts on another be entirely approved of by me—I cannot consistently partake in the resentment of the party punished.

The three conditions then are—1, There must be good or evil done. 2, It must be done from design. 3, And from such a design as is approved of in the one case and disapproved in the other. We have seen also in some measure that the passions of gratitude and resentment themselves are proportionable to their exciting causes. For let a man exert himself as much as he can, yet if he fails to produce the good or evil that he intended—the gratitude or resentment is not complete. We do not feel ourselves so much obliged to him in the one case or so much angry with him in the other as if he had succeeded in doing the good or evil which he intended. Even when our benefactor succeeds in doing us the good he intended, yet if some other person also had some hand in it, we think his merit so much the less. The same takes place *mutatis mutandis* with regard to resentment. On the other hand if some good or evil accrues to another although it was not intended, a shade of merit attaches itself to the action in one case and of demerit in the other. But still the sensation thus excited is very imperfect. Who ever felt perfect gratitude or resentment for a brute or inanimate object because it had been cause of good or evil to him. I have also shown that there can be no gratitude or resentment which the impartial spectator will sympathize or go along with unless the action was founded upon proper motives.

*Answer Second.*—It is, to give the reply of Dr. Smith, the regard to the opinion of the impartial spectator. Men are naturally selfish, but when they place themselves in the situation of the impartial spectator, they find no reason to give a preference to

themselves above their fellow-men. To the impartial spectator every other man is as good as myself; so that when we attempt to do an act of injustice to another man or even wish to do so, he cries out with a thundering voice that we are in the wrong and that nobody would sympathize with us in our unjust preference to ourselves. Similarly—when the interests of a great many can be secured by a sacrifice of our own; by a reference to the impartial spectator, we learn that the interest of the great many ought to be preferred to that of one, so that by sacrificing our own interest, we are doing an action with which the impartial spectator would gladly sympathize. It is this desire to obtain the approbation of the impartial spectator which impels us to self-sacrifice. It is this which impelled Decius to throw himself in the midst of the enemy. It is this which prompted Codrus to go disguised as peasant to the hostile camp and provoke his death. The soldier who advances in the *forlorn hope* is not devoid in self-love which prompts him to save himself—but he knows that the impartial spectator can never go along with him in this undue preference of self; and that by the contrary conduct, he does what every impartial spectator thinks he ought to do.

*Answer Third.*—According to Smith, all our decisions on the propriety or impropriety of conduct are first exercised on others. When we see another man commit an action we are immediately conscious of a feeling of approbation or disapprobation. Exercising thus a judgment on the conduct of others, we come to learn that others exercise a similar judgment on us. Hence we try to avoid those actions which are the subject of the disapprobation of others, (*i. e.*) those actions which we disapprove of in others, and to do others which are approved, (*i. e.*) those which we approve in others. Thus we form rules for ourselves, that such a class of actions is to be avoided and such another we should perform whenever we can. We do not form the general rule first and then judge of particular actions—but from judging particular actions—we come to draw general rules. Thus when we see one man murder another, we are struck with horror at once—there is no time to reflect that there is a general rule which prohibits murder.

Smith attempts to prove by several arguments that these rules are justly regarded as Laws of the Deity.

In rude times when men attribute to the Divinity the same passions which influence them—people believe, that on surveying an action God himself must be actuated with the same passions that the mortal beholder feels. When a man is wronged he calls upon Jupiter to punish the offenders—so that they attribute to the deity the origin of the rule which provides that such and such actions deserve rewards and such others punishment. Again as the laws of a Prince were accompanied with the sanction of rewards

and punishments, so these laws, when they are obeyed produce a self-satisfaction which is its reward and when violated the punishment comes in the shape of mental anguish. Who bestows these rewards and punishments? The Deity no doubt, and he bestows them that men might obey those rules and dread to violate them. Again it is a rooted principle in our mind—that though we see vice triumphant in this world and virtue depressed—yet God will compensate the misery of the one and punish the injustice of the other in a life to come. Why should we believe so, unless we believed that the rules of conduct enjoining virtue and forbidding vice were laid down by the Deity. The laws which make vice triumphant and virtue depressed are also laws of nature, since the former acts in a manner which we know—would ensure success according to the unalterable course of things—and the latter in a manner which must bring ruin on himself—but still so strong is our belief that these rules are the laws of the Deity—that we are sure that this distribution will be reversed in the life to come.

*Answer Fourth.*—Our ideas of beauty and deformity—depends in a great measure though not entirely on association. Father Buffier has attempted to prove that depend entirely on that principle; but Smith contends that we have an original idea of beauty. He however allows that that idea is very easily capable of being changed by habit and association. For example the idea of human beauty in China and Africa is quite different from that of Europe. In Switzerland where swollen throats were very common—a plain throat was formerly thought a deformity—but murder is every where a murder and disapproved of. Smith however allows that though our moral sentiments cannot be entirely perverted yet they may be very much corrupted by association. Thus in the reign of Charles II. a certain degree of moral depravity was in fashion. A certain degree of licentiousness was associated in most minds with nobility of birth, generosity and loyalty of disposition, and many other virtues: whereas austerity of manners was generally connected in their minds with cunning, craft, cant, hypocrisy, rebellion and thus it became unfashionable. Yet this depravity was confined within limits and when the effervescence of loyalty cooled people became nauseated with the loose manners of the court. The All-wise Disposer of all things did not leave our moral sentiments to be regulated by the uncertain tide of fashion. He has laid the foundation of those sentiments deeper in the mind of man than to be washed away by such shallow tides. The perverted sense of religion alone sometimes enables men to get rid of them. Invertebrate habit and association, though they might render us callous to the stings of conscience, can never so pervert our judgment as to make us approve of vice in our calmer moments. Even the most reprobate sinner when he is required to give his candid and unbiassed opinion would express his disapprobation of

that very conduct which he pursues though perhaps he will attempt to palliate it. Beauty and deformity are things in which men may vary in their opinions without causing much confusion in society. But vice and virtue are things about which men cannot differ much without causing the ruin of society. God has very wisely therefore subjected these latter to the dominion of custom and fashion in a less degree. It is only in particular acts that any gross perversion can take place in the sentiments of a nation. Thus among the polite Athenians—the practice of infanticide was not only tolerated but defended by such men as Plato and Aristotle; but if any such perversion is to take place in the general sentiments of a nation, society would crumble at once into atoms.

*Answer Fifth.*—In barbarous times many practices were tolerated from necessity, which would appear grossly perverted in more refined ages. Thus in times when jurisprudence is not reduced to a science and there are no regular tribunals of justice, men are obliged to tolerate private revenge. In this state the moral sentiments of men are not shocked—by murder committed in retaliation of private injury. The practice of duelling is also tolerated on the same principles. Thus in feudal times many customs and usages were thought good which would be now considered abominable. The circumstances in which men find themselves placed—make these usages not only tolerable but extolled and praised. Thus again when food was scarce the exposure of infants was not thought a crime. Generally therefore as the circumstances of men improve their notions of morality improve also. When the temptations for committing crimes diminish, crimes diminish also, but when crimes are common it cannot be expected that their abhorrence of crime would be as great as in later times when their minds are not habituated to the contemplation of crimes. Thus it happens that the moral standard by which men are in the habit of judging the conduct of their fellow-men improves with the improvement in their circumstances. Nobody feels horrified at a murder when murder is an every-day occurrence. In Italy when poisoning was very common it was scarcely thought a crime. Machiavel expresses so very little horror at the cruelties committed by Cæsar Borgia that one is astonished at it. The standard of moral judgment was very low—civilization also was in a very low stage.

*Answer Sixth.*—*Commutative* justice consists in refraining from doing to others what we ought not to do towards them. It is that sort of justice which we might be punished for disregarding. *Distributive* justice consists in doing towards others what in our actual circumstances we ought to do towards them; in giving them that which they deserve at our hands or has a right to expect from us.

Grotius gives similar scope to his two-fold division of justice—one of which he calls—*Justitia Expiatrix* and the Latin of the other I forget at this moment—but this explanation of them is similar to what I have explained above.

This two-fold division of justice has given rise to two different sects of writers in modern times. The writers on jurisprudence treat of commutative justice and of the punishments which we incur by violating the rights of our neighbours. The casuists have for their province the treatment of that subject which relates to what we are in duty bound to do, to our neighbours. They sometimes encroach however on each other's province; the writers on jurisprudence dilating on distributive justice—whilst casuists meddle often with commutative justice. Grotius, Puffendorf, Pothier, Jeremy Bentham are all writers on jurisprudence whereof the first three often encroach on the province of casuistry. By speaking of the two-fold division of justice, I do not mean that Smith divides justice into two parts—he mentions four different meanings of justice.

*Answer Seventh.*—According to Epicurus virtue consists in prudence; in taking good care of our own happiness. According to him bodily pain and pleasure are the ultimate objects of human attention. But the pain and pleasure of the present moment can never be very great and therefore our chief pleasure arises from a proper constitution of the mind. He explains the four cardinal virtues prudence, fortitude, temperance, justice as deriving their authority from utility, from being necessary to our happiness.

It is evidently inconsistent with Smith's theory, inasmuch as we ourselves and not the impartial spectator, is the judge of our own happiness. Virtue according to Smith does not consist, in the sympathy of others with our happiness, but in our feeling that happiness. Plato, Aristotle, and Zeno all three make virtue consist in propriety, though they differ much in their opinion of the standard of propriety, but Epicurus discards propriety at once. Plato made virtue consist in the subjection of the irascible and concupiscent passions to the dominion of reason, Aristotle made it consist in the habit of acting according to the right nature of things in avoiding both extremes. Zeno, in proper selection and rejection of the objects presented before us; in all these we see, that propriety is the quality of virtue but in the Epicurean system—personal happiness or misery makes all the distinction between virtue and vice.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

## History.

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### Morning Paper.

*Answer First.*—The monastic institutions of the Middle Ages of Europe have been found to be beneficial to the cause of civilization and good government in more than one respect. It was, by the instrumentality of these institutions that what vestige of Roman civilization lingered in Europe after the downfall of the Western Empire, found a footing in the disturbed and confused chaos of the dark ages. Had it not been for these institutions, the literature, arts, and sciences, would have been for a long time things without names in Europe. It was only in the retirements of the monasteries—that men trained up for the orders and therefore the only individuals who ever learnt anything of letters, found not only the opportunity, but the inclination to pursue their inquiries in abstract subject. None else had either the inclination or opportunity to pursue these studies. All the other men were engaged either in committing or in repelling aggressions. The security of life and person without which no body can devote himself to literature and science was also found no where else except in the monasteries. Mr. Macaulay in one of the finest passages in his writings compares the church to the Ark of Noah. As in the time of the universal deluge, this was the only receptacle for the seeds of the future creation; so in the general deluge of the barbarians, which overwhelmed civilization, the monastic institutions alone contained the seeds of the future regeneration. The monks moreover were the only advisers whose counsel was worth attending to, in those dark and disturbed times. In matters of difficulty and perplexity, when we are pulled in different directions, by different motives, when the path of duty was clearly discernable, the monks were the only advisers who had knowledge and judgment enough to direct men in the road of rectitude. The science of casuistry was deeply studied by them and was far more efficacious in those gloomy times than now. It was the influence of the monks to which England is indebted for the abolition of slavery and the dominion of race over race.

Dr. Arnold in his Lectures on Modern History has clearly demonstrated that the supremacy arrogated by the Pope could not have been an unmixed evil in the Dark Ages—though it became so in after times. The Pope was the universal tutor of Europe in the Middle Ages when nobody out of the orders knew how to write his name. It was necessary that in ages when *might was right* every where; when the voice of justice was scarcely

heard—that there should be somebody capable of awing men into a sense of justice. It was the fear of the Pope, which prevented monarchs and noblemen from tyrannizing over their subjects and vassals. It was the power of the Pope which first humbled the tyrant John. It was the fear of ex-communication which restrained the hands of many villains beyond the control of the civil authority. It was in more refined times then that the authority of the Pope became an unmixed evil.

*Answer Second.*—The Plantagenet Kings of England, were foreigners whose home was in the continent. The English race were considered as a conquered people and treated as slaves. The conquerors spent a greater part of their time in the continent; the revenues drawn from England were enjoyed there. Hence it is evident that had the Plantagenet Kings been able to bring France altogether under their subjection, Paris or Bouen would have been the seat of their government. England would have become an appendage to the crown of France. The English would have remained for ever a servile race—a race of boors and serfs. The English language “the language of Burke and Milton” would have become a provincial dialect without a grammar, without a literature. The discoveries of Newton and Bacon would have perhaps remained unknown to this day. No Englishman could have enjoyed a share in the government of his country unless he became a French in sentiments and manners. The civil and ecclesiastical functions of the state would have been in the hands of foreigners. The English depressed in heart and head by long subjection to foreign tyranny would have become what the Bengalese is now. He would have been obliged to see with pain and anguish of soul the resources of his country in the hands of foreigners, without having the power to help it. He would have been obliged, in short to feel the most degraded position of a thrall to a foreign master.

The event which rescued England from such a fate was, the seizure of the continental dominions of John by Philip of France. Driven from their continental strongholds the Normans were cooped up within the narrow confines of the isle together with English. Neighbourhood and the necessity of mutual assistance obliged them to mix more closely with the English. By the interchange of mutual good offices, by intermarriage—by frequent communications, the two races became blended into one and thus was formed a new race doomed to exercise a high influence in the destiny of the world. Thus then, the weakness of the English king and the energy of the French—was strangely enough the cause of the salvation of England. Macaulay remarks that the energy and the wisdom of the Plantagenets who preceded John was baneful to England—but the weakness of the

last was her salvation. France on the contrary was all along governed by a race of weak kings—and Philip was the first king who for a long time, swayed the sceptre with a strong hand. Thus by a strange combination of circumstances England was saved from an inglorious vassalage. Had John possessed the energy of any of his Norman predecessors or Philip been as weak as their contemporaries in France, the doom of England would have been inevitable.

*Answer Third.*—At the time that Edward III. held the sceptre of England the incorporation of the races which dwelt on the English soil had been complete. The king was an English king. England was his home. His conquest in France was therefore the conquest of the English over the French. According to Mr. Macaulay, the tendency of the conquests of the Plantagenets of the 12th century was to make England a province of France; but the tendency of the conquests of Edward was to make France a province of England. The victories of Poictiers and Cressy were the victories obtained by the united English people obtained over their ancient enemies—whereas in the 12th century—the victories of the Plantagenets were the victories of one continental prince over another. Still, it is the opinion of Macaulay, that the conquests of Edward III. and Henry V., were not for the good of Europe in general or of England in particular.

It would have been a great detriment to the progress of the English nation, had they stretched their empire over France or Europe at large. Such large empires are not well adapted to the development of human energies. England, says Mr. Macaulay, enjoys a far more enviable position—as the pattern of a free State, and the civilizer of the world than if she had early in the Middle Ages obtained a dominion as extensive as that of Rome and been stinted in her future progress.

*Answer Fourth.*—Macaulay thinks that when in the reign of Henry VI., the English were deprived of all their continental dominions, by the conquests of Charles VII. in France; too many noblemen who formerly derived a part of their revenues from France were cooped up, within the narrow boundaries of the English isles. The habit of luxury which they had acquired continuing the same, whilst their means of enjoyment were stinted; they fought with each other—for extending their possessions in England. Rapine, injustice and violence followed and the nobles arranged themselves against each other, with the hope of enriching themselves at the expense of their enemies. Thus says Mr. Macaulay, the party of the Yorkists survived the marriage of Henry VII. with Elizabeth, and set up a series of imposters one after another—the party of the Lancastrians clung round a line of bastards. In the course of these civil wars such a

number of noblemen were slain that in the end—the lands in England were sufficient to maintain in opulence the few that remained. Slavery was fast disappearing from England during all this time. We lose almost all trace of during the reigns of the next race of kings. Those who were mere serfs or menial slaves,—became about this time tenants and copyholders of those farms which they were formerly obliged to cultivate for others. The abolition of slavery was one of the great social changes which in Europe—had the greatest influence on the progress of civilization.

*Answer Fifth.*—According to Macaulay, the English aristocracy was the most democratical of any nation in Europe. In England, all the children of a nobleman except the first became commoners and even the eldest as long as his father lived was no more than a commoner. On the other hand, every commoner has the prospect of becoming a nobleman, if he could signalize himself so as to deserve the public gratitude. In England the aristocracy had few distinguishing privileges except that of sitting in the house of Lords and being judged by them. Even this latter is only the consequence of the law, which provides that every man was to be judged by his peers. So that English noblemen have none of that contempt for their untitled fellow countrymen which they have in other countries. In England—the offices of government are open to all alike without distinction of their hereditary rank. In France on the contrary none but noblemen could fill the highest offices under government. Indeed so little superiority is attached to nobility in England that many commoners voluntarily refuse the honor of being elevated to the highest ranks of the nobility. Pitt—the peer-maker not only refused to accept a peerage but in his last will, forbade his sons to accept of that distinction under penalty of being disinherited. When Walpole offered a peerage to Pulteney, instead of an office, it was indignantly refused.

"Good blood indeed" says Macaulay "is in the highest estimation in England but between good blood and the privileges of the nobility there is no natural connection; escutchians as large and pedigrees as long may be found out of the House of Lords as in it." The honour of knighthood was open to every body who could amass by industry and prudence a sufficient fortune or signalize himself honorably in the service of the country. Moreover there were frequent intermarriages between the two orders, so that it would not be difficult for any gentleman to trace his connection with some Lord or Lords. The House of Commons, where the Russells and the Seymours are obliged to sit in the same benches with tradesmen and farmers, cements the connection between the two orders more closely. "The knight of the

shire is the connecting link between the aristocracy and the tradespeople." Hence we see that the nobility in England were by no means completely a different caste from the commonalty.

The wars of the Roses caused the destruction of so many noble families, that after the accession of Henry it became necessary to recruit the ranks of the aristocracy largely—from the file of the common people. Thus many commoners were at once elevated to the peerage. Moreover so many noble families were impoverished by these wars that when Henry VII. enacted a statute permitting the nobles to sell their lands—many of these lands were bought over by wealthy commoners. Thus distinction between Lords and Commoners arising out of large landed property were gradually done away with.

*Answer Sixth.*—In the continent the wars of the different States with each other made it early necessary to have large standing armies. Now the command of these standing armies falling into the hands of the kings—gave so much influence—to them, that they became able in no long time—to become independent of constitutional restraints. Thus in France, when Charles VII. was enabled by the English war to keep on foot a standing army—he soon found means to become independent in a great of the states general and his son Louis XI. completed the independence of the throne. The same happened in other continental countries. The insular position of England by freeing her from the possibility of foreign invasion, did not oblige her to keep on foot a standing army. When the occasion did arrive for raising an army, the English Parliament had learnt so much experience from the example of other countries, that it refused to provide funds for its maintenance unless securities were given for the public liberty.

*Answer Seventh.*—The dread of Spanish invasion and the power of the Catholics—induced the Puritans to stick closely to Elizabeth. The Puritans knew too well that if they weakened her government, by opposition—the balance of power would on the side of the Catholics. If they hurt her person, the next successor being a Catholic, they would surely worse off, in her reign than under Elizabeth. The power of the king Spain, the enemy of the reformed religion and his threatened invasion of England—also gave them great uneasiness. Their only resource in this course was to strengthen the hands of the Protestant Queen. They however made a violent opposition to the government, in the end of her reign. It was in the question of the Monopolies. Elizabeth, when she found the tide too strong to oppose it, graciously gave her consent to their abolition and received the thanks of the nation. Thus she preserved her authority, by heading the movement when she could not successfully oppose it.

*Answer Eighth.*—Elizabeth was a wise princess, who while she ruled the nation at her will, forbore to exasperate them. But James was a coward and trifler. He exasperated the nation, by his pompous pretension, and loud claims to arbitrary power—whilst he had not energy sufficient to overawe the nation. His cowardice emboldened the disaffected—whilst his pretensions to arbitrary power enraged them. In theory—he maintained the right divine of kings to reign with absolute authority over their subjects—in practice—he abandoned—favourite after favourite, and his measures when the commons clamoured on their account. In religion—he was bigotedly attached to the Anglican church and persecuted the Puritans. He was proud of his theological learning and fond of displaying it in defence of prelacy; thus both his political and religious conduct widened the breach on church and state.

*Answer Ninth.*—The Irish Rebellion strengthened the passions of both parties. The Cavaliers argued that as the Commonwealth was in danger, it was the first duty of every good citizen to strengthen the hands of the King. The Roundheads entertained suspicions that the king had encouraged the rebellion. They always suspected him of a leaning towards Catholicism. The rabble trembled for their persons and their goods. An epidemic fear prevailed that the Irish would cross the frith and murder the Protestants. To the argument of the Cavaliers—their enemies replied that though the occasion of public danger was a reason for strengthening the hands of a good king yet it was also the reason for depriving a king who was at heart a public enemy of all power. They knew that it was the want of an army which prevented Charles from being absolute. Now that an army must be raised—placed them in a dilemma. The Cavaliers on the other hand clung more closely to Charles as the danger increased.

*Answer Tenth.*—Charles II. being excessively fond of pleasure was always in want of money and as his parliament grudged to supply his wants—he was willing to become practically the vassal of the king of France, on consideration, he supplied him, with all the money he wanted, and protected him from the rebellion of his subjects. He was willing in short to stand in the same relation to Luis as the tributary allies of the East India Company stand to them. Luis doled out petty sums from time to time, so as to keep hope alive. By this means he kept England from assuming her natural position among the nations of Europe at a cost much less than building St. Germain's. Luis also craftily distributed money among the oppositionists, his sole aim being to keep the English government weak and incapable of interfering with his projects on the continent. Luis was a king of unbounded ambition and he wished to extend his dominion in the continent. This object would be impossible if England continued to act on the

principles of Triple Alliance and to oppose her in the field as well as in the cabinet. He also extended his views to the monarchy of Spain. The king of Spain whose sister he had married was a sickly child and might die without issue. In that contingency he was resolved to put forth his claim to that vast Empire. He knew that a continental coalition would be formed to prevent the junction of France with Spain. "But for all continental coalitions France single-handed was a match. England might turn the scale." He was therefore resolved to keep England on his side or at least neutral. Charles bound himself to make public profession of the Catholic religion. To support the king of France by sea and land in his continental wars and especially in the assertion of his claim to the throne of Spain. In return the king of France was to pay a yearly tribute to him and in case of rebellion among his subjects to send in an army at the expense of France. These were the principal conditions of the treaty of Dover.

MOHENDRO LAUL SHOME,

*Hindu College, First Class.*

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*Afternoon Paper.*

*Answer First.*—The reasons for supposing that the barbarous nations who subverted the Roman Empire were not populous are the following ;—(1) the countries they inhabited were of *vast* extent ; (2) very great portions of these countries were covered with woods and marshes which made them uninhabitable ; (3) that these rude people chiefly subsisting upon hunting and pastureage in which state of society large tracts of land are necessary for maintaining a small number of inhabitants ; and (4) that science and arts were altogether unknown consequently population could not advance to any considerable extent. It is a fact sufficiently established by experience that civilization is an essential cause of the increase of the numerical strength of a community and this great cause was wanting in the case of these barbarous nations.

*Answer Second.*—The general causes which led to the downfall of the Roman Empire are ;—

(1.) There were defects in the Roman constitution in its very best state and these original seeds of corruption were ripened by time to such a degree of maturity that it would have sooner or later fallen to pieces without any external shock whatever.

(2.) The wisdom of civil policy by which the Romans had subdued and governed the world was neglected despised nay almost forgotten during the reign of the later Emperors.

(3.) The rigour of military discipline which made the Roman legions irresistible wherever they marched was totally relaxed.

Infantry which constitutes the main strength of an army was neglected ; the provincials and barbarians that were taken into pay were either too weak to bear the burden of military duty or too proud to appear on the field of battle but on horseback ; so that they were all swept away by the headlong impetuosity with which the barbarians poured upon the Roman Empire. Besides the barbarians that were taken into pay to stem the torrent of this invasion having acquired the title that was still remaining of Roman discipline and finding that this combined with their native courage and perseverance rendered them irresistible turned their arms against their employers and thus facilitated the subversion of the tottering fabric.

(4.) The subjects of the Romans long unaccustomed to the use of arms and completely unnerved by the unrelenting tyranny they were subjected to by their despotic rulers were in such a degraded and miserable state that when they were exposed to the fury of the barbarian soldiers they had neither the courage nor the inclination to make any resistance. They knew full well that nothing could render their condition worse and they therefore patiently submitted to all the injuries that were inflicted upon them.

(5.) The wealth of the Roman Empire was exhausted. The public treasury drained of all its resources by the extravagant expences which the frivolous and foolish tastes of the Roman Emperors entailed upon them and by the frequent subsidies that were paid by them to several tribes of the barbarians for the purpose of propitiating their anger and vengeance had but very little in its coffers. Trade with the East, especially with India, which supplied the Romans with all their articles of luxury completely dried up their pecuniary resources.

(6.) The frontier provinces of the Roman Empire exposed to continual degradations from the neighbouring barbarians were so impoverished that they could not regularly pay their taxes to the Government.

(7.) The Roman Empire had grown up to such an extraordinary height that it is very doubtful whether the greatest mental and moral energies could have maintained it in its dizzy eminence. Even the genius of a Cæsar could have been unequal to the arduous task. But during this critical emergency which required the utmost vigour in action and the greatest wisdom in council the Roman Emperors buried in luxury, enervated by vice, and alternately governed by women and eunuchs displayed the most contemptible and vacillating policy.

(8.) The removal of the Roman legions from the banks of the Danube which facilitated the irruption of the Northern horde contributed in a great measure to this terrible overthrow.

*Answer Third.*—The feudal system produced the most pernicious effects on the moral, intellectual, and social condition of European society. Without the security which regular government bestows and the golden leisure which advancing wealth and the increasing comforts of life confer upon the members of a community arts and sciences can never prosper. In the feudal system the sources of anarchy were innumerable. The proud and haughty barons, almost in all cases unrestrained by any authority employed themselves in devastating the possessions of each other and in subjecting the poor inhabitants to the lowest depths of misery. Thus oppressed and deprived of the very means of subsistence the poor wretches passed their days in endless sighs and lamentations without knowing what art and science were. Condemned to drudge on the fields of their insolent and haughty masters who for all their services, scarcely yielded them the very minimum of subsistence they were totally incapacitated for any active intellectual exertion. Their proud masters on the other hand scarcely more literate than themselves held learning in contempt and were entirely absorbed in their schemes of plundering and robbing each other. Not a faint vestige of Roman literature, art or science remained and a thick fall of gloom pervaded the whole face of society. The Christian religion was not entirely exempted from the pernicious effects of the feudal system. Absurd rites and ceremonies which the barbarians who settled in Europe were accustomed to perform in their original savage state and by which they expected to propitiate the favour of their strange gods and goddesses were introduced by them into the Christian faith which they subsequently embraced. The priesthood were scarcely able to read and write. Alfred the Great complained that from the Humber to the Tweed there could not be found a single churchman who could explain in his mother tongue the meaning of the service he read, and that from the Tweed downwards the ecclesiastics were more illiterate. Thus the Christian religion was disfigured by many absurd and religious ceremonies and lent its aid in authorizing such unjust practices as the trials by ordeals and single combants. The feudal system operated very powerfully in stunting the growth of the human mind. People subject to those enormities like those it gave birth to and engaged in continual warfare can never devote themselves to the improvement of their minds. The human intellect was completely unnerved by this baneful system. The most powerful lords could not sign their names,—nay to be able to do so was considered by them as entirely unworthy of an elevated being like man. It was only in a few monastic cloisters that any thing like literature and science was pursued and this could not lead to the general amelioration of society. Contention and

strife, repine and lust were the principal employments of the greater portion of the community and how could under such circumstances the mind of man advance in the career of improvement?

*Answer Fourth.*—The effects of the municipal privileges on the conditions of the inhabitants were very great. Relieved from the galling thraldom of aristocratic tyranny, they applied themselves to the business of bettering their condition. The power of those communities to which these privileges were granted was extraordinary when compared with what they enjoyed in their former condition. It enabled them to defend themselves against the encroachments of their former oppressors to obtain seats in the representative bodies of the kingdoms they respectively belonged to to make the spirit of the public laws really conducive to the welfare of the people and to stand as an intermediate body between their monarchs and the nobles. Property flowed fast to these communities and with it all the benefits it gives birth to and which security engenders contributed to improve their condition in no inconsiderable degree.

The effects of these privileges upon the power of the nobility were to lessen it. In former days, when every thing was in anarchy and uproar, and when the castles of the barons could only afford refuge to weak and the oppressed, the nobility being the only guardians and protectors of the people could exercise paramount influence among them. But walled towns which these privileges introduced afforded more commodious retreats to the oppressed; consequently the nobility being no longer considered as the only guardians of the people were less looked up to and gradually declined in power.

The power of the king was considerably increased by the municipal privileges. Previous to their existence the monarchs whenever they stood in need of a military force depended entirely on those soldiers their vassals furnished; and as these soldiers could not be kept on the field for more than 40 days, and as they were more subservient to their immediate masters than to the kings, the assistance they thus afforded was very feeble. But soon after the creation of the municipal institutions, regular and trained soldiers were supplied by those communities to their monarchs whom they considered as the authors of their liberties. Moreover they supplied them with large sums of money which enabled them to crush the exorbitant power of the nobility with greater vigour and energy.

Industry received a powerful impetus from these privileges. When the inhabitants of the towns began to consider that the work they did could not now be appropriated solely to their master's use they devoted themselves to the active pursuits of

life with concentrated attention and perseverance. Commerce followed in the train of liberty and the useful arts which minister to the comforts of life began to be cultivated with increased ardour and diligence.

*Answer Fifth.*—The accidental discovery of a copy of Justinian's Pandects towards the middle of the twelfth century produced a great change on the administration of justice and the state of society. When the barbarous nations first settled in the conquered provinces of the Roman Empire, so complete was the change in the state of society that the laws of Rome could no longer be followed in the distribution of justice if at all justice can be said to have survived that terrible convulsion. But upon the accident above alluded to, the nations of Europe who had hitherto made some progress in civilization and refinement, were struck with admiration at the wisdom which the volume contained; and when compared with the barbarous administration of justice that prevailed among them it seemed admirably calculated the prosperity and well-being of society. Enlarged and liberal views of jurisprudence were introduced, the absurd practices of trial by ordeal and by judicial combat appeared to the people more and more disagreeable and law began to be cultivated as a science. Thus the administration of justice was greatly improved. The chief effect which the revival of the Roman Law produced on the state of society was that it gave rise to the distinction of professions. Hitherto war has been the only occupation of men in Europe. Every other occupation was considered as mean and derogatory and was contumuously left to the use of boors. The profession of law attracted many eminent minds, and when learning was introduced in the administration many ignorant lords who hitherto held the supreme jurisdiction within their territories resigned their seats being unwilling to go through the trouble of a laborious education. With the introduction of the distinction of professions men's minds being according to their inclinations and capacities directed to various occupations of life, society began to improve with re-doubled velocity.

*Answer Sixth.*—Upon the first revival of letters the human mind in Europe instead of taking its natural course plunged itself at once into the depths of scholastic theology. It is generally seen that in the first stage of the human mind, the faculty of imagination holds the ascendant. Men are poets before they are philosophers. The age of Homer preceded that of Socrates. But instead of taking this natural and salutary course the inhabitants of Europe immediately upon the first appearance of intellectual dawn, devoted their energies in sounding the depths of metaphysical enquiry, in unravelling the Gorgian knots of subtle

and intricate questions about religion, which properly speaking exceeds the bounds of human investigation and in indulging themselves in "talking unintelligibly on matters they little understood." Verbal disputes and hot contentions upon the technicalities of a mystical philosophy were the general occupation of learned men during those times. Controversies which tended not a jot to improve the state of society and disputes about dividding as the poet says "a hair 'twixt the south and south-west side" occupied the greater portion of their time. The cause of this irregularity is to be attributed to the influence of the connection of these men with teachers of Greek and Arab philosophy.

The principal cause which prevented the revival of letters from being extensive was that the Latin tongue was only used in writing and philosophical conversations. Very few persons had access to the learned tongue of Rome consequently many were obliged to stand aloof from the great work of intellectual reformation that was going on.

*Answer Seventh.*—The Hanseatic league originated from a combination of several cities in the German Empire and in the adjacent countries on the north of Europe for the purpose of trading with the commodities procured from the shores of the Baltic. A large number of cities united in this league. They established staples at Bruges in Flanders where the Lombards brought and exchanged with them the products of Italy and of the East. Thus by the interchange of articles of merchandise the league rose to such a degree of eminence and power that the greatest Princes in Europe sought with emulous ardour to obtain their aid and support. The ships of the Hanseatic merchants were the terror of the seas and the cities on the banks of the Elbe who were the principals in this league rose to extraordinary influence and opulence.

*Answer Eighth.*—The marriage of Mary of Burgundy with Maximilian by adding her extensive possessions to those of the Emperor, laid the foundation of the future greatness of Charles V. His extensive territories combined with those he inherited from his father and from his grand-father Ferdinand King of Spain, placed him in the most conspicuous position among the European powers and disturbed in a great measure the balance of power on the continent. His great abilities, aided by a coolness and perseverance which none of his contemporaries possessed wielded these vast resources with great energy and made his power the terror and admiration of all Europe.

*Answer Ninth.*—The expedition of Charles VIII. of France into Italy gave rise to many important consequences. The first defeat of the Italian states and the subsequent repulse which Charles received from the confederacy which those disasters

brought into existence taught to the nations of Europe that grand principle of the balance of power which was better understood during the reign of Charles V., and which at a later but a far ampler theatre hurled back the tide of French invasion and foiled the powerful efforts of the mighty Napolean himself. The next effect that it produced was the establishment of regular standing armies. The power which the French monarchy possessed over every other kingdom in Europe being justly ascribed to that terrible agent, all the other states of Europe imitated the French policy and established large bodies of infantry and cavalry. Another great effect was that the importance of the infantry was fully appreciated during this struggle and this gave rise to greater attention to that part of the army. The example of the Swiss foot soldiers, struck the admiration of the potentates of the Continent and excited their emulation to create bodies of soldiers equally efficient with them. The establishment of national militias is also to be attributed to this expedition. Another great effect was the increase of the public revenue in every kingdom. Hitherto the nations of Europe had not engaged themselves in any extensive operations of war; and were consequently unacquainted with the expenses of such operations but from this time they were able to entertain some notions of the expenses attending them and they therefore began to pay greater subsidies to their sovereigns in such cases of emergency.

*Answer Tenth.*—The Venetian Republic “raised from the bosom of the deep” had by her extensive commercial operations and by the dint of her persevering industry advanced herself to such opulence and power, that her supremacy was regarded with jealousy by many of her neighbours. There were merchants in Venice with which the greatest potentates in Europe could not vie in wealth and splendour. Pope Julius II. being jealous of the supremacy of Venice and desirous of destroying it, entered into close confederacy with the Emperor Maximilian, Ferdinand of Spain, and Lewis XII. of France, and this gave rise to the celebrated league of Cambray. The allied powers having assembled a vast and overwhelming force, marched against Venice filled with high hopes of advancing their possessions by seizing those of the Republic. The Venetians at first displayed all the vacillations of a weak policy and patiently suffered their enemies to approach their territories without molestation. But the bloody battle Gherraddada soon brought them to their senses and then they began of making extensive operations or of diverting the rage of the invaders by ceding to them a large portion of wealth and possessions. But fortunately for them, the invaders when they found themselves in the position of conquerors fell out with each other about the division of the booty. Julius II. opposed Lewis XII. and by

forming a mighty coalition against drove the French from all their Italian possessions except Milan. The Republic of Venice was thus saved on the very brink of ruin ; but her pride was in a great measure humbled. The league of Cambray thus ended after having taught to the nations of Europe a fresh lesson upon the importance of union and the disadvantages of disagreement.

DWARKA NAUTH MITTER,  
*Hooghly College, First Class.*

## English Essay.

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Lives of Great Men all remind us  
 We can make our lives sublime  
 And departing leave behind us  
 Foot prints on the sands of time.  
 Foot prints that perhaps another  
 Sailing o'er life's solemn main  
 A forlorn and shipwrecked brother  
 Seeing shall take heart again.

*Longfellow.*

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Not fortune's slave is Man : our state  
 Enjoins while firm resolves await  
 On wishes just and wise,  
 That strenuous Action follow both  
 And Life be one perpetual growth  
 Of heavenward enterprise.

*Wordsworth.*

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WHAT noble and spirit-stirring sentiments are embodied in the mottos before us? The first calls upon us in a language at once beautiful and energetic to study the lives of the great and noble spirits that have in different ages blessed our planet, to mark every important feature in their character and to take them as the models of our imitation that "we may make our lives sublime" and that we may at our departure from this great scene leave behind us examples for the imitation of others—examples that may guide and support them in their passage through life, and may arm them with courage to encounter, and perseverance to overcome the greatest difficulties chance and accident may throw in their way. The other motto emphatically tells us that however great the empire of fortune may be supposed by some, Man the image of his glorious Creator can, if he like, place himself far above the reach of her influence, and that good and benevolent wishes on his part when supported by firm resolutions to put them into execution can make his life, in spite of every fortuitous accident, a continual tissue of great and noble deeds and a perpetual preparation for his restoration "to the blissful seat." Although both of these mottos breathe the same spirit of moral advice let us for the sake of clearness consider them separately.

There is no branch of knowledge which directly produces a more powerful influence in improving our conduct and in exalting us in the scale of excellence than the Biography of eminent and great men. By great men we do not refer to princes and lords for these are "but the breaths of kings" and to speak in the language of Young "a fool that wears a title lies." On the other hand the man who has so succeeded in preserving the rectitude of his heart amidst the incessant temptations of vice, who has preserved one even tenor of virtuous conduct in the most trying situations "flesh is heir to," who has opened new fields of moral and intellectual inquiry for human pursuit; or has thrown light on subjects that tend to enlighten the human mind, is truly deserving of the title *great*. Persons like him are among the noblest works of God and worthy of every body's imitation. They are like beacons in "life's solemn main," and our frail barks tossed by the merciless waves of fortune can only be saved by following their "foot prints." They are "the salt of the earth that seasons human kind." When we think upon the perils they encountered and the glory they obtained by surmounting them we are not only lost in silent admiration but forgetting for some time the limited scope of our abilities, and as if "inspired by a fortitude from heaven," we strain every nerve to follow their noble example and to vindicate our importance in the Creation. Whether we see them dying like Socrates or reigning like Aurelius, employed like Newton in exploring the ever-extending realms of science or bravely fighting like the noble Washington for the liberties of his country, instinctive feelings of reverence arise in and fill our minds and remembering our kindred nature to them we are excited to tell steps in those noble paths that they struck out. The present advanced state of the world is in a great measure the work of such inspiration. It is a fact admitted on all sides that generally speaking the condition of mankind is in both social and moral respects continually improving. Continual progress is the law of human nature. But to what cause is this superiority of the present over the past to be attributed. Is it because modern times have produced greater intellects than ancient times? This is very doubtful. Ancient Greece and Rome produced men who (as far as greatness and originality of genius is concerned) can stand in fair competition with the mightiest minds of modern times. The progress of human nature is therefore in a great measure to be attributed to that spirit which while it teaches us to imitate, enables us at the same time to surpass our predecessors. The great genius of Newton was led by the light of Bacon's philosophy and the successors of Newton among whom were men like Laplace and Lagrange followed the path he struck out and found ample work for their great

minds to be engaged in, exploring the inexhaustible field of knowledge he had opened to their view. But it is always to be carefully borne in mind that it is incumbent upon us to imitate the excellencies of great men and to avoid as far as we can their failings. No reverence for their virtues must be allowed to consecrate faults and errors. For the further elucidation of this subject let us take the example of Bacon. That Bacon was in many respects far in the van of mankind, no one can possibly deny; and it must be the constant care of every one to imitate him as far as it lies in his power in those respects. But that he was in many other respects far behind his fellow-creatures is equally undeniable and while imitating his excellencies we must not forget ourselves so far as to imitate his faults and errors. While we must do all we can to follow Bacon as he is characterized by Pope by the first two epithets in the last line of his well-known antithesis it must be our constant duty to avoid the last trait of character ascribed to him by the poet in the same line. We must reject the idols Bacon has warned us against but we must not fall flat at the shrine of those other idols he himself worshipped.

Compared with the revolutions which great men have brought forward in the moral and intellectual condition of mankind every other change utterly loses its importance. While the great contest about the classification of the animal kingdom was doubtfully going on between Geoffroy and Cuvier, the poet Goethe happened one day to meet one of his friends newly come from Paris and asked him how was the "great explosion" going on. His friend mistaking what he meant answered that the revolution (the French Revolution) had come to that pass that there was a great probability of the royal family being banished. The old poet cried "pooh" to this reply and said that he asked about the other revolution, the true revolution of the mind, the revolution that will affect the whole world. Napoleon on one occasion in Egypt could not refrain from saying that instead of treading in the foot-steps of Alexander he would have better liked to tread in those of Newton; such are the charms of moral and intellectual excellence, charms which while they dazzle us by their splendour excite us to try our best for possessing them. Thus emboldened and thus benefited by noble examples, it may happen that others following us may tread in our foot-steps and imitate our glory. Our unflinching perseverance in moral rectitude may strike succeeding generations with admiration and our meekness in prosperity and patience in adversity may perhaps raise the drooping spirits of many "a forlorn and ship-wrecked brother."

Let us now return to our other motto. Human life as the Stoics said is a game of mixed chance and skill. But it depends in a great measure on our own selves whether we are above or

below "chance." If to "wishes just and wise" we combine "firm resolves" and if "strenuous action follow both," we can, even when crossed by fortune, maintain our proper dignity and can smile at the greatest injuries she may inflict upon us. To entertain such wishes as are really worthy of being entertained, to adhere with unflinching resolution to their execution, are duties imperative upon human nature and if strictly obeyed can never fail to make man inaccessible to all the freaks of fortune. To a man of this character wherever he is placed and to whatever difficulties exposed, the whole world is an inexhaustible source of delight and we can justly say with Thompson "I care not fortune what you me deny." His mind is at all extremities supported by thoughts like those which "dignified the of Turgot and brightened the declining years of Franklin." Such a course of life is the proper end of man's existence and his deficiency in any of those three points "wishes wise and just," "firm resolves," and "Strenuous Action," renders him proportionally subject to the influence of fortune, and an utter neglect of them makes him her "slave." Mere good wishes, to speak in the language of Bacon though "God accept them are little better than good dreams." If we intend a noble object and make no effort to carry it out, we leave out a capital part of our duty—a part upon which great stress ought to be laid and for which chiefly, as it appears from the consideration of many circumstances in our moral and intellectual constitution, we have been made by our Great and Wise Creator. If we allow "the native hue of resolution" to be "sicklied o'er by the pale cast of thought" we subject ourselves to every evil which irresolution can entail upon mankind. A man who merely entertains good wishes, and rests contented without trying as far as he is able to convert these wishes into solid acts, can be very easily dispensed with in society; nor can he meet with our moral approbation. How poignant yet how true is the following remark on Sterne. It is very cuttingly observed by a critic that Sterne had "too much sentiment to have feeling" and how painful is it to reflect that a man, who could write such pathetic lines upon the misery of a bird confined in a cage, could suffer his own mother to rot in jail for debt when he himself was in affluent plenty. The greatest depths of sentimental feelings like those of Sterne cannot be offered as an excuse for the least neglect of active duty, on the other hand the man who gains noble ends by noble means or failing smiles in banishment or captivity is truly great and his life alone is "one perpetual growth of heavenward enterprise."

DWARKA NAUTH MITTER,  
Hooghly College, First Class, Senior Scholar.

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WHEREVER we turn our view, either to ancient or to modern history, we find abundant examples of the sublime truth echoed by two of the greatest modern bards of England. They all inspire us with hope and they all seem to demand of us to do the same. They all call upon us, not to waste our lives in "strenuous idleness," not to cast away without any use this precious portion of our existence, not to fill our lives with empty gauds and baubles. They all incite us, on the contrary, to set our hearts on "wishes just and wise;" and that we might not be daunted in our pursuits, they all seem to whisper to us "whatever man *has* done, man *may* do."

This is the sublime truth which "all the past of time reveals" to us. The knowledge of it makes us ten-fold more hearty and brave. It cheers the gloom which overspreads the wide waste of life. Our journey is performed with less toil and trouble; even if we are round beset with dangers and are surrounded by them like a labyrinth, the voice of that truth still rings in our ears, and seems to say "Do not for this, forego your firm resolves. There have been men placed in the same situation as you are; nay there have been others who were far more unfortunate than you. Look at the success which have attended their pursuits. Their names are now written in golden letters in the calendar of time. They had not for 'one repulse' given themselves up to despair; and abandoned all their schemes and projects. They had buffeted with the waves of fortune; even when those adverse waves rose high against them, lashing them with utmost fury, they had contrived to ride triumphantly on them." Great men of all ages, "the chosen and select of God," have acted in accordance to this precept. They have displayed wonderful powers and abilities in all that they had to perform. In all their actions, they had shown an utter independency of fortune. They had not idly waited for fortunate circumstances. They had not waited for that "tide in their affairs which taken at the flood leads on to fortune." They have despised all such aids, and the mould of their fortune was created out of them by their own hands. Whilst their lives bustled with firm resolves, they united Thought with Act. They had not been mere men of speculation, neither had they been rash enterprisers. They had not been mere Hamlets—

"Resolving, re-resolving, and then dying the same."

To all their plans they had united such a degree of action, that their lives were a continued series of successes and triumphs. The character of their lives was progressive. Activity was the

chief element which supported their existence. Tennyson characterizes their successes in the following lines :—

“ All the past of time reveals  
A bridal dawn of thunder peals  
Whenever Thought hath wedded Fact.”

The lives of such men “ remind us that we can make our lives sublime” with similar attempts. They have left behind them such “ foot-prints in the sands of time,” that if we be shipwrecked on the waves of fortune, the mere sight of them would inspire us with redoubled courage, to struggle against the blows of fortune, and not passively to submit to them. God, the great father of light and good hath thus constituted man, hath endowed him with a never-dying hope and hath conferred on him such powers, that demand of him to exert them. He hath thus created man for action. He hath filled his mind with heavenward aspirations, with thoughts that soar up to infinite and can never be fettered below. As we are thus constituted, the examples of all the great men of antiquity and of modern times should excite us to engage in deeds whose renown shall be trumpeted forth through all the world and through all ages. They should teach us to rest wholly on our self-exertions and to despise all the external aids of fortune. They should inspire us with the same sentiments which animated the breasts of those Worthies. They should teach us not to despair amidst adverse circumstances ; to create out of ourselves the moulds of our fortunes ; and to follow exactly the same courses which they have trodden upon. The life of Napoleon should inspire every soldier to strenuous exertions. The life of Washington should inspire every man, whose country is oppressed by foreign powers, with pure patriotism and with honest indignation. The life of Yelhu Burhett should inspire every poor scholar with a hope that poverty and adverse circumstances are no serious impediments to the attainment of learning.

Nay—the very state of our existence should incite us to noblest deeds. We are placed here for trial. We must therefore set our hearts “ on wishes just and wise.” All the frivolous cares and pursuits which fill up the void of the greater part of human life should for ever be excluded from our minds. One individual care ought to be cherished—the advancement of the design and Glory of God. This ought to reign supremely over our minds. But we must not be satisfied with a passive love of goodness ; our lives must not be spent with a mere inclination to advance the Designs of God. We must not be content with heavenward aspirations. We must put forth all our powers to

crown our wishes with acts. We must exert our whole soul, and must be resolved upon to gain the victory or " nobly die."

This is the course which all the noblest principles of human nature seem to dictate to us. In this way only, we can make our lives " a perpetual growth of heavenward enterprises." Good deed and good actions, even if attempted and not crowned with success, show in the enterprises an element of heavenly longing. It shows that his soul glows with the noblest of all ambitions that can take possession of the breast. But if he can crown his thoughts with acts, his name is enrolled in the Book of Fame ; and his renown surviving through all ages is emblazoned through all the world.

RADHA GOBIND DOSS,

*Hindu College, First Class.*

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### Library Medal Examination.

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#### *Hindu College.*

1. The countries over which Rome held her sway at the time of the establishment of the monarchy were the following :—

*Spain*, which was then divided into the three provinces of Lusitania, Bœtica and Tarraconensis ;

*Gaul*, which besides the modern territory of France included within itself the dutchy of Savoy, the four electorates of the Rhine and the modern republic of Switzerland ; *Britain*, together with *Wales* ;

*Italy*, which did not then contain the extensive territory of *Lombardy* ;

*The Danube and Illyrian frontier*, which comprehended the various provinces of Rhaetia, Noricum, Pannonia, Dalmatia, Maesia, Thrace, Macedonia and Greece ; Syria, Phoenicia, Palestine and Asia Minor ; Egypt, Cyrene, Africa (the territory of Carthage) and all the islands of the Medithrean.

The whole extent of the Empire comprehended the most desirable and fertile portion of the globe ; it was bounded by the Atlantic Ocean on the West and the Euphrates on the East, the Rhine and Danube on the North and the deserts of Arabia and Africa on the South. The whole area was computed to be 1600,000 square miles.

The character of the Roman people, which had hitherto been remarkable for bravery and patriotism, underwent a most grie-

vous change. In the same proportion as the sway of the Roman eagle extended, the national character of the Romans suffered. There was, at this period a moral degeneracy perceptible in every class and condition of the community. The senate, which was hitherto composed of the most venerable characters and had struck awe on all that beheld them, came to be filled up by the Equites whose attention was solely directed to their own interests, and many even of lower orders of society. The consulship which had hitherto been filled by men of the most unblemished character was occupied by persons who never hesitated for a moment to sacrifice the interests of the republic for those of their patrons or friends. The assemblies of the people which rewarded merits alone with dignities, were now strangely corrupted: they often consented to elect magistrates not as before for their pre-eminent talents and virtues but because they were men who could satisfy their cupidity. The Comitia at this age consisted of persons whose minds could easily be biassed by the offer of a large sum of money, and who craved for nothing but bread and amusements. The praetors and proconsuls who governed the conquered provinces were no longer restrained by the principles of law and justice, but freely gave a loose to their avarice and never hesitated to commit the most unlawful ravages in the countries entrusted to their charge. Thus it was that the zeal and attention of the whole political machinery which had hitherto been turned to the public good, in these degenerate times bent to the attainment of individual interests. The social and moral character of the nation kept pace with its political degeneracy. The warlike spirit of the ancient Romans no longer existed in the languid souls of their degenerate posterity, and the divine feeling of patriotism which characterised the nation was completely extinguished.

The Romans at this age were characterised by an excessive love of money and taste for sensual pleasures. All the refinements of masonry were imported from the oriental provinces, and every instrument of voluptuousness ministered to their pleasures. The hardy race of Romans were now changed to an effeminate and luxurious set of people. The Roman community was now composed of persons who rolled in affluence and luxury or who were in the most abject state of poverty. There was no industrious middle class among them, and it was for this reason that no manufactures were carried on at all. The nobility immersed themselves in pleasures, and the poorest class of the people was fed at their expense. The nation therefore sank under languor and idleness, and all their manly virtues were lost. A spirit of licentiousness and immorality pervaded them, and it was carried to such an excess even by the fair sex, that a state of

concubinage was universally preferred to that of legal matrimony. No attention was paid to decency even by the most urbane part of the populace, and Rome as it now became the favorite resort of most of the nations of the earth was the pool of corruption of all.

*Answer Second.*—After the assassination of Julius Cæsar in the year 44 (A. D.,) the senate was seized with consternation and amazement and all the members hied to their respective homes. The conspirators who were headed by Brutus and Cassius were afraid to find that their rash conduct was not approved. They were therefore obliged to take refuge for some time in the Capitol. Antony who was strongly intent to fill the place of the late dictator, bent all his thoughts and energies to turn this favourable opportunity to his own account. He immediately paid a visit to the wife of the great Cæsar and possessed himself of the private papers and treasures that were left behind. Brutus on the other hand attempted to appease the fury of the populous and made a speech to that effect in the forum. This however passed unheeded. When the senate was assembled in the temple of Tellus, it was at length decided after long discussion and mature deliberation that no further judicial enquiry should be made into the conduct of the conspirators, that all the regulations and acts passed by the late dictator should be held valid and that his remains should be honoured with funeral obsequies at the expense of the public.

When the corpse of Cæsar was brought into the forum, Antony delivered a speech in which he represented in glowing colours the great virtues of that personage and pointed to the wounds which bled on the mangled body. This produced great excitement in the breasts of all the audience. The body was cremated in the forum without being allowed to be carried to the Campus martius as usual, and the populace vented their fury on the party of the conspirators as soon the obsequies were over. Antony now carried on his measures with all vigour and prudence. He committed the most outrageous tyrannies according as his pleasure and interest inclined him; and when any plausible reason of his mode of procedure was required he did not hesitate to show that it was nothing but the carrying out of some acts which the dictator left unpublished. It was appointed by Cæsar that Brutus should govern Macedonia and Cassius Syria. Antony however induced the senate to give over Macedonia to himself and Syria to Dolabella. It was also designed by Cæsar that D. Brutus should take charge of Cisalpine Gaul, and Antony was intent to keep that province to himself. There was another person, named Lepidus who was at the head of a large army that might intimidate both the conspirators and Antony himself.

After a short interval Octavianus the grand nephew of J. Cæsar who was appointed his successor, and had hitherto been at Apollonia, arrived. And the great contest between the three principal leaders namely, Antony Octavius and Lepidus was soon to be fought and decided. When Antony returned from Cisalpine Gaul after having vanquished Decimus, at Mutina Lepidus brought Octavianus and Antony to a conference at an island on the river Rhenus. Here it was that they entered into a private agreement and formed among themselves the second triumvirate, which was to continue for five years. Antony was to govern Gaul, Lepidus Spain, and Africa, Italy and Syria were to remain under the administration of Octavianus. Immediately after this, they formed a hideous plan to procure as they imagined general safety. They framed a list of proscription in which they set down the names of all their enemies. Antony gave up his own brother L. Cæsar, Lepidus gave his cousin Aemilius Paulus, and Octavianus urged the death of this great orator Cicero. The most horrid cruelties were then carried on, and within the space of a week, two thousand aquites and three hundred Senators were killed. The principal conspirators Brutus and Cassius who had fled to Asia and then to Greece, were discomfited by Antony and Octavius at the battles of Philippi in the year 42. And henceforth they felt themselves at liberty. Octavius had the art to set aside the ambitious views of Lepidus by giving him the office of Pontifex Maximus. He had the fortune, soon after to get over his other rival, Marc Antony, by the victory he obtained over him at the battle of Actium in the year 31 (thirty-one). From this era commences the monarchical form of government established under the auspices of Augustus, the name afterwards given to Octavius.

Octavius was a wise statesman and mild ruler. He was characterized by uncommon sagacity and habitual hypocrisy. Antony was a man of immense ambition but he had no energy of character nor strength of purpose.

*Answer Third.*—After the battle of Actium, the whole power of the Roman State was in the hands of Augustus. The first thing to which he turned his attention was the reformation of the senate. He found it in a very degrading condition and composed of an immense number of worthless members. As he was appointed the *censor*, he excluded many against whom he might raise the objection of immoral conduct, others he advised to withdraw themselves, and it was thus that he reduced the numbers to 600. He also enjoined that the senate shall have only two instead of three sessions every month. As Augustus was desirous to acquire sovereign power and still keep the forms of republicanism, he attached to himself the whole executive power

of the state by assuming the powers of the various powers of the magistrates. He was at first appointed *Imperator* or general of all the armies, and was afterwards made *tribune* for life. He was made *proconsul* of the provinces. He again made a very prudent arrangement by which he divided the provinces between himself and the senate. The more secure provinces he left into the hands of that assembly, and it was provided that all new provinces shall fall under his administration. In fact he concentrated into his hands all the powers of monarchy, under the cloak of moderation. He enacted many salutary police regulations, and restored peace and order in the city ; raised the salaries of the governors of the provinces and thus prevented them from carrying on oppression any longer, and entrusted the administration of the city to the proctors. He transferred the power of electing magistrates from the senate to the assemblies of the people, and made the people believe that they were again in the possession of civil liberty, while in fact all *real* political freedom was lost. He also introduced important changes in the finances of the Empire. The income of all the provinces which were left in the charge of the senate was to be given into the royal treasury for defraying current expenses ; while that of the provinces entrusted to him was to go to his private treasury and support the armies.

*Answer Fourth.*—During the reign of Tiberius, Germanicus was appointed commander of the countries situated on the banks of the Lower Rhine. He suppressed the rebellion that arose among the nations of Germany, and gained many victories over the several barbarous tribes of those regions, of whom the chief were the Chatti, the Syambri and the Usipetes. He displayed intrepid valour and uncommon dexterity throughout the whole of his career, and was deservedly beloved both by the legions placed under his command as well as by the populace of Rome. Tiberius who was a prince of a most distrustful character became suspicious of that young warrior, and in order that he might prevent his gaining any ascendancy over the Roman people he contrived to send him to the East, immediately after his arrival at Rome, to reduce the insurgent province of Armenia. At the same time he appointed Piso, the Governor of Syria, accompanied by his wife Plancina. Germanicus carried on his measures in Armenia very vigorously, and would soon have accomplished his desired object, had it not been for the intrigues of Piso who, as it was afterwards suspected, secretly poisoned him. Thus was the glorious career of Germanicus cut short by an untimely and violent death, brought on at the instigation of the jealous and cruel prince Tiberius.

*Answer Fifth.*—Tiberius after having ascended the imperial throne, found that the Romans were virtually deprived of their political freedom, and that they no longer entertained an ardent

love for civil liberty. He, therefore, found it convenient to transfer the functions which peculiarly belonged to the assemblies of the people to the Roman senate, and the power of electing Magistrates was henceforth vested in that assembly. This change was however effected from motives of self-interest, as he afterwards used the senate as a tool in his own hand. Moreover, he introduced a very important change in the criminal law. Hitherto all *crimes* committed against the republic or the monarch were only recognized and punished as high treason, but Tiberius passed a regulation by which it was enacted that any *act* or *speech* or *writing* against the Majesty of the Emperor was an offence of high treason. It was in consequence of this enactment, that the set of people known by the name of denouncers (*delatores*) originated, who acted as legal spies and were turned to convenient instruments in the hands of tyranny. In the commencement of his reign, Caligula introduced some beneficial changes in the law, the principal among them was the enactment by which he again vested the power of electing Magistrates in the hands of the *Comitia*. He also set aside the class of people called denouncers and abolished some oppressive taxes.

*Answer Sixth.*—The Emperor Claudius was from his birth possessed of a very weak constitution both of body and mind. His mother used to call him *hominis portentum*. He was really born with some defects in his mental character, and these were further increased as he grew up by the ill-treatment he received from all the other members of his family. It was for this reason that he displayed a habitual timidity whenever he spoke or did any thing before the public.

That the natural tendency of his mind was not prone towards cruelty may be proved by the very first acts of his reign. As soon as he was invested with the imperial purple, he granted a general amnesty to all those who had any hand in the demolition of the republic, and at the same time pardoned most of those who headed the conspiracy against his predecessor Caligula. These two facts alone are sufficient to show that he was not as a *tyrant* as some historians have styled him. It was the natural weakness of his temper which allowed the women and freedmen of his palace to gain an uncommon ascendancy over him. Some of his wives and freedmen were the persons who exercised the greatest influence over his mind, and the principal of them were Agrippina, Pallas and Narcissus.

*Answer Seventh.*—The moral condition of Rome under the late Emperors was in its lowest depravity. The licentiousness of the commonalty, the avarice of the great and a general effeminacy of character accompanied by a cruelty of heart disgraced the very name of the Romans. Patriotism, national spirit and all noble and manly feelings

disappeared from the Roman world. Even the most urbane part of the populace lost all sense of decency and a love of sensuality and voluptuousness rose to an incredible height. That there was a total absence of humanity and sensibility in the heart of the degraded Romans of this age may be proved by a reference to the inordinate love they entertained for the inhuman games in the amphitheatre, where the gladiators displayed their talents and dexterity in killing one another. The agonies of death and the most horrid scenes of cruelty which would draw tears from the breast of the bravest of a civilized community of modern times were to them a source of pleasure and enjoyment.

*Answer Eighth.*—The commerce of the Romans multiplied in proportion to their wants. The Roman Merchants imported furs from Scythia, amber from the shores of the Baltic, and aromatics, precious stones and silk from the oriental countries. The immense sum of 800,000£ sterling was annually spent to procure the luxuries of the East, which the Romans exchanged for the gold and silver they procured from the mines of Spain. The principal marts to which the Roman Merchants resorted were Alexandria, Antioch, and Marseilles. They also carried on inland commerce with the European provinces by the road that led through the Alpine regions.

*Answer Ninth.*—The Greek proverb that the language of a nation is the type of their lives was remarkably exemplified in the case of Rome. The corruption of the Latin language kept pace with the moral and political degeneracy of the nation that used it. It was owing no less to the misfortunes than the vices and follies of the Romans. The loss of the political freedom on the one hand and the moral depravity of the people on the other were the sole causes of the corruption of the Latin tongue. When the Romans became amalgamated with the general mass (free-born) of the provincials, the gravity of the language was for ever gone, and the Greek language very soon gained the ascendancy. The cultivation, in fact, of the mother tongue was totally neglected by the fashionable class of the community, and their children were regularly trained up in a foreign language from the period of their infancy. The Roman literature reached its highest perfection in the time of Augustus which historians have proverbially termed as the golden age of literature. It was at this period that Virgil and Horace flourished.

*Answer Tenth.*—Since the loss of the political freedom, public oratory was no longer cultivated but in the shape of encomiums and on the rare occasions of funeral obsequies. Among the later historians of eminence, the chief were Matorculus, Seutonius and Tacitus.

*Answer Eleventh.*—All the liberal arts were in a most flourishing state in the time of the 1st Augustus, and particularly that of architecture rose to its utmost perfection from the great impulse that was given to it by the Emperor himself. It was in his time that the temple of Mars and Jupiter, the porticoes of Octavia and Livia and the Pantheon were erected. The arts flourished tolerably in the time of Nero, but no great progress was made in them during the reign of that bad monarch. They were very much encouraged by Vespasian who by his economy was enabled to ruin the magnificent temple of Peace, the public library and some other public buildings. The great amphitheatre was also constructed in his time. The magnificent villa of Tibur was the production of the age of Hadrian.

*Answer Twelfth.*—Jesus Christ was born in the year 3 B. C., in the 18th year of the reign of Tiberius. The disciples who at first followed his doctrines were very few in number. They rose however gradually to an immense number. Christianity was making a slow but steady progress as if it was destined to compensate for the falling greatness of Rome. Notwithstanding the persecution of this religion under the unnatural Nero, the timid Domitian and most of their successors, it firmly stepped forward in the path of its progress. It spread far and wide in the reign of Constantine the Great who was at first the protector of, and afterwards a proselyte to the Christian Church. The very fact of the Emperor himself becoming a convert of Christianity induced many to follow him, some joined him out of pure, while others flocked to the protection of the cross from self-interested motives. The nobles were in the same manner followed by their attendants. The people of Armenia and Iberia did not hesitate to adopt the faith of the nation who were their protectors; the labours of missionaries disseminated the truth of the Gospel to the distant shores of India and the unexplored recesses of Africa, and it is still making continual progress in various parts of the globe.

PROTAP NARAIN SINGH.

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*Hooghly College.*

*Answer to the First Question.*—The art of Printing properly so called had no previous existence in ancient times. What the ancients knew may be properly called the art of *imprinting*. The inscriptions on some old “Babylonian bricks and cylinders,” the Chinese method of taking impressions on wooden blocks the method which a brother and sister of the ancient family of Cunid

disclosed to the world in 1284 or 1285, of taking rude cuts of saints and pictures of cards on blocks of wood, can scarcely entitle the ancients to the honor of so noble an invention as Printing. The actual date of the invention must be the time when characters were printed from *Movable types* and that time assuredly falls within the limits of modern history—for it was the time of Guttenburg, Fust and Peter Schæffer all of whom lived in the middle of the 15th century.

It is a curious fact in the history of the arts and sciences, that Printing which has thrown so much light on every department of knowledge has thrown none or little on the history of its own birth. Various claims have been urged by various countries and various individuals to the honor of this noble invention, and it has been often remarked that there are as many cities claiming its birth as pretended to have given birth to Homer. But among these the claims worthy of consideration are those of Harlaem, Strasburg and Mentz. Harlaem claimed it for its citizen Lawrence Castor but the pretensions of this individual are founded upon the narrative of Hadrianus Junius, whose account being liable to several sound objections almost all bibliographers except Meerman have unanimously rejected Castor's name from the list. The credit then falls upon John Guttenburg a native of Mentz but who resided for a great length of time at Strasburg. The claim is therefore removed to Germany. But even Guttenburg can not be said to have been the sole inventor of the art. That he was much assisted by Fust is indisputable and the invention of "punches of engraved steel," of which according to many the essence of the art consists is universally ascribed to Peter Scheffer, so that the credit of the invention falls upon this noble triumvirate Guttenburg, Fust and Scheffer.

*Answer to the Second Question.*—The modern art of Printing was first exercised at Strasburg in Germany, and it immediately extended itself to Holland, and Italy. The honor of having introduced the art into England is claimed by William Caxton and Edward Corsellies but the superior claims of the former are now unanimously acknowledged.

*Answer to the Third Question.*—The following is a list of the books that were first printed.

- A work on human Salvation.
- The Mazarin Bible.
- The Pfister Bible.
- The Psalter.
- The Bamberg Bible.
- The Offices of Cicero.
- The Boccacio DeCameron and several others.

The first book printed in England was the "Game of Chess." The art of Printing was not at all slow in exercising its influence on the progress of learning. The different presses at Harlaem, Strasburg, Mentz and Cologne began to vie with each other in the production of volumes which served in a great measure to awaken the latent energies of the human mind and to excite and keep up a strong desire of acquiring knowledge. Hallam in speaking of the Mazarin Bible, says that the noble volume dedicated to the service of God, began to implore His assistance for the births of the Myriads which followed it in rapid succession. The printers at the different stations began to vie each other in the beauty and excellence of their works. It has been remarked by some that the first printers of Europe were unfortunate in the choice of the works they immortalized by their noble art but this is only applicable to a few of the books selected. The invasion of Strasburg by Adolphus of Nassau served to scatter the workmen employed by Fust and Schaeffer all over Europe and thus printed books began to accumulate in great abundance. The most clear evidence which can be adduced to shew that the influence of printing was not slow in its operation on the progress of learning is derived from the fact that the superstitious notions and prejudices which had for ages entwined themselves in men's minds were broken up within a single century, and the Papal dominion which was once held as lasting and enduring as it was once thought to be proper, was gradually undermined until Martin Luther struck the fatal blow at its root. The mind of Europe received a sudden impulse which has succeeded to carry her to the present pitch of glory and refinement.

*Answer to the Fourth Question.*—The art of Navigation cannot be traced with accuracy to its origin. Some say that the instrument mentioned in the book of Job by the name of Topaz was a modification of the modern invention of the Mariners Compass. Others attribute it to Flavio Gioia of Amalfi in Campania, who lived in the fourteenth century but certain it is that it was not known before 1420. The countries where navigation did most flourish in ancient times are those which lie on the coasts of the Mediteranean. The countries of Phenica and Egypt were the indisputable masters of the art in ancient times. The mariners of these two countries were highly celebrated for their skill and dexterity in the art of sailing. The advantages of inland navigation which these countries possessed together with the fact derived from history that they were the first civilized countries in the world, are great arguments in favour of the opinion which has been given of the art of navigation having flourished most therein.

Navigation most flourished at first in Portugal. Under the happy auspices of Henry Duke of Visko brother to the King of Portugal the art began to improve with great speed. Joseph and Martin, physicians to John II. of Portugal, together with another assistant invented a table of the sun's declination in 1485 for the use of Mariners, and this served in a great measure to assist the cause of navigation. The great number of excellent Captains which Portugal gave birth to raised her naval glory to a very high pitch, till at length the discovery of the variation of the Mariner's Compass on the memorable 14th of September 1492 by the great Navigator Columbus, and the discovery of a new and vast world, raised Portugal to the very highest state of celebrity. The country which next took the lead in navigation and commerce was Spain. Spain was for a long time the terror of the seas. Her vast possessions in America, her great influence in Europe, the large influx of the precious metals which she received from her new colonies raised her to the most conspicuous position in the scale of nations. The mighty armament of the Armada which she equipped for the conquest of England clearly indicates the greatness of her power. Her commerce and her navigation increased to so extraordinary a degree that it was once said of her, "the sun never sets on the empire of Spain." But after the fall of Spain, the other countries of Europe began to take the lead in the art of navigation. Venice now stands very high in the list of commercial cities. France also holds a very conspicuous position but the palm of supreme pre-eminence must not be denied to England and next to her to Holland. The naval glory of England had its foundation in the reign of Alfred the Great. That illustrious monarch first established a bulwark of ships round the island and thus sowed the seed of a power which has grown and vegetated in so great luxuriance. The age of Elizabeth, and that of Cromwell may also be reckoned as the periods when the naval greatness of England was very conspicuous, but nothing can be compared with her present state of glory. In those ages England had rivals but now she is the undisputed mistress of the seas, and even her most implacable enemy has been obliged to acknowledge her naval supremacy. After the battle of Abouker Napoleon hearing of the total defeat of the French navy, could not stifle the real sentiment of his heart and was obliged to exclaim in the very article of mental agony "Providence has destined France to conquer by land but England to conquer by sea." The navigators of England have braved the perils of the Antarctic and Artic Zones; her Nelsons and her Collingwoods have set at defiance the naval power of every other country, and her merchant vessels are displaying their sails before every commercial port on

the surface of the earth. Next to England stands Holland. In this country commerce and navigation are in a very flourishing state. Her unhealthy swamps have been converted into the favoured abodes of the arts and sciences and her manufactures and other articles of merchandise are transported to every part of the world.

*Answer to the Fifth Question.*—The Mariner's compass consists of a magnetic steel bar attached to the under side of a card divided into points half points and quarter points, and fixed to a fine pin on which it turns freely within a box covered with glass. The card is generally divided into 32 points. There is a little vertical line called the lubbers point. The manner in which this invention has given an impulse to commerce is that by its means we are enabled to ascertain the exact direction in which a ship is sailing whatever be her position on the surface of the ocean. The pin and the lubbers point are in the same plane with the keel of the ship and the point opposite to the lubbers point indicates the angle between the direction of the ship's motion and the magnetic meridian. But to describe the extent of its influence on commerce is to describe every great naval and commercialfeat recorded in history. Before the invention of the Mariner's compass navigation was confined to the coasts of seas only. The most expert mariners could not venture themselves to the middle of seas and oceans where they were sure to lose their way. What they could at most perform were short coasting voyages; consequently the empire of commerce was very limited in extent. The countries where commerce flourished most before the invention of the Mariner's compass are those which lie along the coasts of seas whereas the remoter ones were at once precluded from the enjoyment of the blessings of commerce. But the invention of the Compass at once changed the face of affairs. New worlds were discovered and merchant vessels laden with the productions and manufactures of every country in the world are daily sailing to the remotest parts and neither the turbulence of the boisterous winds nor the fury of the waves has succeeded to put a stop to that world of enterprise and commerce which it has opened.

*Answer to the Sixth Question.*—We are apt to consider gunpowder as an evil. It has been the cause of the loss of innumerable lives and of innumerable misfortunes to the human race. The greatest ruffians and the most hard-hearted tyrants have made use of it to hurl destruction on their fellow creatures and to bring myriads of men under their ignominous subjection. But this is the effect of the abuse of this noble invention and if we are to condemn it on that account, we can find the same fault with every other object and invention. The fire that cooks

our victuals and keeps us warm, has been often used for the purpose of burning our fellow-creatures ; but this is no reason why fire should be called an evil. The invention of gunpowder has produced great changes in the condition of the world. Dugald Stewart and other writers of eminence whose sentiments on the progressive advancement of society are deserving of the very highest regard, have founded one of their arguments upon this invention. It has given the greatest security to society and security is the mother of almost every good we possess. No barbarous hordes like those which poured from the northern hive upon the defenceless fabric of the Roman Empire, can now withstand the shock of the disciplined arms of civilized nations and can complete their victory by the overthrow of refinement and the reestablishment of primeval darkness. Gunpowder has rendered civilization an overmatch for barbarism and justice for injustice. It is one of the strongest pillars of modern society. If a despot will try to throw his chains round the necks of his fellow creatures, the point of the bayonet will bring him to his right senses. If a barbarous horde will rise up and endeavour to overwhelm civilization with their rude weapons of attack, the thunder of more refined nations will roll back the tide of ruin on them. These are the effects of gunpowder on the state of the world and who can deny that they are of the greatest beneficial tendency ?

As regards war, the effects of the invention of gunpowder has been to mitigate rather than to increase the evils of mankind. In ancient times when this important invention was unknown the rude and fearful weapons made use of in war committed greater havock in armies than gunpowder does in the present day. The stream of human blood which now flows in a modern field of battle is far less than that which to use the emphatic language of Burke "glutted the thirsty sands of Afric or Asia ;" but the real effect accomplished in the former is by no means inferior to that in the latter. The invention of gunpowder has given a regularity to modern systems of warfare which was entirely unknown in ancient times and consequently the evil effects of war have been in a great measure cut short. Napoleon crossed the Alps without the loss of a single soldier while Hannibal was obliged in performing the same object to leave half of his army behind him.

*Answer to the Seventh Question.*—The steam engine has rendered the most important service to navigation. An agent formerly unknown, but infinitely more powerful than what were formerly used, has been brought forward to propel vessels in spite of the wind and wave. These vessels are called steamers. By their means the most important articles of human want and desire are

daily carried from one part of the world to another. The great advantages which these vessels possess over the common sailing vessel are the far greater speed with which they move, the greater security which they give to those who are on their boards, and the greater facility with which they can baffle adverse winds and currents.

*Answer to the Eighth Question.*—The precise date when Gunpowder was invented is unknown. It is popularly ascribed to Bartholo Schwartz a German Monk and Alchemist who is said to have invented it in the year 1320. But the prior claims of Rodger Bacon are indisputable. It is mentioned by him in 1270 but as he has not asserted his claims to the honour of the invention and as he has himself called it a well known substance in his time, the credit is transferred according to Dutens on Magnus Grecus. But even this individuals claims are very vague. It is said that the Chinese knew it before the age of recorded history and Alexander is said by Philostratus to have been unwilling to attack the Oxydrace for they could repulse their enemies with thunder and lightning which clearly indicates that gunpowder was known to them about the year 355 B. C. Archimedes is also said to have been aware of this invention. The use made of gunpowder in war is rather of modern origin. Artillery is said to have been first used in 1346 at the battle of Cressy but it is asserted by some that it was used a little before that period such as 1312, or 1388.

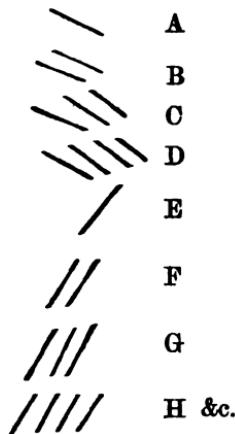
*Answer to the Ninth Question.*—The history of the rise and progress of the Electric Telegraph may be divided into four periods. 1st from the discovery of frictional electricity to 1790 when galvanism was discovered or to 1800 when Volta discovered Voltaic electricity. 2nd from the discovery of galvanic electricity to the discovery of electro magnetic motion by Oersted in 1819 and the application of electro magnetism to telegraphic purposes by Ampere 1820 in France. 3rd from the year 1820 to 1831 when Professor Joseph Henry invented relay and receiving magnets and shewed how electricity could be made to produce effects at a distance. 4th from 1831 to the present time within which period Wheatstone and Cook took a patent in England and constructed an Electric Telegraph in 1837. Morse invented his Electric Telegraph in 1837. Edward Davy first invented a chemical Telegraph in 1838. Bains Telegraph was in 1839 Houses ingenius Printing Telegraph was invented in 1848, and Hornes Igniting telegraph in 1850. In the construction of a line the essentials to be attended to are the following 1st To prevent the effects of trees falling upon the wire, 2nd to coat the wire with gutta percha or with sand and rosin to prevent the effects of atmospheric electricity.

Electricity is produced by two modes 1st by friction and 2nd by galvanism *i. e.* by the immersion of metals in acids. The discovery of frictional electricity is ascribed to Franklin who is said to have drawn an electric spark from a passing thunder cloud in 1745 by means of a kite. Professor Galvani was preparing a soup of frogs for his wife in 1790 when the trembling in the different parts of the frogs suggested to him the idea that it was the effect of electricity. He therefore contrived to produce electricity by the decomposition of metals immersed in acids and this mode was further improved and developed by Volta in 1820.

*Answer to the Tenth Question.*—Morse contrived to produce dots and indentations on slips of paper like pieces ribbon which were drawn by means of a clock work. The marks were made by means of electricity. Bain used chemically prepared paper on which marks were made by the decomposition of the point of a fine arm of copper or of any other substance. He made use of the prussiate of potash to wet his paper and the effect of electricity was continued or broken by means of a finger key which was an office spring lever. He also made use of a "call" which was called by his name, and which consisted of a U shaped magnet. The next was that of House which consisted of two parts the one the recording apparatus and the other in which electricity was produced. The former consisted of 26 letter keys and 2 keys for dots and dashes. The Igniting Telegraph of Horne in which the dots and indentations were made by burning the different parts of paper ought not to be omitted. The essential difference between the telegraphs of Bain and Morse was that the one acted electro-chemically but the other acted electro-mechanically. The local circuit of Morse was independent of the main line but the Branch Circuit of Bain was dependent on and formed a part of the main line. The dispute between Morse and Bain rests upon three points, 1st the use of dots and indentations,—2nd the use of receiving and relay magnets and branch circuits and 3rd the use of a chemical telegraph, but in all these points it is clearly evident that Bain did not in any way infringe the patent rights of Morse. The use of dots and lines was due to Swain and Steenheel who invented a telegraph at Munich in 1837. The invention relay, and receiving magnets was due to Professor Henry who made his experiments in 1831 and the use of a chemical telegraph to Davies. These considerations induce us to believe that Bains inventions were totally independent of Morse's and this opinion was borne out by the testimony of several distinguished philosophers and chemists.

Different specimens of the telegraph signal to writing have been adopted.

The following is one.



Bain made use of dots and dashes to represent the letters of the alphabet. Steenheel and Swain made use of a like mode.

• — •  
• • —  
• | — and so on.

The average annual cost of working the lines of the American Telegraph is 7100£

|                                 |       |
|---------------------------------|-------|
| Nitric Acid, .....              | 4000£ |
| Sulphuric Acid,.....            | 200£  |
| Mercury and Quick Silver, ..... | 600£  |
| Wastage ditto, .....            | 500£  |
| <hr/>                           |       |
|                                 | 7100£ |

*Answer to the Eleventh Question.*—In a long circuit the electric current is found insufficient to produce the necessary effect on account of the action of atmospheric electricity which gradually destroys the power of the current. In order to remove this difficulty Professor Henry invented branch circuits, and relay and receiving magnets by means of which a fresh quantity of electricity was added to strengthen the original current.

*Answer to the Twelfth Question.*—The electric telegraph has been used for the determination of the longitudes of places in the following manner.

The effect of electricity being instantaneous, *i. e.*, a current passing from any point on the surface of the world to any other point within a twinkling of the eye clocks or chronometers were placed at different stations in communication with one another by means of the electric telegraph. The electric strokes were regulated according to the motion of the second hands of the chronometers or clocks and the difference of time thus ascertained between the stations easily furnished both the parties with data to find their difference of longitudes. By the electric telegraph the Observatory at Greenwich can easily give the true time to the principal commercial towns in England. A large black ball of 6 inches diameter is attached to the ceiling of a room in the Observatory and made to fall by means of electricity when the sun crosses the meridian of Greenwich and thus a signal is given by means of which all the commercial towns in England can exactly ascertain the meridian time at Greenwich.

DWARKANATH MITTRE,  
*First Class.*











