

**GENERAL INTELLIGENCE**

1. If 'NEUROTIC' can be written as 'TICRONEU' then how can 'PSYCHOTIC' be written ?

- (1) TICCOHPSY
- (2) TICCHOPSY
- (3) TICCOHPSY
- (4) TICHCOPSY

2. Some letters are given below in the first line and numbers are given below them in the second line. Numbers are the codes for the alphabets and vice-versa. Choose the correct number-code for the given set of alphabets.

C W E A Z X J Y K L  
3 9 5 7 4 8 1 0 2 6  
J W X C L Z

- (1) 198364
- (2) 198264
- (3) 198354
- (4) 197354

3. From the given alternatives select the word which can be formed using the letters given in the word.

**PREPARATION**

- (1) PAMPER
- (2) REPEAT
- (3) PARTITION
- (4) PARROT

4. If 'GLOSSORY' is coded as 97533562 and 'GEOGRAPHY' = 915968402, then 'GEOLOGY' can be coded as

- (1) 915692
- (2) 9157592
- (3) 9057592
- (4) 9157591

5. From the given alternatives select the word which cannot be formed using the letters of the given word.

**INTERVENTION**

- (1) ENTER
- (2) INTENTION

**(3) INTERVENTION**

**(4) ENTERTAIN**

**Directions (6 - 7) :** In the following questions select the missing number from the given responses.

- 6. 81    36    25
- 49    100    36
- 9     64    16
- 139    200    ?
- (1) 107            (2) 77
- (3) 27             (4) 50

- 7. 2    24    48
- 3    9    27
- 4    ?    40
- (1) 10            (2) 16
- (3) 12            (4) 32

**Directions (8 - 9) :** In the following questions some equations are solved on the basis of a certain system. Find the correct answer for the unsolved equation on that basis.

- 8. If  $2463 = 36$  and  $5552 = 30$ , then  $6732 = ?$
- (1) 32            (2) 36
- (3) 34            (4) 39

- 9.  $4 \times 6 \times 9 = 694$ ,  $5 \times 3 \times 2 = 325$ ,  $7 \times 8 \times 2 = ?$
- (1) 729            (2) 872
- (3) 827            (4) 279

- 10. If - means  $\times$ ,  $\times$  means +, + means  $\div$  and  $\div$  means -, then  $40 \times 12 + 3 - 6 \div 60 = ?$
- (1) 44            (2) 16
- (3) 7.95            (4) 4

- 11. After starting from a point, A walks 3 km towards East, then turning to his left he moves 3 km. After this he again turns left and moves 3 km. In which direction is 'A' from his starting point ?
- (1) North            (2) East
- (3) West            (4) South

12. Ram goes 15 metres North then turns right and walks 20 metres, then again turns right and walks 10 metres, then again turns right and walks 20 metres. How far is he from his original position?

- (1) 5                    (2) 10
- (3) 15                  (4) 20

13. Select the correct combination of mathematical signs to replace \* signs and to balance the given equation.

- $5 * 6 * 5 * 8 * 14$
- (1)  $+ - \times =$             (2)  $\times \div + =$
- (3)  $\div + = -$             (4)  $+ \times - \div$

**Directions (14 - 15) :** In the following questions two statements are given followed by two conclusions I and II. You have to consider the statements/inferences to be true even if they seem to be at variance from commonly known facts. You are to decide which of the given conclusions, if any, follow from the given statements. Indicate your answer.

**14. Statements :**

- (i) For protection of Indian museums Central Government is responsible.
- (ii) Victoria Memorial Hall is national property.

**Conclusions :**

- (I) Indian museum is national property.
- (II) Historical property of nation is protected by the Central Government.
- (1) Only conclusion I follows.
- (2) Only conclusion II follows.
- (3) Both conclusions I and II follow.
- (4) None of the conclusions follows.

**15. Statements :**

- (i) Some chairs are made up of wood.  
 (ii) Some tables are made up of wood.

**Inferences :**

- (I) All wooden things are either chairs or tables.  
 (II) Some chairs are tables.  
 (1) Only inference I follows.  
 (2) Only inference II follows.  
 (3) Both inferences I and II follow.  
 (4) None of the inferences follows.

**Directions (16 - 22) :** In the following questions select the related words/letters/number from the given alternatives.

**16. Foot : ? :: Hand : Wrist**

- (1) Length (2) Shoe  
 (3) Ankle (4) Leg

**17. Chair : Wood :: ?**

- (1) Book : Print  
 (2) Mirror : Glass  
 (3) Plate : Food  
 (4) Purse : Money

**18. EDUCATION :**

- NOITACUDE ::  
 INTELLIGENCE : ?  
 (1) ECENGILLTEIN  
 (2) ECNGEILLTENI  
 (3) ECNEGILLETNI  
 (4) ECNEGILLTENI

**19. AZCX : BYDW :: HQJO : ?**

- (1) GREP (2) IPKM  
 (3) IPKN (4) GRJP

**20. 08 : 66 :: ? : 38**

- (1) 2 (2) 6  
 (3) 12 (4) 19

**21. 32 : 21 :: 35 : ?**

- (1) 51 (2) 53  
 (3) 32 (4) 26

**22. Cobbler : Leather :: Carpenter :**

- (1) Furniture (2) Wood  
 (3) Hammer (4) Chair

**Directions (23 - 26) :** In the following questions find the odd words/ letters/number pair from the given alternatives :

**23. (1) Flag : Flagship**

- (2) Court : Courtship  
 (3) War : Worship  
 (4) Friend : Friendship

**24. (1) BDFH (2) MOQS**

- (3) SUWY (4) TVZE

**25. (1) 8 - 15 (2) 25 - 36**

- (3) 49 - 64 (4) 81 - 100

**26. (1) Barter (2) Purchase**

- (3) Sale (4) Borrow

**27. Find out the set among the four sets which is like the given set.**

(13 : 20 : 27)

- (1) (3 : 11 : 18)  
 (2) (18 : 25 : 32)  
 (3) (18 : 27 : 72)  
 (4) (7 : 14 : 28)

**28. How many Ms occur in the following series such that it is preceded by W and followed by V ?**

XUVMRSTMWNVMWOP  
 MWUVMWACWMVHPN  
 VWMTUN

- (1) 3 (2) 2  
 (3) 1 (4) 5

**29. Arrange the following words as per order in the dictionary :**

1. Aqueous 2. Aquarium  
 3. Aquiline 4. Aquatic  
 (1) 4, 3, 2, 1 (2) 1, 2, 3, 4  
 (3) 2, 4, 1, 3 (4) 3, 1, 4, 2

**30. Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?**

mc\_m\_a\_ca\_ca\_c\_mc

- (1) a c m m m a  
 (2) c a m c a m  
 (3) a a a c m m  
 (4) a c m m m c

**31. Which one of the given responses would be a meaningful order of the following ?**

1. Twilight 2. Dawn  
 3. Noon 4. Night  
 (1) 2, 1, 3, 4 (2) 2, 3, 1, 4  
 (3) 1, 2, 3, 4 (4) 1, 3, 2, 4

**Directions (32 - 34) :** In the following questions, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

**32. 5, 6, 9, 14, 24, ?**

- (1) 28 (2) 30  
 (3) 31 (4) 29

**33. 4, 11, 30, 67, 128, ?**

- (1) 219 (2) 228  
 (3) 231 (4) 237

**34. AMN, BOP, CQR, ?**

- (1) BAS (2) DST  
 (3) EQP (4) FR5

**35. Lakshmi is elder than Meenu. Leela is elder than Meenu but younger than Lakshmi. Latha is younger than both Meenu and Hari but Hari is younger than Meenu. Who is the youngest?**

- (1) Lakshmi (2) Meenu  
 (3) Leela (4) Latha

**36. Nikhil is 8 years younger than his brother Rohan. How old will Rohan be when he is twice as old as Nikhil ?**

- (1) 4 (2) 6  
 (3) 8 (4) 16

**37. In a row of letters, a letter is 5th from left end and 12th from the right end. How many letters are there in a row ?**

- (1) 15 (2) 16  
 (3) 17 (4) 18

**38. Pointing to a lady Simon said, "She is the daughter of the only sister of my father". How is lady related to Simon ?**

- (1) Mother  
 (2) Aunt  
 (3) Sister  
 (4) Cousin sister

**39. If A = 1, ACT = 24, then FAT = ?**

- (1) 26 (2) 25  
 (3) 27 (4) 24

**40. If the day before yesterday was Wednesday, when will Sunday be ?**

- (1) Today  
 (2) Tomorrow  
 (3) Day after tomorrow  
 (4) Two days after tomorrow

**41. In 60 families 30% of the families own a car each. 50% of the remaining family own a motor cycle each. Balance of**

families own a bicycle each. How many families own bicycle ?

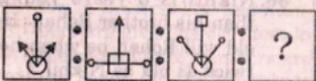
- (1) 12 (2) 21  
(3) 18 (4) 42

42. In a gathering seven members are sitting in a row. 'C' is sitting left to 'B' but on the right to 'D'. 'A' is sitting right to 'B'. 'F' is sitting right to 'E' but left to 'D'. 'H' is sitting left to 'E'. Find the person sitting in the middle.

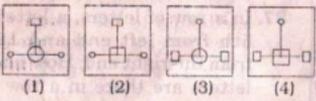
- (1) C (2) D  
(3) E (4) F

43. Select the related figure from the given alternatives :

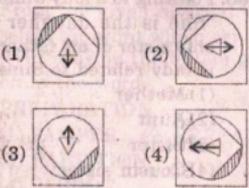
Question Figures :



Answer Figures :

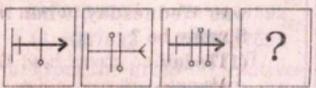


44. Find the odd figure from the given alternatives

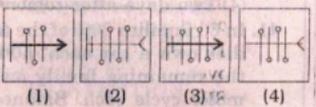


45. Choose the correct alternative from the given ones that will complete the series.

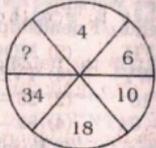
Question Figures :



Answer Figures :

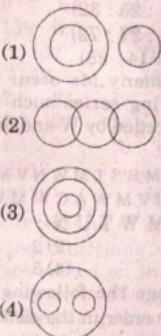


46. Select the missing number from the given responses.

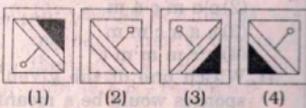


- (1) 2 (2) 52  
(3) 66 (4) 28

47. Identify the diagram that best represents the relationship among classes given below :  
Mammal, Dog and Bat

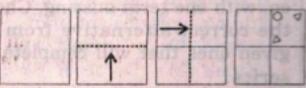


48. Which answer figure will complete the pattern in the question figure ?

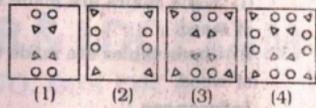


49. A piece of paper is folded and cut/punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened ?

Question Figures :



Answer Figures :

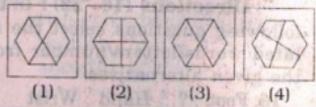


50. From the given answer figures, select the one in which the question figure is hidden embedded

Question Figure :



Answer Figures :



**ENGLISH LANGUAGE**

Directions (51-55) : In the following questions, a sentence has been given in Active/Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/ Active Voice.

51. The washerman will return the clothes in the evening.  
(1) The clothes will have to be returned by the washerman in the evening.  
(2) The clothes will be returned by the washerman in the evening.  
(3) The clothes will return by the washerman in the evening.  
(4) In the evening the clothes will have been returned by the washerman.
52. He picked up the telephone and dialled the police number.  
(1) The telephone was being picked up and the police number dialled.  
(2) The telephone was picked up and the police number dialled.  
(3) The telephone had been picked up and the police number dialled.

(4) The telephone has been picked up and the police number dialled.

53. An i-pod has been bought by Anubhav's mother.

- (1) Anubhav's mother was engaged in buying an i-pod.
- (2) Anubhav's mother had bought an i-pod.
- (3) Anubhav's mother has been buying an i-pod.
- (4) Anubhav's mother has bought an i-pod.

54. I took care of his dog.

- (1) His dog was taken care of by me.
- (2) His dog is taken care of by me.
- (3) His dog is taken care of by me.
- (4) His dog was taken care of by me.

55. Some girls were cleaning their dormitories.

- (1) The dormitories were cleaned by some girls.
- (2) The dormitories will have been cleaned by some girls.
- (3) The dormitories were being cleaned by some girls.
- (4) The dormitories are being cleaned by some girls.

**Directions (56-60) :** In the following questions, a sentence has been given in Direct/Indirect. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct.

56. He proposed to his companions that they should not miss that chance to see the last show.

- (1) He said to his companions, 'Let us not to miss the chance to see the last show.'
- (2) He said to his companions, 'Let us not miss that chance to see the last show.'
- (3) He said to his companions, 'We should not miss that chance to see the last show.'

(4) He said to his companions, 'Let us not miss the chance to see the last show.'

57. He swore in the name of God that he was ignorant of the matter.

- (1) He said, "I'm ignorant by God!"
- (2) He declared, "God knows I was ignorant of the matter."
- (3) He said, "By God! I'm ignorant of the matter."
- (4) He said he was ignorant of God.

58. "How much will you pay for this cow?" Jack asked the strange man.

- (1) Jack asked the strange man how much he would pay for that cow.
- (2) Jack asked the strange man how much would he pay for that cow.
- (3) Jack asked the strange man how much would he pay for this cow.
- (4) Jack asked the strange man how much he will pay for that cow.

59. The teacher said "Water boils at 100 °C."

- (1) The teacher told water boiled at 100 °C.
- (2) The teacher said that water boiled at 100 °C.
- (3) The teacher said that water boils at 100 °C.
- (4) The teacher told that water boiled at 100 °C.

60. "Bring me an elephant with one golden tusk." the witch told her minion.

- (1) The witch requested her minion to bring her an elephant with one golden tusk.
- (2) The witch told her minion to bring her the elephant with one golden tusk.
- (3) The witch ordered her minion to bring her an elephant with one golden tusk.

(4) The witch advised her minion to bring her an elephant with one golden tusk.

**Directions (61-66) :** In the following questions, the 1st and the last sentences/parts of the passage/sentence are numbered 1 and 6. The rest of the passage/sentence is split into four parts and named P, Q, R and S. These four parts are not given in their proper order. Read the passage/sentence and find out which of the four combinations is correct. Then find the correct answer.

61. 1. AIDS is an incurable disease which affects the resistance power of the body.

P. People succumb within two years and often die inspite of any treatment.

Q. AIDS is caused by a virus named HIV.

R. In such a condition the body is totally defenseless against all kinds of infection.

S. HIV destroys the white blood cells which fight the bacterial virus.

6. Thorough research is going on throughout the world for the prevention and cure of AIDS.

- (1) QPRS      (2) QSRP  
(3) RQSP      (4) SPQR

62. 1. Six robbers entered a Nationalised bank today at 9.50 a.m.

P. One group kept an eye on the customers.

Q. The assistant manager was forced to unlock the vault.

R. The other group held the Manager at gun point.

S. They cut off the telephone lines and deactivated the burglar alarm.

6. The whole operation was over in 20 minutes.

- (1) SPRQ      (2) PSRQ  
(3) PQSR      (4) QPRS

63. 1. One of the greatest advances  
 P. has been the invention of computers  
 Q. in modern technology  
 R. in industry, administration and education.  
 S. which are widely used  
 6. and in almost every sphere of human life.

- (1) PQRS (2) QPSR  
 (3) QPRS (4) SPQR

64. 1. The amount of oxygen  
 P. to meet the increasing demands  
 Q. due to indiscriminate deforestation  
 R. is being diminished day by day  
 S. which is released from the plant kingdom  
 6. of the human population.

- (1) RQSP (2) PSRQ  
 (3) RPQS (4) SRQP

65. 1. Books are the best company.  
 P. Through books we even see them as if they are really alive.  
 Q. They also give us the best society.  
 R. We hear what such great men said or did.  
 S. They help us in establishing contact with many great men.

- (1) PQSR (2) QRSP  
 (3) QSRP (4) SPQR

66. 1. A patient accusing a doctor  
 P. of malpractice will find it difficult  
 Q. without another doctor's testimony  
 R. to prove damage  
 S. or even file a case in the court  
 6. about proper medical procedures

- (1) RPQS (2) SQPR  
 (3) QRPS (4) PRSQ

**Directions (67-71) :** In the following passage some of the words have been left out. Read the passage carefully and choose the correct answer to each question out of the four alternatives and fill in the blanks.

In these days of cable television the radio has again become popular. As in the days before the (67) of television, people switch on their radios first thing in the morning. FM channels of every (68) can be heard broadcasting news and songs of every (69). More than anything else, people prefer to listen (70) which bring a refreshing change to the (71) routine of their everyday lives.

67. (1) advent  
 (2) appearance  
 (3) birth (4) genesis  
 68. (1) range (2) variety  
 (3) frequency (4) category  
 69. (1) state (2) language  
 (3) description (4) kind  
 70. (1) into the songs  
 (2) from the songs  
 (3) the songs  
 (4) to the songs  
 71. (1) packed  
 (2) monotonous  
 (3) exciting (4) light

**Directions (72-76) :** In the following questions, you have a brief passage with 5 questions following the passage. Read the passage carefully and choose the best answer to each question out of the four alternatives.

Bringing up the baby is now a science and fine art ! Most of the maternal grandparents would agree with this statement. My mother lost fifteen kilos in six months when my son was born and I gained that as much. Both ways it was because of the anxiety and shared responsibility. My colleagues welcome retirement when their daughter is ready to deliver or had just delivered. They most often befriend young experienced mothers and spend long counselling sessions with them collecting tips on how to tackle a crisis.

It is a funny sight to see grey haired women browse "Bringing up Baby" books at the local book store. One tends to think what they did with their own off springs. Ask them and pat comes the reply "it was so easy then. They grew up on their own". The mother may wear many hats at the same time. But to her or her parents, the mind boggling thing for the first few years is diaper changes, circadian rhythm and continual feeding. At home social life is taboo. Phone calls give cause for irritation, music becomes noise, friends and relatives become total strangers, the domestic help a spirit of mercy and the pediatrician a fairy godmother. Raising a kid is akin to a guerilla warfare and it you hear a woman say that her baby 'is beautiful and perfect and an angel all the time' then she is the grandma.

72. How did the mother and the daughter share the same anxiety ?  
 (1) Both were uneasy with the newborn  
 (2) Both feared babies  
 (3) Both were concerned about raising the baby  
 (4) Both were nervous about shared responsibility

73. Why do female colleagues welcome retirement ?

- (1) They get lot of free time.  
 (2) They become free to attend to household duties.  
 (3) They can be of help to their daughters and their offspring.  
 (4) They can cook good food for their children and grandchildren.

74. 'To wear many hats' means

- (1) Wear helmet  
 (2) Wear head gear  
 (3) Do hairstyling  
 (4) Undertake much work

75. Why is social life taboo at home ?

- (1) Babies are demanding.  
 (2) Babies do not like guests.  
 (3) Babies hate parties.  
 (4) Babies prefer to go out than stay at home.

76. What is difficult for maternal grandparents ?

- (1) Raising grandchildren
- (2) Feeding children
- (3) Giving birth to grandchildren
- (4) Bringing up babies

**Directions (77-81):** In the following questions, some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error. The number of that part is the answer. If a sentence is free from error, your answer is (4) i.e. No error.

- 77. Rohan had been playing (1/ for his club for fifteen years, (2/ when his elbow got injured. (3/ No error. (4)
- 78. None of (1/ the twins (2/ offered to help me. (3/ No error. (4)
- 79. My teacher (1/ did not object (2/ to me using the calculator. (3/ No error. (4)
- 80. The river (1/ has overflowed (2/ its banks. (3/ No error. (4)
- 81. The principal (1/ started his lecture (2/ with a pessimistic note. (3/ No error. (4)

**Directions (82-86) :** In the following questions, sentences are given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four as your answer.

- 82. The bird's voice was speaking \_\_\_\_\_ all lying under stars.
  - (1) to
  - (2) for
  - (3) at
  - (4) in
- 83. India will \_\_\_\_\_ arch rival Pakistan in the finals.
  - (1) takes after
  - (2) looks after
  - (3) taken back
  - (4) take on
- 84. The shepherd was looking after the \_\_\_\_\_ of sheep.
  - (1) crew
  - (2) gang
  - (3) fleet
  - (4) flock
- 85. Many of us believe that science is something modern \_\_\_\_\_ the truth is otherwise.

- (1) unless
  - (2) though
  - (3) if
  - (4) as if
86. \_\_\_\_\_ my food and my repose were salted.
- (1) None of
  - (2) All of
  - (3) Both
  - (4) Both of

**Directions (87-88) :** In the following questions, out of the four alternatives, choose the one which best expresses the meaning of the given word.

- 87. Staunch
  - (1) Loyal
  - (2) Benign
  - (3) Good
  - (4) Wise
- 88. Vivacious
  - (1) Lively
  - (2) Venomous
  - (3) Clear
  - (4) Superior

**Directions (89-90) :** In the following questions, choose the word opposite in meaning to the given word.

- 89. Spite
  - (1) Spleen
  - (2) Venom
  - (3) Spirit
  - (4) Affection
- 90. Modesty
  - (1) Honesty
  - (2) Vanity
  - (3) Originality
  - (4) Variety

**Directions (91-92) :** In the following questions, four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word.

- 91. (1) Sovenir (2) Souvenir (3) Suvenir (4) Suvenior
- 92. (1) Adalosent (2) Adolascant (3) Adolescent (4) Adaloscant

**Directions (93-95) :** In the following questions, four alternatives are given for the Idiom/Phrase printed in bold in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase as your answer.

- 93. Rajib washed his hands of the matter long ago.
  - (1) overcame the difficulties
  - (2) refused to accept responsibility for
  - (3) took the responsibility
  - (4) refused to change the decision
- 94. All the neighbours gave her the cold shoulder because she ill-treated her daughter-in-law.

- (1) showed intentional unfriendliness to her company
- (2) felt her shoulder was cold.
- (3) showed dislike for her company.
- (4) showed liking for her company.

95. If you want to solve the problem for ever you must take the bull by the horns.

- (1) pull the bull's horns.
- (2) face a difficulty or danger boldly.
- (3) run away from a difficulty or danger.
- (4) face a difficulty or danger confidently.

**Directions (96-98) :** In the following questions, out of the four alternatives choose the one which can be substituted for the given words/sentence.

- 96. A place where bees are kept
  - (1) Aviary
  - (2) Apiary
  - (3) Granary
  - (4) Dispensary
- 97. A hater of women
  - (1) Bigamist
  - (2) Misogynist
  - (3) Misanthrope
  - (4) Polygynist
- 98. A person who runs away from justice or the law
  - (1) Refugee
  - (2) Martyr
  - (3) Fugitive
  - (4) Recluse

**Directions (99-100) :** In the following questions, a part of the sentence is printed in bold. Below are given alternatives to the bold part at (1), (2), (3) which may improve the sentence. Choose the correct alternative. In case no improvement is needed, your answer is (4).

- 99. The expert was very interesting in this candidate.
  - (1) was having interest
  - (2) was very interested
  - (3) is having interest
  - (4) No improvement
- 100. The criminal was ordered to be hanged to death.
  - (1) hung to death
  - (2) hanged till death
  - (3) hung till death
  - (4) No improvement

**QUANTITATIVE APTITUDE**

101. If  $x + \frac{1}{y} = 1$  and  $y + \frac{1}{z} = 1$ ,

then  $z + \frac{1}{x}$  is equal to

- (1) 2                      (2)  $\frac{1}{2}$   
 (3) 1                      (4) 0

102. If  $4x - 5z = 16$  and  $xz = 12$ , the value of  $64x^3 - 125z^3$  is equal to

- (1) 15610                  (2) 15616  
 (3) 15618                  (4) 15620

103. If  $x + y + z = 15$ ,  $xy + yz + zx = 75$  then  $\frac{x+4y+z}{3z}$  is equal to

- (1) 1                      (2) 0  
 (3) 2                      (4) -1

104. If the graphs of  $3x - 5y = -8$  and  $3x + 5y = 32$  intersect at the point  $(p, q)$ , then the value of  $(p - q)$  is

- (1) 3                      (2) 2  
 (3) 1                      (4) 0

105. If  $x = \sqrt{3} + \sqrt{2}$  and  $y = \sqrt{3} - \sqrt{2}$  then the value of  $8xy(x^2 + y^2)$  is

- (1)  $16\sqrt{6}$                   (2) 32  
 (3)  $48\sqrt{2}$                   (4) 80

106. 50 persons can do a work in 12 days, working 6 hours/day. 60 persons can do the same-work in 8 days, working  $x$  hours per day. The value of  $x$  is

- (1) 15                      (2)  $7\frac{1}{2}$

- (3)  $5\frac{2}{3}$                       (4) 5

107. The side BC of the triangle ABC is produced to D. If  $\angle ACD = 112^\circ$  and  $\angle ABC = \frac{3}{4} \angle BAC$ , then the  $\angle ABC$  is equal to

- (1)  $68^\circ$                       (2)  $58^\circ$   
 (3)  $48^\circ$                       (4)  $38^\circ$

108. In  $\triangle ABC$ , X and Y are points on sides AB and BC respectively such that  $XY \parallel AC$  and XY divides triangular region ABC into two parts

equal in area. Then  $\frac{AX}{AB}$  is equal to

- (1)  $\frac{2+\sqrt{2}}{2}$                   (2)  $\frac{\sqrt{2}+3}{2}$

- (3)  $\frac{2-\sqrt{2}}{2}$                   (4)  $\frac{3-\sqrt{2}}{2}$

109. A circle is touching the side BC of  $\triangle ABC$  at P and is also touching AB and AC produced at Q and R respectively. If  $AQ = 6$  cm, then perimeter of  $\triangle ABC$  is

- (1) 6 cm                      (2) 10 cm  
 (3) 12 cm                      (4) 18 cm

110. In  $\triangle ABC$ ,  $\angle A = 80^\circ$ . If BD and CD are internal bisectors of  $\angle B$  and  $\angle C$  respectively, then the  $\angle BDC$  is,

- (1)  $100^\circ$                       (2)  $110^\circ$   
 (3)  $120^\circ$                       (4)  $130^\circ$

111. The area of an isosceles trapezium is  $176 \text{ cm}^2$  and the height is  $\frac{2}{11}$  th of the sum of

its parallel sides. If the ratio of the length of the parallel sides be 4 : 7, then the length of a diagonal is

- (1)  $\sqrt{168}$  cm  
 (2)  $2\sqrt{147}$  cm  
 (3)  $\sqrt{137}$  cm  
 (4)  $2\sqrt{137}$  cm

112. The medians AD, BE and CF of a triangle ABC are of lengths 18 cm, 24 cm and 30 cm respectively. The area in  $\text{cm}^2$  of the triangle is

- (1) 96                      (2) 192  
 (3) 288                      (4) 374

113. A solid iron sphere of diameter 6 cm is melted and made to a hollow cylindrical pipe of external diameter 10 cm and of length 4 cm. The width of the sheet of pipe is

- (1) 1 cm                      (2) 2 cm  
 (3) 3 cm                      (4) 4 cm

114. If the volumes of a sphere and a cylinder of equal radius are same, the ratio of the radius and height of the cylinder will be

- (1) 4 : 3                      (2) 3 : 2  
 (3) 3 : 4                      (4) 2 : 3

115. The length of two parallel chords of a circle are 6 cm and 8 cm. If the smaller chord is at a distance of 4 cm from the centre, the distance of the other chord from the centre is

- (1) 5 cm                      (2) 6 cm  
 (3) 4 cm                      (4) 3 cm

116. If the difference between an exterior angle of a regular polygon of  $n$  sides and an exterior angle of another regular polygon of  $(n + 1)$  sides is equal to  $5^\circ$ , then the value of  $n$  is

- (1) 5                      (2) 6  
 (3) 7                      (4) 8

117. If the base of a right prism of 20 cm high is a rhombus whose diagonal are 14 cm and 18 cm, then the volume in  $\text{cm}^3$  of the prism will be

- (1) 2520                      (2) 2250  
 (3) 3520                      (4) 1250

118. The value of  $\sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \dots + \sin^2 87^\circ + \sin^2 89^\circ$  is

- (1) 22                      (2)  $22\frac{1}{2}$   
 (3) 23                      (4)  $22\frac{1}{4}$

119. The minimum value of  $\cos^2 \theta + \sec^2 \theta$  is

- (1) 0                      (2) 1  
 (3) 2                      (4) 3

120. If  $\cos \theta + \sec \theta = 2$  ( $0^\circ \leq \theta \leq 90^\circ$ ) then the value of  $\cos 10\theta + \sec 11\theta$  is

- (1) 0                      (2) 1  
 (3) 2                      (4) -1

121. If the base of a right pyramid is a triangle of sides 21cm,

20 cm, 13cm and its altitude is 30 cm, then its volume (in  $\text{cm}^3$ ) will be

- (1) 430 (2) 630  
(3) 1068 (4) 1260

122. The value of  $\frac{1}{2} + \left(\frac{7}{8} \times \frac{4}{5}\right) -$

$$\left(\frac{2}{3} + \frac{4}{5}\right) + \frac{3}{4} \text{ of } \frac{2}{5} \text{ is}$$

- (1)  $\frac{1}{3}$  (2)  $\frac{2}{3}$   
(3)  $\frac{3}{4}$  (4)  $\frac{3}{5}$

123. Let  $x = 5 + \frac{1}{\sqrt{5}} +$

$$\frac{1}{5 + \sqrt{5}} + \frac{3}{\sqrt{5} - 5}. \text{ The value of } x \text{ is}$$

- (1)  $5 + \sqrt{5}$  (2) 0  
(3)  $\frac{9}{2}$  (4) 5

124. The total number of prime factors in

$$(25)^{10} \times (24)^{20} \times (26)^{25} \text{ is}$$

- (1) 1000 (2) 120  
(3) 150 (4) 140

125. The value of

$$\frac{0.625 \times 0.0729 \times 28.9}{0.0081 \times 0.025 \times 1.7} \text{ is}$$

- (1) 3825 (2) 3845  
(3) 3925 (4) 3945

126. In a division sum, the divisor is 10 times the quotient and 5 times the remainder. If the remainder is 40, then the dividend is

- (1) 240 (2) 440  
(3) 4040 (4) 4000

127. Two numbers are respectively 25% and 40% less than a third number. What per cent of the first is the second?

- (1) 60 (2) 70  
(3) 40 (4) 80

128. A reduction of 20% in the price of sugar enables Mr. Bhadra to buy an extra 5 kg of it for ₹ 320. The original rate of sugar is

- (1) ₹ 12 per kg  
(2) ₹ 15 per kg  
(3) ₹ 16 per kg  
(4) ₹ 20 per kg

129. In two blends of mixed tea, the ratios of Darjeeling and Assam tea are 4 : 7 and 2 : 5. The ratio in which these two blends should be mixed to get the ratio of Darjeeling and Assam tea in the new mixture as 6 : 13 is

- (1) 2 : 7 (2) 5 : 13  
(3) 4 : 13 (4) 22 : 35

130. The value of  $\sqrt{8 - 8 \times \frac{2\frac{1}{5} - 1\frac{2}{7}}{2 - \frac{1}{6} - \frac{1}{6}}}$

- is equal to  
(1) 0 (2) 4  
(3) 3 (4) 2

131.  $\sqrt{\frac{0.081 \times 0.324 \times 4.624}{1.5625 \times 0.0289 \times 72.9 \times 64}}$  is equal to

- (1) 24 (2) 2.4  
(3) 0.024 (4) 2.04

132. In a particular type of alloy the ratio of lead to tin is 5 : 6. The amount of lead should be added to 12.1 kg of this material to make the ratio 1 : 1 is

- (1) 1.1 kg (2) 1 kg  
(3) 0.9 kg (4) 1.5 kg

133. If the average of  $m$  numbers is  $n^2$  and that of  $n$  numbers is  $m^2$ , then the average of  $(m + n)$  numbers is

- (1)  $\frac{m}{n}$  (2)  $mn$   
(3)  $m - n$  (4)  $m + n$

134. The simple interest at  $x\%$  for  $x$  years will be ₹  $x$  on a sum of

- (1) ₹  $x$  (2) ₹  $100x$   
(3) ₹  $\frac{100}{x}$  (4) ₹  $\frac{100}{x^2}$

135. If  $2x + 3y : 3x + 5y = 18 : 29$ ,

then  $\frac{x}{y}$  is equal to

- (1)  $\frac{3}{4}$  (2)  $\frac{4}{3}$   
(3)  $\frac{2}{3}$  (4)  $\frac{5}{6}$

136. The cost price of 18 articles is equal to the selling price of 15 articles. The gain per cent is

- (1) 25% (2) 20%  
(3) 18% (4) 15%

137. Successive discounts of 50% and 50% is equivalent to

- (1) 100% (2) 75%  
(3) 50% (4) 25%

138. A, B, C enter into a partnership with shares in the ratio

$$\frac{7}{2} : \frac{4}{3} : \frac{6}{5}. \text{ After 4 months, A}$$

increases his share by 50%. If the total profit at the end of the year was ₹ 43,200, then the B's share in the profit is

- (1) ₹ 4,200 (2) ₹ 4,800  
(3) ₹ 7,200 (4) ₹ 8,000

139. Two trains, of same length, are running in parallel tracks in opposite directions with speed 65 km/hour and 85 km/hour respectively. They cross each other in 6 seconds. The length of each train is

- (1) 100 metre (2) 115 metre  
(3) 125 metre (4) 150 metre

140. A shopkeeper sells an article at a loss of  $12\frac{1}{2}\%$ . Had he

sold the article for ₹ 51.80 more, he would have earned a profit of 6%. The cost price of the article is

- (1) 280 (2) 580  
(3) 370 (4) 450

141. From the top of a tree of height 120m the angle of depression of two boats in the same line with the foot of the tree and on the same side of it are  $45^\circ$  and  $60^\circ$  respectively. The distance between the boats is

(1)  $40(3 - \sqrt{3})$  metre

(2)  $40(3\sqrt{3} - 1)$  metre

(3)  $120(\sqrt{3} - 1)$  metre

(4)  $120(3 - \sqrt{3})$  metre

142.  $(a + b - 2c)^3 + (b + c - 2a)^3 + (c + a - 2b)^3$  is equal to

(1)  $(a + b - 2c)(b + c - 2a)(c + a - 2b)$

(2)  $2(a + b - 2c)(b + c - 2a)(c + a - 2b)$

(3)  $3(a + b - 2c)(b + c - 2a)(c + a - 2b)$

(4)  $-3(a + b - 2c)(b + c - 2a)(c + a - 2b)$

143. The sum of two numbers is 528, and their HCF is 33. How many pairs of such numbers can be ?

(1) 1 (2) 2

(3) 3 (4) 4

144. A, B and C are three taps connected to a tank. A and B together can fill the tank in 6 hours, B and C together can fill it in 10 hours and A and

C together can fill it in  $7\frac{1}{2}$

hours. In how much time will C alone fill the tank ?

(1) 10 hours (2) 12 hours

(3) 20 hours (4) 30 hours

145. If  $\sec\theta - \operatorname{cosec}\theta = 0$ , then the value of  $\tan\theta + \cot\theta$  is

(1) 0 (2) 1

(3) -1 (4) 2

146. A and B walk from one corner of a rectangular field to the corner just diagonally opposite. A walks along the diagonal, and B walks along the sides, reaching the finishing point together. If the ratio of the length and breadth of the field is 3 : 4, the ratio of their speeds is

(1) 3 : 4 (2) 4 : 3

(3) 4 : 5 (4) 5 : 7

**Directions (147 - 148) :**

Study the following table and answer the questions.

Years	Percentage of candidates qualified under discipline					Total number of candidates qualified
	Arts	Science	Commerce	Agriculture	Engineering	
2006	24	40	19	09	08	780
2007	15	42	18	13	12	650
2008	20	45	20	08	07	500
2009	15	45	16	14	10	620
2010	19	35	15	19	12	900
2011	18	42	14	12	14	850

147. The increase in the number of candidates qualified under Engineering discipline from 2009 to 2010 was

(1) 28

(2) 30

(3) 46

(4) 49

148. The number of candidates qualified in Science discipline was the lowest in the year

(1) 2006

(2) 2008

(3) 2009

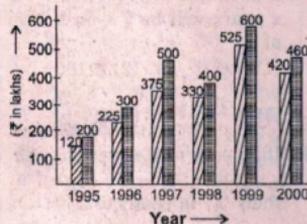
(4) 2010

**Directions (149 - 150) :**

Study the following graph and answer the questions given below :

■ Amount (₹ in lakhs) invested in raw material

■ Value (₹ in lakhs) of sales of finished goods



149. The value of sales of finished goods in 1999 was approximately what per cent of the amount invested in raw materials in the year 1997, 1998 and 1999 ?

(1) 33% (2) 37%

(3) 49% (4) 52%

150. The maximum difference between the amount invested in raw materials and the value of sales of finished goods in that year was in the year

(1) 1995 (2) 1996

(3) 1997 (4) 1998

**GENERAL AWARENESS**

151. The photoelectric effect is described as the ejection of electrons from the surface of a metal when

(1) It is heated.

(2) It is placed in strong electric field.

(3) Electrons of suitable velocity impinge on it.

(4) Light of suitable wavelength falls on it.

152. X-rays are \_\_\_\_\_ waves.

(1) longitudinal

(2) transverse

(3) electromagnetic

(4) elastic

153. The shape of a rain drop is spherical due to

(1) Viscosity

(2) Surface tension

(3) Elasticity

(4) Gravitation

154. The penetrating powers of  $\alpha$ ,  $\beta$  and  $\gamma$  -radiations, in decreasing order, are

(1)  $\alpha$ ,  $\beta$ ,  $\gamma$

(2)  $\gamma$ ,  $\beta$ ,  $\alpha$

(3)  $\beta$ ,  $\alpha$ ,  $\gamma$

(4)  $\gamma$ ,  $\alpha$ ,  $\beta$

155. In MS-Excel, which of the following function is used to find the highest value within the list ?

(1) COUNT (2) PROPER

(3) MAX (4) SUM

- 156.** Daltonism (Protanopia) is the form of colour blindness in which the patient cannot see  
 (1) Green colour  
 (2) Red colour  
 (3) Blue colour  
 (4) All the above colours
- 157.** A hybrid computer is the one having the combined properties of  
 (1) Super and micro computers  
 (2) Mini and micro computers  
 (3) Analog and digital computers  
 (4) Super and mini computers
- 158.** Tritium is an isotope of  
 (1) Oxygen (2) Hydrogen  
 (3) Phosphorous  
 (4) Nitrogen
- 159.** The three basic components of an atom are  
 (1) protons, neutrons and ions  
 (2) protons, neutrons and electrons  
 (3) protium, deuterium and tritium  
 (4) protons, neutrinos and ions
- 160.** Alcohol obtained in the saponification process is  
 (1) Ethyl alcohol  
 (2) Methyl alcohol  
 (3) Wood spirit  
 (4) Glycerol
- 161.** The product of equivalent weight and valency of an element is equal to  
 (1) Vapour density  
 (2) Specific heat  
 (3) Atomic weight  
 (4) Molecular weight
- 162.** Chlorofluoro carbons are widely used in  
 (1) Micro ovens  
 (2) Solar heaters  
 (3) Washing machines  
 (4) Refrigerators
- 163.** While the computer executes a program, the program is held in  
 (1) RAM (2) ROM  
 (3) Hard Disk  
 (4) Floppy Disk
- 164.** The main pollutant responsible for Bhopal Gas Tragedy is  
 (1) Methyl isocyanate  
 (2) Bromine  
 (3) Chlorofluoro carbon  
 (4) Chlorine
- 165.** Presently the Union Minister of Minority Affairs is  
 (1) Dr. Farooq Abdullah  
 (2) Ghulam Nabi Azad  
 (3) K. Rahman Khan  
 (4) Salman Khurshid
- 166.** Who won the Women French Open Title in 2013?  
 (1) Maria Sharapova  
 (2) Victoria Azarenka  
 (3) Serena Williams  
 (4) Venus Williams
- 167.** Which of the following places of Sikh religious heritage is not in India ?  
 (1) Nankana Sahib  
 (2) Nanded  
 (3) Paonta Sahib  
 (4) Keshgarh Sahib
- 168.** The headquarters of which one of the following organisations is not in Geneva ?  
 (1) Food and Agricultural Organisation  
 (2) World Meteorological Organisation  
 (3) World Health Organisation  
 (4) World Trade Organisation
- 169.** In which Eco-system Grassland is included ?  
 (1) Marine  
 (2) Fresh water  
 (3) Terrestrial  
 (4) Artificial
- 170.** Which one of the following European Union countries has its own currency and has not switched over to Euro ?  
 (1) France  
 (2) Germany  
 (3) Sweden  
 (4) Spain
- 171.** The pioneer of modern Hindi Literature is  
 (1) Srinivas Das  
 (2) Munshi Premchand  
 (3) Devaki Nandan Khatri  
 (4) Bharatendu Harishchandra
- 172.** Which country has been admitted in July 2013 as the 28th member of the European Union ?  
 (1) Bulgaria (2) Croatia  
 (3) Cyprus (4) Romania
- 173.** Which one of the following is wrongly paired ?  
**Sports Ground**  
 (1) Athletics Track  
 (2) Base Ball Court  
 (3) Golf Course  
 (4) Wrestling Ring
- 174.** Which American President was a famous film/T.V. star before he became the President ?  
 (1) J.F. Kennedy  
 (2) Gerald R. Ford  
 (3) Richard Nixon  
 (4) Ronald Regan
- 175.** Which one of the following museums in India and its location is wrongly matched ?  
 (1) National Railway Museum — New Delhi  
 (2) The Calico Museum of Textiles — Mumbai  
 (3) Salar Jung Museum — Hyderabad  
 (4) Napier Museum — Thiruvananthapuram
- 176.** Value of a commodity expressed in terms of money is called  
 (1) Price (2) Demand  
 (3) Utility  
 (4) Money value
- 177.** Selling cost is an element of  
 (1) Monopolistic Competition  
 (2) Perfect Competition  
 (3) Pure Competition  
 (4) Monopoly
- 178.** The opportunity cost of a factor of production is  
 (1) what it earns in its present use.  
 (2) what it can earn in the long period.  
 (3) what it can earn in some other use.  
 (4) the cost of production.

179. The demand for a product which is wanted for itself is known as  
 (1) Derived Demand  
 (2) Industry Demand  
 (3) Company Demand  
 (4) Direct or Autonomous Demand
180. The Parliamentary form of Government in India has been adopted from the  
 (1) American Constitution  
 (2) Russian Constitution  
 (3) British Constitution  
 (4) Swiss Constitution
181. Which of these are essentials of democratic system ?  
 (1) Free and fair elections  
 (2) Equality of opportunity  
 (3) Protection of rights  
 (4) All of the above
182. "Value added" is equal to  
 (1) Output minus input  
 (2) Manufacturing profit  
 (3) Gross profit  
 (4) Capital gain
183. Which Article of the Indian Constitution stipulates that Directive Principles of State Policy shall not be enforceable by any Court ?  
 (1) Article 31  
 (2) Article 38  
 (3) Article 37  
 (4) Article 39
184. Which one of the following languages is not specified in Schedule 8 of the Indian Constitution ?  
 (1) Sanskrit (2) Sindhi  
 (3) English (4) Nepali
185. Which ancient Indian kingdom is wrongly matched below with its capital ?  
 (1) Maurya - Pataliputra  
 (2) Pandya - Madurai  
 (3) Pallava - Vellore  
 (4) Kakatiya - Warangal
186. Which were the two dynasties, which ruled immediately before and after the Khiljis ?

- (1) Slave and Lodi  
 (2) Saiyyad and Lodi  
 (3) Slave and Tughlaq  
 (4) Tughlaq and Lodi
187. Who among the following did not participate in the 1857 Revolt against the British ?  
 (1) Tantia Tope  
 (2) Tipu Sultan  
 (3) Rani Lakshmi Bai  
 (4) Nana Saheb
188. Which Amendment Act is referred as mini constitution ?  
 (1) 7th Constitutional Amendment Act, 1956  
 (2) 24th Constitutional Amendment Act, 1971  
 (3) 42nd Constitutional Amendment Act, 1976  
 (4) 44th Constitutional Amendment Act, 1978
189. Arrange the following historical events chronologically choosing the correct response :  
 I. French Revolution  
 II. Glorious Revolution  
 III. American War of Independence  
 IV. Russian Revolution  
 (1) I II III IV (2) II III I IV  
 (3) II I IV III (4) III II I IV
190. The Southernmost Point of India is  
 (1) Cape Comorin  
 (2) Point Calimere  
 (3) Indira Point  
 (4) Port Blair
191. Which of the following soils is most ideal for paddy cultivation ?  
 (1) Laterite soil  
 (2) Red soil  
 (3) Alluvial soil  
 (4) Black soil
192. The red colour of red soil is due to the rusting of  
 (1) Nitrogen (2) Humus  
 (3) Iron (4) Copper
193. Which one of the following rivers crosses the equator two times ?  
 (1) Congo River  
 (2) Amazon River  
 (3) Niger River  
 (4) Nile River

194. Who was the founder of the "Prarthana Samaj" ?  
 (1) Ramakrishna Paramahansa  
 (2) Swami Vivekananda  
 (3) Athmaram Panduranga  
 (4) Dayananda Saraswathi
195. The type of root formed in Betel vine is  
 (1) Stilt Root  
 (2) Clinging Root  
 (3) Climbing Root  
 (4) Prop Root
196. Chromosomes are made up of  
 (1) DNA  
 (2) Protein  
 (3) DNA and Protein  
 (4) RNA
197. Jersey bull used for cross breeding is an exotic variety from  
 (1) England (2) France  
 (3) Holland  
 (4) Switzerland
198. Which of the following symbiotic associations forms a lichen ?  
 (1) An algae and a fungus  
 (2) An algae and a bryophyte  
 (3) A bacterium and a fungus  
 (4) A bacterium and a gymnosperm
199. Which one of the following crop combination is not adopted in mixed cropping in India?  
 (1) Wheat and Mustard  
 (2) Wheat and Chick Pea  
 (3) Rice and Ground nut  
 (4) Ground nut and Sun flower
200. Match correctly the following countries and their capitals by choosing the correct response :
- | Country       | Capital            |
|---------------|--------------------|
| (1) Argentina | (i) Bogota         |
| (2) Colombia  | (ii) Harare        |
| (3) Egypt     | (iii) Buenos Aires |
| (4) Zimbabwe  | (iv) Cairo         |
- (a) (b) (c) (d)  
 (1) (ii) (iii) (iv) (i)  
 (2) (iii) (iv) (i) (ii)  
 (3) (iv) (i) (ii) (iii)  
 (4) (iii) (i) (iv) (ii)