

**ALL ANSWERS MUST BE GIVEN ON THE ANSWER SHEET**  
**BY CROSSING THE CORRESPONDING LETTER**

English M.C.Q's

No. of Questions: 45 (from 1 to 45)  
 Questions on Page Numbers: 1 To 7

Time: 45Minutes  
 Negative Marking: Yes

**Grammar and Vocabulary Section**

**Qs 1-10 Choose the answer that is most appropriate**

1. **to chew over again, as food previously swallowed and regurgitated**
  - A. recapitulate
  - B. cryptogram
  - C. ruminare
  - D. cull
  
2. **contemptuous disregard of the requirements of rightful authority**
  - A. extant
  - B. hemorrhage
  - C. contumacy
  - D. malady
  
3. **to drive away by or as by scattering in different directions**
  - A. dispel
  - B. afire
  - C. clan
  - D. squalid
  
4. **anticipating and making ready for future wants or emergencies**
  - A. provident
  - B. wretchedness
  - C. Frightful
  - D. Refinery
  
5. **somewhat rough or rude in manner or speech**
  - A. repel
  - B. brusque
  - C. polyarchy
  - D. neopaganism
  
6. **to manage through by some device or scheme**
  - A. peerless
  - B. personality
  - C. contrive
  - D. mountainous
  
7. **from side to side**
  - A. impracticable
  - B. penetrable
  - C. athwart
  - D. absent-minded
  
8. **friendly counsel given by way of warning and implying caution or reproof**
  - A. credence
  - B. monition
  - C. colloquy
  - D. abyss
  
9. **proclamation**
  - A. exhume
  - B. annunciation
  - C. superintendent
  - D. hypocrite

(go on to the next page)

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10. the climax

- A. symphonic
- B. infirmity
- C. geniality
- D. apogee

Qs 11-20 Each sentence below has one or two blanks. Each blank shows that something has been omitted. Under each sentence four words are given as choice. Choose the one correct word for each blank that best fits the meaning of the sentences as a whole

11. The predatory fossa of Madagascar resembles a cat, so scientists were surprised when genetic testing revealed that the animal is actually \_\_\_\_\_ to the mongoose.

- A. akin
- B. dissimilar
- C. sovereign
- D. subordinate

12. The voters first thought the candidate was \_\_\_\_\_, so they were horrified to discover the level of his \_\_\_\_\_.

- A. honorable...veracity
- B. tiresome...nonchalance
- C. principled...perfidy
- D. reprobate...wantonness

13. Despite the actor's \_\_\_\_\_ behavior when in public, he leads a remarkably \_\_\_\_\_ domestic life.

- A. bashful...retiring
- B. pretentious...opulent
- C. haughty...ostentatious
- D. flamboyant...reserved

14. She found that fame was both \_\_\_\_\_ and \_\_\_\_\_; not only was it difficult to get her book published, but when she did, members of the media quickly lost interest in it.

- A. destructive...counterproductive
- B. evanescent...gratifying
- C. tedious...deleterious
- D. elusive...ephemeral

15. After all her effort, the writer was \_\_\_\_\_ to learn that her poem had been \_\_\_\_\_ for publication

- A. distraught...rejected
- B. dismayed...approved
- C. enthralled...refused
- D. troubled...recommended

16. He may think of himself as \_\_\_\_\_, but all of his decisions today have been wrong.

- A. sagacious
- B. salacious
- C. malleable
- D. quiescent

17. One might think that a great author's death would be surrounded by much \_\_\_\_\_, but the man actually died in \_\_\_\_\_.

- A. equanimity...obeisance
- B. publicity...obscurity
- C. fanfare...scandal
- D. balderdash...uncertainty

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18. As support of the proposal \_\_\_\_\_, legislators tried to get voters interested once again.

- A. encroached
- B. burgeoned
- C. ebbed
- D. escalated

19. The new CEO of the company is both \_\_\_\_\_ and \_\_\_\_\_; he works twelve hours a day and has never had an alcoholic beverage

- A. eccentric...permissive
- B. diligent...indulgent
- C. assiduous...abstinent
- D. intrepid...nonchalant

20 My neighbor is both \_\_\_\_\_ and \_\_\_\_\_; he keeps to himself and has great fear of anyone who isn't from our town.

- A. callous...predisposed
- B. misanthropic...tolerant
- C. insular...xenophobic
- D. prejudiced...obstinate

**Reading Comprehension**

**Qs 21- 34 Each reading comprehension passage in this section is followed by questions based on the content of the reading passage. Read the comprehension passage carefully and choose the best answer to each question. The questions are to be answered on the basis of what is stated or implied in the passage**

**Passage 1**

From the 197 million square miles, which make up the surface of the globe, 71 per cent is covered by the interconnecting bodies of marine water; the Pacific Ocean alone covers half the Earth and averages near 14,000 feet in depth. The portions which rise above sea level are the continents-Eurasia, Africa; North America, South America, Australia, and Antarctica. The submerged borders of the continental masses are the continental shelves, beyond which lie the deep-sea basins.

The ocean are deepest not in the center but in some elongated furrows, or long narrow troughs, called deeps. These profound troughs have a peripheral arrangement, notably around the borders of the Pacific and Indian oceans. The position of the deeps, like the highest mountains, are of recent origin, since otherwise they would have been filled with waste from the lands. This is further strengthened by the observation that the deeps are quite often the sites, where world-shaking earthquakes occur. To cite an example, the "tidal wave" that in April, 1946, caused widespread destruction along Pacific coasts resulted from a strong earthquake on the floor of the Aleutian Deep.

The topography of the ocean floors is none too well known, since in great areas the available soundings are hundreds or even thousands of miles apart. However, the floor of the Atlantic is becoming fairly well known as a result of special surveys since 1920. A broad, well-defined ridge -the Mid-Atlantic ridge- runs north and south between Africa and the two Americas and numerous other major irregularities diversify the Atlantic floor. Closely spaced soundings show that many parts of the oceanic floors are as rugged as mountainous regions of the continents. Use of the recently perfected method of submarine topography. During world war II great strides were made in mapping submarine surfaces, particularly in many parts of the vast Pacific basin.

Most of the continents stand on an average of 2870 feet above sea level. North America averages 2300 feet; Europe averages only 1150 feet; and Asia, the highest of the larger continental subdivisions, averages 3200 feet. Mount Everest, which is the highest point in the globe, is 29,000 feet above the sea; and as the greatest known depth in the sea is over 35,000 feet, the maximum relief (that is, the difference in altitude between the lowest and highest points) exceeds 64,000 feet, or exceeds 12 miles. The continental masses and the deep-sea basins are relief features of the first order; the deeps, ridges, and volcanic cones that diversify the sea floor, as well as the plains, plateaus, and mountains of the continents, are relief features of the second order. The lands are

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unendingly subject to a complex of activities summarized in the term erosion, which first sculptures them in great detail and then tends to reduce them ultimately to sea level. The modeling of the landscape by weather, running water, and other agents is apparent to the keenly observant eye and causes thinking people to speculate on what must be the final result of the ceaseless wearing down of the lands. Much before there was any recognizable science as geology, Shakespeare wrote "the revolution of the times makes mountains level."

**21. The peripheral furrows or deeps are found**

- A. only in the Pacific and Indian oceans
- B. near earthquakes
- C. near the shore
- D. in the center of the ocean

**22. The largest ocean is the**

- A. Atlantic
- B. Pacific
- C. Aleutian deep
- D. Arctic

**23. We may conclude from this passage that earth quakes**

- A. Occur more frequently in newly formed land or sea formations
- B. Are caused by the weight of the water
- C. Cause erosions
- D. Quite often occur in the deeps

**24. The highest mountains are**

- A. oldest
- B. in excess of 12 miles
- C. near the deeps
- D. of recent origin

**25. Great advances in the science of geology were made**

- A. By the Greeks
- B. During World War II
- C. April 1946
- D. After 1600

**26. The highest point on North America is**

- A. 2870 feet above sea level
- B. not mentioned in the passage
- C. higher than the highest point on Europe
- D. 2300 feet above sea level

**27. The deeps are subject to change caused by**

- A. Erosion
- B. Soundings
- C. Earthquakes
- D. Waste

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**28. The continental masses**

- A. rise above sea level
- B. consist of six continents
- C. are relief features of the second order
- D. are partially submerged

**Passage 2**

Erosion is regarded not merely as the physical removal of soil by water and wind, but rather as the deterioration of all the component parts of the habitat in which man and his crops and livestock have to exist. Since there is no conclusive evidence for any major climatic change in historic times to explain this deterioration, we must conclude that the eroding of the total environment has been due primarily to thoughtless destruction of the vegetative cover. This has led to deterioration of the microclimate above and below the surface, generally in the direction of a general drying out of the soil which has exposed it to erosive action of wind and rainfall of high intensity or frequency, and to the loss of organic matter in the soil, thus reducing its capacity to resist erosion by conserving the water that falls on the surface. If everything possible is done within the total environment to conserve the naturally planted or cultivated vegetation, this will also ensure optimal conservation of soil and water.

**29. It is argued in the passage that the impoverishment of the world's habitat .....**

- A. is first and foremost due to man's irresponsible abuse of the vegetable cover of the earth
- B. is largely due to gradual changes in climate over long years
- C. became inevitable as soon as agricultural and animal husbandry developed
- D. cannot be remedied

**30. The definition of erosion given in this passage .....**

- A. is a strictly regional one
- B. disregards man's role in it
- C. concentrates on flooding
- D. is a broad one

**31. It is pointed out in the passage that the loss of organic matter in the soil .....**

- A. led to the destruction of the world's vegetative cover
- B. is a direct result of insufficient rain
- C. is an irreversible process
- D. has made the soil more susceptible to erosion

**Passage 3**

The poetic expressiveness and creativity of Japanese women poets of the Manyoshu era is generally regarded as a manifestation of the freedom and relatively high political and economic status women of that era enjoyed. During the Heian period (A.D. 794-1185) which followed, Japanese women became increasingly relegated to domestic roles under the influence of Buddhism and Confucianism, which excluded women from the political and economic arenas. Yet, since poetry of the period came to be defined solely as short lyrical poetry, known as waka, and became the prevailing means of expressing love, women continued to excel in and play a central role in the development of classical Japanese poetry. Moreover, while official Japanese documents were written in Chinese, the phonetic alphabet kana was used for poetry. Also referred to as onna moji ("women's letters"), kana was not deemed sufficiently sophisticated for use by Japanese men, who continued to write Chinese poetry, increasingly for expressing religious ideas and as an intellectual pastime. Chinese poetry ultimately yielded, then, to waka as the mainstream of Japanese poetry.

**32 Based on the passage, mainstream Japanese poetry of the Heian period can best be described as .....**

- A. philosophical in its concern
- B. more refined than the poetry of the Manyoshu era
- C. an outgrowth of Buddhism and Confucianism
- D. sentimental in nature and lyrical in style

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33. Which of the following statements about kana finds the LEAST support in the passage?

- A. It was based on the sound of the Japanese language
- B. It was used primarily by Japanese women
- C. It was used for Japanese poetry but not for Japanese prose
- D. It was used in Japan after A.D. 793

34. The author's primary purpose in the passage is to .....

- A. refute a common explanation for the role of women in the development of Japanese poetry
- B. identify the reasons for the popularity of a distinct form of literary expression in Japan
- C. distinguish between the Japanese poetry of one historical period with that of another
- D. provide an explanation for the role of women in the development of Japanese poetry

Qs 35-45. Choose the answer that is most appropriate to correct the given sentences.

35. It is highly desirable that you furnish evidence of your expenses before you submit your final accounts.

- A. It is highly desirable that you furnish evidence of your expenses
- B. It is highly desirable that you should furnish evidence of your expenses
- C. It is highly to be desired that you furnish evidences of your expenses
- D. You must furnish evidence of your expenses

36. The population of tigers in the National Park is increasing steadily, and this is a source of encouragement to those who have worked so hard to fund the conservation effort.

- A. steadily, and this
- B. steadily: which
- C. steadily; this trend
- D. steadily, this increase

37. In the fine print at the end of the document lies the clauses that make us liable for any expenses that result from civil unrest.

- A. lies the clauses that make us liable for any expenses that
- B. lies the clauses that make us liable for any expenses which
- C. lies the clause that make us liable for any expenses that
- D. lie the clauses that make us liable for any expenses that

38. The administration discussed whether the number of students studying European languages was likely to decline when the senior lecturer retired.

- A. whether the number of students studying European languages was likely
- B. whether the number of students studying European languages were likely
- C. if the students studying European languages were likely
- D. if the number of European language students were likely

39. If the gardener would sow the seeds in the greenhouse rather than the garden, he might get a better display of flowers.

- A. If the gardener would sow the seeds in the greenhouse rather than the
- B. If the gardener sowed the seeds in the greenhouse rather than the garden
- C. If the gardener would sow the seeds in the greenhouse rather than in the garden
- D. If the gardener were to sow the seeds in the greenhouse rather than in the garden

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**40. On Discovery channel last night they showed an informative program about new innovations in medical imaging, which you would have found interesting.**

- A. they showed an informative program about new innovations in medical imaging, which you would have found interesting.
- B. they showed an informative program about innovations in medical imaging, which you would have found interesting.
- C. they showed an informative program about innovations in medical imaging, that you would have found interesting
- D. there was an informative program about innovations in medical imaging, a program you would have found interesting.

**41. After working for two hours, the essay started to take shape, and he began to hope that he might finish before the deadline.**

- A. After working for two hours, the essay started to take shape, and he began to hope
- B. When the essay started to take shape after he had worked on it for two hours, he began to hope
- C. When the essay started to take shape after he had worked on it for two hours, he begun to hope
- D. When the essay started to take shape after working on it for two hours, he began to hope

**42. The young man was surprised to find that his experience as a tutor had been used as the basis for the protagonist in a short story written by a former girlfriend.**

- A. that his experience as a tutor had been used as the basis for the protagonist in
- B. his experience as a tutor having been used as the protagonist in
- C. his experience as a tutor had been used as the basis for the protagonist's in
- D. that his experience as a tutor had been used as the basis for events in the life of the protagonist in

**43. In the engineering sector at the moment there are no jobs for those without experience, which makes it difficult for we recent graduates to get started on our careers.**

- A. at the moment there are no jobs for those without experience, which makes it difficult for we
- B. at the moment there are no jobs for those without experience, which makes it difficult for us
- C. there are no jobs at the moment for those without experience, a fact that makes it difficult for us
- D. there are no jobs at the moment for those without experience, which makes it difficult for us

**44. The mole is a nocturnal insectivorous mammal regarded as pests by gardeners because of their burrowing activity spoiling lawns and gardens.**

- A. regarded as pests by gardeners because of their burrowing activity spoiling
- B. regarded to be pests by gardeners because of their burrowing activity's spoiling
- C. regarded as a pest by gardeners because of burrowing activity spoiling
- D. regarded as a pest by gardeners because its burrowing activity spoils lawns and gardens

**45. Trying to keep her balance on the icy surface, the last competitor's ski-tip caught the pole and somersaulted into the soft snow.**

- A. the last competitor's ski-tip caught the pole and somersaulted into the soft snow.
- B. the ski-tip of the last competitor caught the pole and somersaulted in the soft snow.
- C. the last competitor caught the pole with the tip of her ski, and somersaulted into the soft snow.
- D. the last competitor caught the pole with her ski-tip, which made her somersault into the soft snow.

**Stop. Before turning to the next page, wait for the invigilator's signal.**

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Mathematics M.C.Q's

No. of Questions: 50 (from 46 to 95)

Time: 60 Minutes

Questions on Page Numbers: 8 To 14.

Negative Marking: Yes

46. The average of 6, 7, 5, 8, 2, and k is 8. What is the median of this set?

- A) 8
- B) 6.5
- C) 6.75
- D) 5

47. The average of four numbers is 75. If three of the numbers are 45, 80 and 65, what is the largest number?

- A) 130
- B) 120
- C) 110
- D) 80

48. For which of the following ordered pairs  $(x, y)$  is  $x - 3y < 10$  and  $x + y > 7$ ?

- A) (5, 1)
- B) (6, 1)
- C) (3, -3)
- D) (4, 4)

49. If  $x^2 + x + y = 8$  and  $x > 0$ , then what is the value of  $\frac{y-8}{x(x+1)}$ ?

- A) 1
- B) 2
- C) -1
- D) None of these

50. If  $3x - 2y = 70$  and  $y = 4x$ , then  $y =$

- A) -14
- B) -56
- C) 14
- D) 56

51. The expression  $-2(x^2 + 4) + x(x + 9)$  is equivalent to which of the following expressions?

- I.  $(x-1)(8-x)$
- II.  $(1-x)(x-8)$
- III.  $-x^2 + 9x - 8$

- A) I only
- B) II only
- C) I and II only
- D) I, II and III

52. If  $\frac{x}{3y} = \frac{4}{7}$  and  $\frac{z}{5y} = \frac{2}{21}$ , then  $\frac{x}{z} =$

- A)  $\frac{5}{18}$
- B)  $\frac{18}{5}$
- C)  $\frac{7}{36}$
- D) None of these

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53. If  $a - b = 10$ ,  $a + c = 20$ , and  $b - c = -30$ , then  $a =$   
A) 4  
B) 2  
C) 1  
D) 0
54. If  $(2500)(8,000) = 20 \times 10^x$ , then  $x =$   
A) 4  
B) 5  
C) 6  
D) None of these
55. If  $3^{x-1} = 243$ , what is the value of  $x$ ?  
A) 3  
B) 4  
C) 5  
D) 6
56. If  $x = -3$  is a solution of the equation  $x^2 = 6x + d$  where  $d$  is a constant, what is another value of  $x$  that satisfies the equation?  
A) -5  
B) -9  
C) 9  
D) 6
57. If  $x^2 + y^2 = 200$  and  $xy = 40$ , then  $(x - y)^2 =$   
A) 200  
B) 280  
C) 120  
D) None of these
58. If  $\frac{y-x}{x+y} = \frac{7}{9}$ , then  $x - y =$   
A) 7  
B)  $7(x + y)$   
C)  $-7x$   
D) None of these
59. If  $g(x) = 7x - a$ , where  $a$  is a constant, and  $g(10) = 3g(20)$ , then  $g(30) =$   
A) -175  
B) 175  
C) 70  
D) 35
60. Starting from June 20, 2011 the GST has been reduced by one per cent (i.e. 17 to 16 per cent). How much money you have to pay for a certain commodity (which is not exempted from GST) today, if you have paid Rs 3510 for the same commodity on June 19, 2011?  
A) Rs 4071.6                      B) Rs 3570                      C) Rs 3480                      D) None of these

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61. A square has the same area as a right triangle with sides of lengths 3, 4, and 5. What is the length of one side of the square?
- A)  $2\sqrt{3}$   
B)  $\sqrt{6}$   
C) 8  
D) None of these
62. Jamil and Ehsan together weigh 150 kgs. Ehsan and Riaz together weigh 220 kgs. All three together weigh 300 kgs. What is Jamil's weight?
- A) 70 kgs  
B) 80 kgs  
C) 150 kgs  
D) None of these
63. The equation given below is true for which of the following values of  $x$ ?
- $$2(x+2)^2 = -7 + (x-6)^2$$
- A) -1 and 21  
B) 1 and -21  
C) 0 and 1  
D) 1 only
64. The diameter of circle  $A$  is the same as of the radius of circle  $B$ . If the sum of their circumferences is  $81\pi$ , then what is the diameter of circle  $B$ ?
- A) 6  
B) 12  
C) 24  
D) None of these
65. If the length of a rectangle is increased by 30% and the width is decreased by 40%, then by what percent is the area of the rectangle increased / decreased?
- A) 35% increase  
B) 22% increase  
C) 22% decrease  
D) 35% decrease
66. Let  $x$  and  $y$  be positive integers. How much greater is the average of  $9x$ ,  $24y$ , and  $48$  than the average of  $6x$ ,  $18y$ , and  $12$ ?
- A)  $x + 2y + 12$   
B)  $x + 2y + 24$   
C)  $2x + y + 36$   
D) None of these
67. The statement  $\alpha \Leftrightarrow \beta$  is defined to be true if and only if  $\frac{\alpha - \beta}{-4} > 0$ . Which of the following is not true?
- A)  $1 \Leftrightarrow 3$   
B)  $4 \Leftrightarrow 5$   
C)  $6 \Leftrightarrow 8$   
D)  $8 \Leftrightarrow 6$

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68. In the  $xy$ -plane, the line  $2x - my = m$  passes through the point  $(m, 5m)$  where  $m$  is a positive constant. What is the value of  $m$ ?

- A) 0.1
- B) 0.2
- C) 0.3
- D) 0.4

69. If  $y$  is a number less than  $-1$  but greater than  $-2$ , which of the following expressions has the greatest value?

- A)  $10y$
- B)  $y^{-2}$
- C)  $y^{-3}$
- D)  $y^{-4}$

70. The product of five consecutive odd integers is 945. What is the greatest possible value of any one of these integers?

- A) 4
- B) 7
- C) 9
- D) 11

71. For  $x > 0$ , the function  $f(x)$  is defined by the equation  $f(x) = x^2 - \sqrt{x}$ . What is the value of  $f\left(\frac{1}{4}\right)$ ?

- A)  $\frac{7}{16}$
- B)  $-\frac{7}{16}$
- C)  $-\frac{1}{4}$
- D) None of these

72. If  $x$  is a positive number and  $4|x| + 3 < 11$ , then which of the following must be true?

- A)  $x > -2$
- B)  $x < 2$
- C)  $0 < x < 2$
- D)  $-2 < x < 2$

73. If  $x$  is a number chosen randomly from set  $\{3, 5, 7, 9, 11\}$  and  $y$  is a number chosen randomly from set  $\{4, 6, 8, 10\}$ , what is the probability that  $x + y$  is greater than 13?

- A) 0.9
- B) 0.7
- C) 0.5
- D) 0.3

74. A sequence of numbers begins with the numbers  $-10, 20, 30, \dots$ , and each term afterward is the product of the preceding three terms. How many of the first 101 terms of this sequence are positive?

- A) 49
- B) 50
- C) 51
- D) 52

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75. The sum of two numbers is 10 and their difference is 20. Which of the following could be the difference of their squares?
- A) -10  
B) -20  
C) 10  
D) 200
76. A rectangle has sides of length  $\sqrt{6x}$  cm and  $\sqrt{12x}$  cm. What is the length of a diagonal of the rectangle?
- A)  $3\sqrt{2x}$  cm  
B)  $\sqrt{6x} + \sqrt{12x}$  cm  
C)  $3\sqrt{2}x$  cm  
D) None of these
77. If  $\frac{h-1}{h-3} = \frac{h-3}{h-1}$  then what is the value of  $h$ ?
- A) 4  
B) 3  
C) 2  
D) None of these
78. The length and width of a rectangle are in the ratio of 3:5. If the rectangle has an area of 375 square centimeters, what is the perimeter, in centimeters, of the rectangle?
- A) 32  
B) 16  
C) 80  
D) 64
79. Last year, Tariq was twice as old as Jamil. This year, the sum of their ages is 86. How old is Jamil now?
- A) 25  
B) 27  
C) 29  
D) 31
80. How many even integers are there between 1 and 199?
- A) 99  
B) 98  
C) 97  
D) 96
81. Three coins are tossed at the same time. What is the probability that exactly one head is face up?
- A) 0.375  
B) 0.125  
C) 0.25  
D) None of these
82. The center of a circle is (1, 2) and the point (3, 13) is on the circle. What is the area of the circle?
- A)  $100\pi$   
B)  $115\pi$   
C)  $125\pi$   
D)  $175\pi$

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83. The graph of  $y = f(x)$  contains the points  $(-1, 5)$  and  $(1, 1)$ . Which of the following could be  $f(x)$ ?

I.  $f(x) = |3x - 2|$

II.  $f(x) = 2x^2 + 2x + 5$

III.  $f(x) = -2 + 3x$

- A) I only  
B) I and II only  
C) I and III only  
D) II and III only

84. All of the following could be the lengths of the sides of a right-angled triangle, except

- A) 3, 4, 5  
B) 6, 7, 8  
C) 5, 12, 13  
D) 11, 60, 61

85. If the sequence below continues according to the pattern shown, what is the sum of the first 305 terms of the sequence?

$$-3, 0, 6, -3, 0, 6, -3, 0, 6, \dots$$

- A) -305  
B) 305  
C) -610  
D) 610

86. If  $w^2 + 11w = w - 9$ , which of the following gives all possible values of  $w^3$ ?

- A) 81 only  
B) 1 only  
C) -1 and 729 only  
D) -1 and -729 only

87. What will be the next term of the series: 1, 1, 2, 3, 5, 8, 13, .....

- A) 19  
B) 20  
C) 21  
D) 22

88. Consider the function,  $f(x) = \begin{cases} 5|x| + 6, & \text{if } x > 0 \\ 5|x| - 6, & \text{if } x \leq 0 \end{cases}$ . Evaluate  $f(-x)$  if  $x = 10$ .

- A) -54  
B) 56  
C) -56  
D) 44

89. The salaries of three professors are in the ratio 7:8:9. If the highest salary is 450,000 rupees, then the smallest salary will be

- A) 500,000 rupees  
B) 400,000 rupees  
C) 350,000 rupees  
D) None of these

**ALL ANSWERS MUST BE GIVEN ON THE ANSWER SHEET**  
**BY CROSSING THE CORRESPONDING LETTER**

90. Which of the following is a prime number?

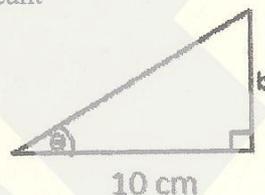
- A) 8
- B) 15
- C) 17
- D) 21

91. Solve the inequality  $3(x + 4) > 4x$

- A)  $x < -12$
- B)  $x > -12$
- C)  $x < 12$
- D)  $x > 12$

92. If the angle shown in the figure is given, which ratio would you use to find the length of  $b$ ?

- A) Sine
- B) Cosine
- C) Tangent
- D) Secant



93. The solution set of the equation  $|x - 14| = |x + 14|$  is

- A)  $\{0\}$
- B)  $\{14\}$
- C)  $\{-14\}$
- D)  $\{7\}$

94. What is the % increase in the area of a circle when its diameter increases by 20%?

- A) 20%
- B) 25%
- C) 21%
- D) 44%

95. The value of  $2\sqrt{192} - \sqrt{675} + 3\sqrt{12}$  is

- A)  $\sqrt{3}$
- B)  $3\sqrt{3}$
- C)  $5\sqrt{3}$
- D)  $7\sqrt{3}$

This is the end of Part 1 and Part 2. Please, wait for Part 3 (two essay questions).

**Essay Writing**

Name of the student \_\_\_\_\_

Each part 20 minutes

**I. Present your perspective on the topic below in three paragraphs, using relevant reasons and/or examples to support your views based on your own readings, observations and experience. (400 words)**

“Curiosity has its own reason for existing. One cannot help but be in awe when one contemplates the mysteries of eternity, of life, of the marvelous structure of reality. It is enough if one tries to comprehend only a little of this mystery every day.” Albert Einstein. Write about a personal experience or an aspect of the world that has engaged your curiosity or inspired awe in you.

**II. Discuss how well reasoned you find this argument. In your discussion be sure to analyze the line of reasoning and the use of evidence in the argument. (250 words)**

It is known that in recent years, industrial pollution has caused the Earth's ozone layer to thin, allowing an increase in the amount of ultraviolet radiation that reaches the Earth's surface. At the same time, scientists have discovered, the population of a species of salamander that lays its eggs in mountain lakes has declined. Since ultraviolet radiation is known to be damaging to delicate tissues and since salamander eggs have no protective shells, it must be the case that the increase in ultraviolet radiation has damaged many salamander eggs and prevented them from hatching. This process will no doubt cause population declines in other species, just as it has in the salamander species.