

# Sample Questions for JEMAT 2009

## ENGLISH

**Directions :** Read the passage carefully and choose the best answer out of the four alternatives and choose E if none of them is true.

### Passage 1

As medium of literary expression, the common language is inadequate. Like the man of letters, the scientist finds it necessary to 'give a purer sense to the words of the tribe'. But the purity of scientific language is not the same as the purity of literary language.

The aim of the scientist is to say only one thing at a time, and to say it unambiguously and with the greatest possible clarity. To achieve this, he simplifies and jargonizes. In other words, he uses the vocabulary and syntax of common speech in such a way that each phrase is susceptible to only one interpretation; and when the vocabulary and syntax of common speech are too imprecise for this purpose he invites a new technical language, or jargon specially designed to express the limited meaning with which he is professionally concerned. At its most perfectly pure. Scientific language ceases to the matter of words and terms into mathematics.

The literary artist purifies the language of the tribe in a radically different way. The scientist's aim, as we have seen is to say one thing, and only one thing at a time. This most emphatically, is not the aim of the literary artist. Human life is lived simultaneously in many levels and has many meanings. Literature is a device for reporting the multifarious facts and expressing their various significances. When the literary artist undertakes to give a pure sense to the words of his tribe, he does so with the express purpose of creating a language capable of conveying, not the single meaning of some particular science, but the multiple significance of human experience, its most private as well as on its more public levels.

1. The passage highlights the difference between :
  - A) **The language of science and of literature**
  - B) The language of the tribe and that of a civilized man
  - C) Jargon and language of the common man
  - D) The central purpose of science and literature
  
2. 'Jargon' in the context of the passage means :
  - A) Difficult language
  - B) Technical language
  - C) **Language with limited meaning**
  - D) Mathematical language

3. The purpose of literature according to the passage is :
- A) Express views privately as well as publicly
  - B) Report multifarious facts of life**
  - C) View life from various planes
  - D) None of the above
4. The language of science is :
- A) Precise**      B) Verbose      C) Ambiguous      D) None of the above
5. According to the passage :
- A) Language of science is pure
  - B) Language of literature is pure
  - C) The language of science and that of literature, each in its own way, makes for pure expression.**
  - D) None of the above

## **Passage – 2**

Alzheimer's disease impairs a person's ability to recall memories, both distant and as a few hours before. Although there is no cure yet for the illness, there may be hope for a cure with a protein called nerve growth factor. The protein is produced by nerve cells in the same region of the brain where Alzheimer's occurs. Based on this relationship, scientists from the University of Lund in Sweden and the University of California at San Diego designed an experiment to test whether doses of nerve growth factors could service the effects of memory loss caused by Alzheimer's. Using a group of rats with impaired memory, the scientist gave half of the rats doses of nerve growth factor while giving the other half a blood protein as a placebo, thus creating a control group. At the end of the four-week test, the rats given the nerve growth factor performed equally to rats with normal memory abilities, while experiments do not show that nerve growth factor can stop the general process of deterioration caused by Alzheimer's they do show potential as a means to slowing the process significantly.

1. This passage is mainly concerned with :
- A) Cures for Alzheimer's disease
  - B) Impaired memory of patients
  - C) The use of rats as experimental subjects
  - D) Never growth factor as a cure for Alzheimer's**

2. According to the passage where is nerve growth factor produce in the body ?
- A) In the pituitary gland
  - B) In nerve cells in brain**
  - C) In red blood cells in the circulatory system
  - D) In nerve cells in the special column
3. The word impairs (underlined) is most similar to which of the following ?
- A) Affects
  - B) Destroys
  - C) Enhances
  - D) Diminishes**
4. Which of the following can be inferred from the passage ?
- A) Alzheimer's disease is deadly**
  - B) Though unsuccessful, the experiments did show some benefits derived from new growth factors.
  - C) The experiment did not show any significant benefits from nerve growth factor
  - D) More work needs to be done to understand the effects of nerve growth centre
5. The passage most closely resembles which of the following patterns of organization ?
- A) Chronological
  - B) Statement and illustration**
  - C) Alphabetical order
  - D) None of the above

### **Passage – 3**

Over four hundred years after his death, scholars are still traveling the mysteries of Michelangelo's art. Recently one mystery that was revealed was that his famous drawing of a pensive Cleopatra included a hidden drawing of a different Cleopatra on the reverse side. This hidden Cleopatra shows a tormented woman, whose eyes stare out at the viewer and whose mouth is open, screaming in horror. The two images, drawn on two sides of the same paper, can be viewed simultaneously. A second mystery concerns Michelangelo's architectural plan for the dome of St. Peter's Basilica in Rome. Did he intend for the dome to look like the model he built between 1558 and 1561 ? Or did he change his mind after building the model and decide to elevate the dome in the way it is today ? Scholars do not agree on the answer. A third mystery about one of the greatest artists who ever lived was why he destroyed hundred or thousands of his drawings before he died. Did he feel they were unimportant ? Die he want posterity to see only his finished products ?

1. It can be inferred from the passage that the most unusual aspect of the Cleopatra drawing is that :
  - A) The figure is tormented.
  - B) The figure is screaming.
  - C) One drawing is hidden.**
  - D) One drawing is backward.
  
2. The word “pensive” (underlined) can best be substituted with the word :
  - A) Angry
  - B) Happy
  - C) Anxious
  - D) Thoughtful**
  
3. The dome of St. Peter’s Basilica :
  - A) Bears no relation to the one in the model.
  - B) Was destroyed after the model was built
  - C) Is raised more than the one in the model**
  - D) Follows the plan of the model
  
4. According to the passage, Michelangelo is :
  - A) A private person
  - B) One of greatest artists in the world**
  - C) The most famous architect in Rome.
  - D) Screaming in horror.
  
5. Why did Michelangelo destroy so many drawings before he died ?
  - A) Nobody knows**
  - B) They were unimportant
  - C) They were only drafts
  - D) He had changed the drawings.

#### **Passage 4**

There is one circumstance in a learned education which ought to have much weight, even with those who have no learning at all. The books read at school and colleges are full of incitements to virtue and discouragements from vice, drawn from the wisest reasons, the strongest motives, and the most influencing examples. Thus, young minds are filled early with an inclination to good and an abhorrence of evil, both which increase in them according to the advances they make in literature; and, although they may be, and too often are, drawn by the temptations of youth, and the opportunities of a large fortune, into some irregularities when they come forward into the great world, it is ever with reluctance and compunction of mind, because their bias to virtue still continues,. They may stray sometimes out of infirmity or compliance, but they will soon return to the right

road and keep it always in view. I speak only of those excesses which are too much the attendants of youth and warmer blood, for, as to the points of honour, truth, justice, and other noble gifts of the mind wherein the temperature of the body hath no concern, they are seldom or ever known to be wild.

1. The books one reads at school and college
  - (A) do not affect the readers in any way
  - (B) the reader gains nothing from them
  - (C) the reader learns about the good and the bad
  - (D) **they form good habits and bad habits in the learner**
  
2. 'Some irregularities' as used in the passage means
  - (A) **some acts that are wrong or evil**
  - (B) some objects that are not regular or smooth
  - (C) somethings that do not have proper shape or size
  - (D) some actions that do not legal permission
  
3. When young people enter the great world they
  - (A) willingly commit acts of evil
  - (B) **try very hard not do commit acts of evil**
  - (C) inspite of trying hard not to do commit acts of evil
  - (D) never do any evil acts at all
  
4. Even if young people commit some irregularities they are never completely lost because
  - (A) they always keep the right road in view
  - (B) they have come into a great world
  - (C) **they are guided by their inner virtues**
  - (D) they are guided by virtuous people
  
5. Noble gifts of the mind refers to
  - (A) gifts of value received by the mind
  - (B) valuable gifts presided to the mind
  - (C) **fine qualities of the mind**
  - (D) fine qualities of the noble people

**Directions** : Each of these question consists of a word, followed by four words. Choose the word that is most nearly opposite in meaning to the word given in question:

1. **MYOPIC**

- A) Black      (B) Gloomy      (C) **Farsighted**      (D) Perfumed

2. **TENACIOUS**

- A) Faint-hearted      (B) Yielding      (C) Erroneous      (D) **Praiseworthy**

3. **RADICAL**

- A) Fashionable      (B) Diabolic      (C) **Conservation**      (D) Myopic

4. **FLAMBOYANT**

- A) Lateral      (B) **Dull**      (C) Maverick      (D) Antique

5. **TANTALISING**

- A) Toiling      (B) Seance      (C) **Repulsive**      (D) Seamy

6. **PROLIFERATE**

- A) Reproduce      (B) Thrive      (C) **Impel**      (D) Burgeon

7. **REMOTE**

- A) Secluded      (B) Distant      (C) Slight      (D) **Compunction**

8. **IMMACULATE**

- A) Spotless      (B) Sinless      (C) **Omnipresent**      (D) Innocent

9. **DOCILE**

- A) **Unmanageable**      (B) Dutiful      (C) Submissive      (D) Painful

10. **EQUIVOCAL**

- A) Mistaken      (B) Quaint      (C) **Clear**      (D) Universal

**Directions** : Each of these questions consists of a word given in CAPITALS, followed by four words. Choose the word that is most nearly the same in meaning to the given in CAPITALS. Since some of the questions require you to distinguished the fine shades of meaning, be sure to consider all the choices before deciding which one is the best :

1. **SERENDIPITY**

A) Peace                    **(B) Luck**                    (C) Joy                    (D) Fate

2. **PUCKISH**

A) Cheerful    (B) Disc-like                    (C) Gullible                    **(D) Mischievous**

3. **SACCHARINE**

A) Clumsy                    (B) Carriage                    (C) **Syrupy**                    (D)  
Caustic

4. **TENACIOUS**

A) **Determined**    (B) Peevish                    (C) Brazen                    (D) Impious

5. **INEBRIETY**

A) **Drunkenness**    (B) Gluttony                    (C) Felory                    (D) Starvation

6. **INUNDATE**

A) Abuse                    (B) Deny                    (C) Swallow                    **(D) Floop**

7. **AUXILIARY**

A) Righteous                    (B) Prospective                    **(C) Assistant**  
(D) Invoice

8. **AWRY**

A) Recommended                    (B) Commiserating                    (C) Startled  
**(D) Crooked**

9. **BRAZEN**

A) **Shameless**                    (B) Quick                    (C) Modest                    (D) Pleasant

10. **CACHE**

- A) Lock                      (B) **Hiding Place**    (C) Tide                      (D) Automobile

## DICTIONARY USAGE

**Directions :** In each questions, the word at the top of the table is used in four different ways, numbered (A) to (D). Choose the option in which the usage of the word is incorrect or inappropriate.

1.     **Near**

- A) I got there just after you left-a near miss !  
B) **She and her near friend left early**  
C) The ear led to a near doubling of oil prices  
D) They came near to tears seeing the plight of the victims.

2.     **Hand**

- A) **I have my hand full, I cannot do it today**  
B) The minister visited the jail to see the breach at first hand.  
C) The situation is getting out of hand here !  
D) When the roof of my house was blown away. He was willing to lend me a hand

3.     **For**

- A) He has a great eye for detail  
B) We are waiting for the day  
C) **I can't bear for her to be angry**  
D) It couldn't be done for ever.

4.     **Fallout**

- A) Nagasaki suffered from the fallout of nuclear radiation.  
B) People believed that the political fallout of the scandal would be insignificant.  
C) Who can predict the environmental fallout of the WTO agreements ?  
D) **The headmaster could not understand the fallout of several of his good students at the public examination.**

5.     **Passing**

- A) She did not have passing marks in mathematics.  
B) **The mad woman was cursing everybody passing her on the road.**  
C) At the birthday party all the children enjoyed a game of passing the parcel.



- D) A passing taxi was stopped to rush the accident victim to the hospital.
6. **Bolt**
- A) The shopkeeper showed us a bolt of fine silk.  
**B) As he could not move, he made a bolt for the gate.**  
C) Could you please bolt the door ?  
D) The thief was arrested before he could bolt from the scene of the crime.
7. **Help**
- A) This syrup will help your cold.  
B) I can't help the colour of my skin  
**C) Ranjit may help himself with the beer in the fridge.**  
D) Do you really expect me to help you out with cash ?
8. **Reason**
- A) Your stand is beyond all reason.  
B) Has she given you any reason for the resignation ?  
C) There is little reason in your pompous advice.  
**D) How do you deal with a friend who doesn't listen to a reason ?**
9. **Paper**
- A) Your suggestions look great on the paper, but are absolutely impractical.**  
B) Do you know how many trees are killed to make a truckload of paper ?  
C) So far I have been able to paper over the disagreements among my brothers.  
D) Dr. Malek will read a paper on criminalization of politics.
10. **Business**
- A) I want to do an MBA before going into business  
**B) My wife runs profitable business in this suburb.**  
C) If we advertise we will get twice as much business as we have now.  
D) How you spend your money is as much my business as your.

**Directions : Fill in the blanks in given sentence with appropriate words.**

1. This simplified \_\_\_\_\_ to the decision making process is a must read for any one \_\_\_\_\_ important real estate, personal or professional decision.

- a. printer , maximizing
  - b. tract , enacting
  - c. introduction , under
  - d. guide , facing**
2. Physicians may soon have \_\_\_\_\_ to help paralyzed people move their limbs by bypassing the \_\_\_\_\_ nerves that once controlled their muscles.
- i) instruments , detrimental
  - ii) ways , damaged**
  - iii) reason , involuntary
  - iv) impediments, complex
3. The internet is a medium where users have nearly \_\_\_\_\_ choices and \_\_\_\_\_ constraints about where to go and what to do
- i) unbalanced , non-existent
  - ii) embarrassing , no
  - iii) unlimited , minimal**
  - iv) choking , shocking
4. Companies that try to improve employees' performance by \_\_\_\_\_ rewards encourage negative kinds of behaviour instead of \_\_\_\_\_ a genuine interest in doing the work well.
- i) giving , seeking
  - ii) bestowing , discouraging
  - iii) conferring , discrediting**
  - iv) **withholding , fostering**
5. The \_\_\_\_\_ regions of Spain all have unique cultures, but the \_\_\_\_\_ views within each region make the issue of an acceptable common language of instruction an even more contentious one.
- i) **different , discrete**
  - ii) distinct , disparate
  - iii) divergent , distinct
  - iv) different , competing
6. Since, her face was free of \_\_\_\_\_ there was no way to \_\_\_\_\_ if she appreciated what had happened.
- i) make-up , realize
  - ii) expression , ascertain**
  - iii) emotion , diagnose
  - iv) scars , understand

7. In this context, the \_\_\_\_\_ of the British labour movement is particularly \_\_\_\_\_
- i) affair , weird
  - ii) activity , moving
  - iii) experience , significant**
  - iv) atmosphere , gloomy
8. Though one eye is kept firmly on the \_\_\_\_\_ the company now also promotes \_\_\_\_\_ contemporary art.
- i) present , experimental
  - ii) future, Popular**
  - iii) present, Popular
  - iv) market , Popular
9. It will take some time for many South Koreans to \_\_\_\_\_ the conflicting images of North Korea, let alone to \_\_\_\_\_ what to make of their northern cousins.
- i) Reconcile, decide**
  - ii) Understand, clarify
  - iii) make out, decide
  - iv) reconcile , understand
10. When children become more experience with words as visual symbols, they find that they can gain meaning without making \_\_\_\_\_ sounds.
- i) aural
  - ii) audible**
  - iii) vocal
  - iv) intelligible

## MATHEMATICS

- Two taps can fill a tank in 15 and 12 minutes respectively. A third tap can empty it in 20 minutes. If all the taps are opened at the same time then in how much time will the tank be filled ?  
A)  $8\frac{1}{2}$  days                      B) **10 minutes**  
C)  $11\frac{1}{3}$  days                      D) 14 minutes
- There were two candidates in an election. 10% of the voters did not vote. 60 votes were declared invalid. The elected candidate got 308 votes more than his opponent. If the elected candidate got 47% of the total votes, how many votes did each candidate get ?  
A) 2316 and 2012                      B) 2629 and 2324  
C) 2871 and 2575                      D) **2914 and 2606**
- 4 men and 10 women were put on a work. They completed  $\frac{1}{3}$  of the work in 4 days. After this 2 men and 2 women were increased. They completed  $\frac{2}{9}$  more of the work in 2 days. If the remaining work is to be completed in 3 days, then how many more women must be increased ?  
A) 32                      B) **8**                      C) 50                      D) 55
- Four horses are tied on the four corners of square field of 14 m length so that each horse can just touch the other two horses. They were able to graze in the area accessible to them for 11 days. For how many days is the ungrazed area sufficient for them ?  
A) **3 days**                      B) 4 days                      C) 5 days                      D) 2 days
- The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds respectively. If they all change simultaneously at 8 : 20 hours, then at what time will they again change simultaneously ?  
A) 8 : 20 : 08 hrs.                      B) 8 : 24 : 10 hrs.  
C) **8 : 27 : 12 hrs.**                      D) 8 : 30 : 15 hrs.
- A man has 1044 candles. After burning, he can make a new candle from 9 stubs left behind. Find the maximum number of candles that can be made ?  
A) **116**                      B) 120                      C) 130                      D) 140

7. Three dealers A, B, and C offer an article at the same list price. A allows a series of discount of 25% and 15%. B allows a series of discount of 10% and 30%, while C offers a single discount of 36%. Then

- a. A's offer is best
- b. All the offers are the same
- c. B's offer is best**
- d. C's offer is best

8. Two cyclists start on a circular track from a given point but in opposite directions with speeds of 7 m/sec and 8 m/sec respectively. If the circumference of the circle is 300 meters, after what time will they meet at the starting point ?

- A) 100 sec                      B) 20 sec                      **C) 300 sec**                      D) 200 sec

9. If 5 men and 2 boys working together can do four times as much work per hour as a man and a boy do together, the ratio of the work of a man to that of a boy for a given time is

- A) **2 : 1**                      B) 1 : 2                      C) 1 : 3                      D) 3 : 1

10. If it takes 10 days to dig a trench 100 m long, 50 m broad and 10 m deep, what length of trench 25 m broad and 15 m deep can be dug in 30 days

- A) **400 m**                      B) 200 m                      C) 100 m                      D) 800/9 m

11. In order that the number 1 Y 3 Y 6 is divisible by 11, the digit Y should be

- A) 1                      B) 2                      **C) 5**                      D) 6

12. The numbers 1, 3, 5, \_\_\_\_\_ 25 are multiplied together. The number of zeros at the right end of the product is

- A) 1                      **B) 0**                      C) 2                      D) 3

13. How many numbers between 200 and 600 are divisible by 4, 5 and 6 ?

- A) 5                      B) 9                      **C) 7**                      D) 8

14. The greatest is among

$\sqrt{13} - \sqrt{11}$ ,  $\sqrt{7} - \sqrt{5}$  and  $\sqrt{5} - \sqrt{3}$  is

- A)  $\sqrt{13} - \sqrt{11}$                       **B)  $\sqrt{5} - \sqrt{3}$**

C)  $\sqrt{7} - \sqrt{5}$

D) None of these.

15. First 100 multiples of 10, i.e., 10, 20, 30 \_\_\_\_\_ 1000 are multiplied together. The number of zero at the end of the product will be

A) 100

B) 111

C) **120**

D) 125

16. The smallest fraction which should be subtracted from the sum of  $1\frac{3}{4}$ ,  $2\frac{1}{2}$ ,  $5\frac{7}{12}$ ,  $3\frac{1}{3}$  and  $2\frac{1}{4}$  to make the result a whole number is

A)  $\frac{5}{12}$

B)  $\frac{1}{2}$

C)  $\frac{7}{12}$

D) 7

17. The sum of the three consecutive even numbers is 28 more than the average of these three numbers. What is the first of these three numbers ?

A) 14

B) **12**

C) 16

D) None of these

18. When a number is divided by 8, the remainder is 6 and when the same number is divided by 7, the remainder is 5, what is the number ?

A) 51

B) 37

C) **54**

D) Data Inadequate

19. In a committee, 50 people speak French, 20 speak Spanish and 10 speak Spanish and French. The number of persons speaking at least one of these two languages is :

A) 60

B) **40**

C) 38

D) None of these

20. How many 5 digit numbers can be formed by using all the digits 0, 2, 4, 7 and 5 not divisible by 75 ?

A) 14

B) 18

C) 78

D) **82**

21. The H.C.F. and L.C.M. of two numbers are 21 and 4641 respectively. If one of the numbers lies between 200 and 300, then the two numbers are :

A) **273, 357**

B) 273, 361

C) 273, 359

D) 273, 363

22. There are two examination rooms and B. If 10 candidates are sent from A to B, then the number of students in each room becomes the same. If 20 candidates are sent from B to A, then the number of students in A becomes double the number of students in B. Find the number of students in each room.

A) **100 in A and 80 in B**

B) 80 in A and 100 in B

C) 120 in A and 100 in B

D) 100 in A and 120 in B

23. The least value of  $3^x + 3^{-x}$  is

A) **2**

B) 1

C) 0

D) 2/3

24. If a, b, c are real numbers such that :

$$a - b + c < 1$$

$$a + b + c > -1 \text{ and}$$

$$9a + 3b + c < -4, \text{ then what is the sign of "a" ?}$$

A) "+" only

**B) '—'**

C) '+' or '—'

D) Cannot say

25. The sum of two numbers is 462 and their highest common factor is 22. What is the maximum number of pairs that satisfy these conditions ?

A) 1

B) 3

C) 2

**D) 6**

26. The ages of the two persons differ by 20 years. If 5 years ago, the older one be 5 times as old as the younger one, then their present ages, in years, are

A) 25, 5

**B) 30, 10**

C) 35, 15

D) 50, 30

27. If  $(a + b + 2c + 3d)(a - b - 2c + 3d) = (a - b + 2c - 3d) \times (a + b + 2c - 3d)$ , then  $2bc$  is equal to :

**A) 3 ad**

B) 3/2

C)  $a^2d^2$

D)  $3a/2d$

28. Students of a class are preparing for a drill and are made to stand in a row. If 4 students are extra in a row, then there would be 2 rows less. But there would be 4 more rows if 4 students are less in a row. The number of students in the class is :

- A) **96**                      B) 56                      C) 69                      D) 65

29. Several liters of acid were drawn off a 54 liter vessel full of acid and an equal amount of water added. Again the same volume of the mixture was drawn off and replaced by water. As a result the vessel contained 24 liters of pure acid. How much of the acid was drawn off initially ?

- A) 12 liters                      B) 16 liters                      C) **18 liters**                      D) 24 liters

30. In a zoo, there are rabbits and pigeons. If their heads are counted, these are 90 while their legs are 224. find the number of pigeons in the zoo.

- A) 70                      B) **68**                      C) 72                      D) 22

31. What least number must be subtracted from each of the numbers 14, 17, 34 and 42 so that the remainders are proportional ?

- A) 0                      B) 1                      C) **2**                      D) 7

32. If the polynomial  $f(x)$  is such that  $f(-43) = 0$ , then a factor of  $f(x)$  is :

- A)  $x - 43$                       B)  $x$                       C)  $x - 7$                       D)  **$x + 43$**

33. An alloy contains copper and zinc in the ratio 5 : 3 and another alloy contains copper and tin in the ratio 8 : 5. If equal weights of both the alloys are melted together, then the weight of tin in the resulting alloy per kg. Will be :

- A)  $\frac{26}{5}$                       B)  $\frac{5}{26}$   
C)  $\frac{7}{31}$                       D)  $\frac{31}{7}$



34. A portion of a 30 m long tree is broken by a tornado and the top strikes the ground making an angle of  $30^\circ$  with the ground level. The height of the point where the tree is broken is equal to

A) 10 m

B)  $\frac{30}{\sqrt{3}}m$

C)  $30\sqrt{3}$  m

D) 60 m

35. If three equal cubes are placed adjacently in a row, then the ratio of the total surface area of the new cuboid to that of the sum of the surface areas of the three cubes will be

A) 5 : 9

B) 1 : 3

C) 2 : 3

**D) 7 : 9**

36. If an area enclosed by a circle or a square or an equilateral triangle is the same, then the maximum perimeter is possessed by :

A) circle

B) square

**C) equilateral triangle**

a. both triangle and square

37. If  $\frac{5\pi}{6}$  is the measure of each interior angle of a regular convex polygon, then it must be a

A) Octagon

B) Hexagon

**C) Dodecagon**

D) Decagon

38. If two diameters of a circle intersect each other at right angles, then the quadrilateral formed by joining their end points is a :

A) Rhombus

B) Rectangle

**C) Square**

D) Parallelogram

39. Of all the chords of a circle passing through a given point in it, the smallest is that which :

a. Is trisected at the point

b. Is bisected at the point

c. Passage through the center

**d. None of these**

40. A rhombus OABC is drawn inside a circle whose center is at O in such a way that the Vertices A, B, and C of the rhombus are on the circle. If the area of the rhombus is  $32\sqrt{2}$  m<sup>2</sup>, then the radius of the circle is :

- A) 64 m                      **B) 8 m**                      C) 32 m                      D) 46 m

41. In a quadrilateral ABCD,  $\angle B = 90^\circ$  and  $AD^2 = AB^2 + BC^2 + CD^2$ , then  $\angle ACD$  is equal to :

- A) **90°**                      B) 60°                      C) 30°                      D) None of these

42. Let ABC be an acute-angled triangle and CD be the altitude through C. If AB = 8 and CD = 6, then the distance between the mid-points of AD and BC is

- A) 36                      B) 25                      C) 27                      **D) 5**

43. Two isosceles triangles have equal vertical angles and their areas are in the ratio 9 : 16. The ration of their corresponding heights is :

- A) **3 : 4**                      B) 4 : 3                      C) 2 : 1                      D) 1 : 2

44. Out of 13 applicants for a job, there are 5 women and 8 men. It is desired to select 2 person for the job. The probability will be a woman is

- A) **25/39**                      B) 14/39                      C) 5/13                      D) 10/13

45. There are 100 students in a college class of which 36 are boys studying statistics and 13 girls in all, the probability that boy picked up at random is not studying, statistics, is :

- A) 3/5                      B) 2/5                      **C) 1/5**                      D) None of these

46. A room has 3 lamps. From a collection of 10 light bulbs of which 6 are not good, a person selects 3 at random and puts them in a socket. The probability that he will have light is

- A) **5/6**                      B) 1/2                      C) 1/6                      D) None of these

47. The mean of 1, 7, 5, 3, 4 and 10 is m. The mean of 10, 12, 3, 5, 1, 7 and P is m + 1 and their median is q. then q is equal to :

A) 4

**B) 5**

C) 10

D) 12

48. In a company, each employee gives a gift to every other employee. If the number of gifts is 132, then the number of employees in the company is :

A) 11

B) 13

**C) 12**

D) 8

49. The number of rectangles that you can find on a chessboard is :

A) 1764

B) 1600

C) 1825

**D) 1296**

50. From amongst 36 teachers in a school, one principal and one vice-principal are to be appointed. In how many ways can this be done ?

**A) 1260**

B) 1250

C) 1240

D) 1800

## LOGICAL REASONING

**Directions :** In each of the following questions, there are four words. Three of them are alike in a certain way, while one is different. Select the word which is different.

1.    **A) Usual**                    B) Usage                    C) Urine                    D) Ukase
2.    A) Apple                    B) Mango                    **C) Watermelon**            D) Guava
3.    A) Carrot                    B) Potato                    C) Ginger                    **D) Cabbage**
4.    A) Train                    B) Wheat                    **C) Driver**                    D) Proud
5.    A) Powder                    **B) Million**                    C) Letter                    D) Compel
6.    **A) Administrator**    B) Doctor                    C) Engineer                    D) Professor
7.    A) Snake                    **B) Turtle**                    C) Lizard                    D) Crocodile
8.    **A) Bromine**                    B) Mercury                    C) Copper                    D) Silver

**Directions :** In each of the following question, there is a certain relationship between two given words on the left hand side of :: and one word is given on the right hand side of ::. You have to find the fourth word from the given options having the same relationship with the third word.

1.    Doctor : Nurse : ? : Follower  
      A) Worker    **B) Leader**    C) Manager    D) Employer
2.    Newspaper : Editor : : Play : ?  
      A) Actor    B) Theatre    C) Writer    **D) Director**
3.    Clock : Time : : Thermometer : ?  
      **A) Temperature**    B) Heat    C) Energy    D) Radiation
4.    Sorrow : Death : : Happiness : ?

- A) Cry      **B) Birth**      C) Love      D) Dance
5. River : Dam :: Traffic : ?
- A) **Signal**      B) Vehicle      C) Motion      D) Lane
6. Growth : Death :: Increase : ?
- A) Ease      B) Tease      C) Lease      **D) Decrease**
7. Shoe : Cobbler :: Clothes : ?
- A) Merchant      **B) Darner**      C) Shopkeeper      D) Tailor
8. Culprit : Crime :: Judge : ?
- A) Court      B) Case      C) Law      **D) Verdict**

### **CODING & DECODING**

1. In a certain code language, 'po ki top ma' means Usha is playing cards. 'kop ja ki ma' means 'Asha is playing tennis', 'ki top sop ho' means 'they are playing football', and 'po sur kop' means 'cards and tennis'. Which word in that language means 'Asha'?

TOP      A) **JA**      B) MA      C) KOP      D)

2. If NOR is coded as 2-3-6, then how should REST be coded in the same code language ?

A) 6-19-6-7      B) 5-19-5-8      **C) 6-19-7-8**      D) 6-18-5-8

**Directions :**      In the following questions, a number series is given, out of which one number is missing. Which one number out of the four alternatives shall complete the series.

1.      5, 6, 9, 15, ?, 40

- A) 33            **B) 25**            C) 27            D) 21
2.    143, 99, 63, ?, 15, 3
- A) 49            **B) 36**            C) 24            D) 27
3.    14, 19, 29, 39, ?, 69
- A) 52            B) 49            C) 59            **D) 54**
4.    4, 23, 60, 121, ?
- A) 242            B) 241            C) **212**            D) 221
5.    10, 16, 12, 20, 14, ?
- A) 22            **B) 24**            C) 25            D) 28

**Directions :** In each of these questions, two statements (i) and (ii) are given followed by two conclusions I and II. Consider both the statements to be true even if they seem to be at variance from commonly known facts. Decide which of the given conclusion is / are definitely drawn from the given statements. Mark answer as :

- A)    If only II follows  
 B)    **B) If only I follows**  
 C)    If neither I nor II follows  
 D)    If both I and II follow

1.    Statements :

- (i)    If all players play to their full potential we will win the match.  
 (ii)   We have won the match.

Conclusions :

- I.     All players played to their full potential  
 II.    Some players did not play to their full potential.

- A) If only II follows  
 B) **B) If only I follows**  
 C) If neither I nor II follows

D) If both I and II follow

2. Statements :

- (i) Some businessmen are rich
- (ii) Soman is rich

Conclusions :

- I. Soman is a businessman
- II. Soman has a big farm.

- A) If only II follows
- B) B) If only I follows
- C) **If neither I nor II follows**
- D) If both I and II follow

**Directions:** In each of these questions, a statement is given, followed by two Conclusions. Mark your answer as :

- A) **If only I follows**
- B) **If only II follows**
- C) **If either I or II follows**
- D) **If neither I nor II follows**

1. Statement: Morning walks are good for health

Conclusion :

- I. All healthy people go for morning walks.
- II. Evening walks are harmful

- A) If only I follows
- B) If only II follows
- C) If either I or II follows
- D) **If neither I nor II follows**

2. Statement : The best way to escape from a problem is to solve it.

Conclusion :

- I. Your life will be dull if you don't face a problem.
- II. To escape from problems, you should always have some solutions with you.

- A) If only I follows
- B) If only II follows**
- C) If either I or II follows
- D) If neither I nor II follows

**Directions :** In each question below is given a statement followed by three courses of action numbered I, II and III. You have to assume everything in the statement to be true, then decide which of the three given suggested courses of action logically follows for pursuing.

1. Statement :

The army has been alerted in the district following floods triggered by incessant rains.

Courses of Action :

- i) Relief to flood affected people should be arranged.
- ii) Supply of food articles should be arranged.
- iii) Adequate medical facilities should be arranged.

- A) None of follows
- B) Only I follows
- C) only ii follows
- D) All follow**

2. Statement :

The world will have to feed more than 10 billion people in the next century of whom half will be in Asia and will eat rice as their staple.

Courses of Action :

- I. More funds should immediately be allocated for rice research to help ensure adequate supplies
- II) The people in Asia should be encouraged to change their food habit
- III) The rice should be grown in countries outside Asia to meet the demand

- A) Only I and II follow
- B) Only II and III follow
- C) All follow**
- D) Only I and III follow