

STAFF SELECTION COMMISSION

Combined Higher Secondary Level (10 + 2) Examination, 2013

Southern Region

Held on 10-11-13 Second Sitting (After Noon)

Paper Code: 043SN5

PART I : GENERAL INTELLIGENCE

Directions : In questions no. 1 to 7, select the related letters/word/number from the given alternatives.

1. 85 : 40 :: 77 : ?
(A) 48 (B) 49
(C) 50 (D) 14
2. KNQT : LORU :: ADGJ : ?
(A) FHLO (B) DGEF
(C) MPVW (D) BEHK
3. DRIVEN : NEVIRD :: BEGUM : ?
(A) BGMUE (B) EBGMU
(C) MUGEB (D) MEUBG
4. Smell : Flower :: Taste : ?
(A) Salt (B) Food
(C) Sweet (D) Water
5. Introvert : Extrovert :: ?
(A) Extreme : Interim
(B) Against : Favour
(C) Action : Law
(D) Angle : Tangent
6. Smoke : Pollution :: War : ?
(A) Victory (B) Treaty
(C) Destruction (D) Peace
7. 12 : 30 :: 18 : ?
(A) 42 (B) 44
(C) 45 (D) 36

Directions : In questions no. 8 to 11, find the odd letters/words/number pair from the given alternatives.

8. (A) 29 - 45 (B) 48 - 68
(C) 71 - 87 (D) 5 - 21
9. (A) ADEG (B) EHIK
(C) LNOQ (D) TWXZ
10. (A) Up : Down
(B) Across : Along
(C) Small : Large
(D) Day : Night
11. (A) Hill (B) Plateau
(C) Plane (D) Mountain

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

Given set is (6 : 12 : 18)

- (A) (12 : 24 : 36) (B) (6 : 20 : 26)
(C) (30 : 36 : 42) (D) (4 : 8 : 14)

13. Which one of the given responses would be a meaningful order of the following in ascending order ?

1. Sending 2. Encoding
3. Receiving 4. Decoding
(A) 4, 2, 1, 3 (B) 1, 2, 3, 4
(C) 2, 1, 3, 4 (D) 2, 4, 3, 1

14. Arrange the following words as per order in the English dictionary :

1. Important 2. Impart
3. Improvise 4. Improve
(A) 2, 1, 4, 3 (B) 3, 4, 1, 2
(C) 2, 1, 3, 4 (D) 1, 2, 3, 4

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

bc_bca_cab_ab_a_ca

- (A) cabac (B) abccb
(C) cabca (D) abcab

16. In the following letter series, how many B C N occur in such a way, that C is in the middle and B and N are on any one side ?

BCMXNCXNBXNCBNCB

YBCXNBCNABONMZCB

- (A) 2 (B) 5
(C) 3 (D) 4

- Directions :** In questions no. 17 to 19, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

17. 7, 8, 11, 16, 23, ?

- (A) 32 (B) 37
(C) 40 (D) 31

18. 3, 9, 6, 36, 30, ?

- (A) 800 (B) 950
(C) 400 (D) 900

19. DKY, FJW, HIU, JHS, ?

- (A) LGQ (B) KGR
(C) KFR (D) LFQ

20. A man said to a woman, "The only son of your brother, is the brother of my wife." How is that woman related to the wife of that man ?

- (A) Sister (B) Mother
(C) Grandmother (D) Aunt

21. If B = 2, BAG = 10, then BOX = ?

- (A) 39 (B) 41
(C) 52 (D) 36

22. If DISC is coded as 8749 and ACHE is coded as 3950, then HEAD is coded as

- (A) 5308 (B) 3508
(C) 3805 (D) 5038

23. If January 1st is a Friday, what is the first day of the month of March, in a leap year ?

- (A) Wednesday (B) Thursday
(C) Friday (D) Tuesday

24. Barun is taller than Sanjay. Bipul is taller than Barun. Krishna is also not as tall as Bipul, but is taller than Barun. Who is the tallest ?

- (A) Bipul (B) Krishna
(C) Sanjay (D) Barun

25. Rajan is younger than his father by 20 years. 5 years ago his father was 3 times elder than him. Find the present age of his father.

- (A) 30 years (B) 35 years
(C) 36 years (D) 25 years

26. Sunita is the 11th from either end of a row of girls. How many girls are there in that row ?

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

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

PUNISHMENT

- (A) PEST (B) PUSH
(C) NAME (D) MINT

28. In a certain code 'CALANDER' is written as 'CLANAEDR'. How is 'CIRCULAR' written in that code ?

- (A) CRIUCALR (B) CRIUCLKA
(C) CRIARLCU (D) CRIARLRA

29. Some capital letters are given below in the first line and numbers are assigned to each of them in the second line. The numbers are the codes for the letters and vice-versa.

M O E A S J T Z
2 5 7 6 2 9 4 0

Choose the correct number code for the given second letters.

EAST

- (A) 7623 (B) 7624
(C) 7625 (D) 7620

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

COMPANIONSHIP

- (A) OPIUM (B) OPINION
(C) NATION (D) OPEN

Directions : In questions no. 31 and 32, select the missing number from the given responses.

31. 24 25 50
24 20 10
4 9 3
12 5 ?

- (A) 15 (B) 20
(C) 5 (D) 10

32. 63 7 9
30 5 6
20 4 ?

- (A) 3 (B) 5
(C) 2 (D) 8

Directions : In questions no. 33 and 34, some equations are solved on the basis of a certain system. On that basis, find out the correct answer for the unsolved equation.

33. If $526 = 9$
and $834 = 9$, then
 $716 = ?$

- (A) 15 (B) 9
(C) 12 (D) 20

34. $3 \times 9 \times 7 = 379$, $5 \times 4 \times 8 = 584$,
 $1 \times 2 \times 3 = ?$

- (A) 231 (B) 213
(C) 132 (D) 123

35. If '+' means 'minus', '-' means 'multiply',
'÷' means 'plus' and 'x' means 'divide', then

$$10 \times 5 \div 3 - 2 + 3 = ?$$

- (A) $\frac{53}{3}$ (B) 21
(C) 36 (D) 5

36. One morning Meena started walking towards the Sun. After walking a while she turned towards her left and again towards her left. After walking a while, she turned left. In which direction is she facing now?

- (A) East (B) West
(C) South (D) North

37. Vijay starts walking straight towards East. After walking 75 metres he turns to the left and walks 25 metres straight. Again he turns to the left and walks a distance of 40 metres straight. Again he turns to the left and walks a distance of 25 metres. How far is he from the starting point?

- (A) 115 metres (B) 50 metres
(C) 35 metres (D) 140 metres

38. Select the correct combination of mathematical signs to replace '*' signs and to balance the given equation.

$$24 * 34 * 2 * 5 * 12$$

- (A) = + + - (B) = ÷ - +
(C) + + = x (D) + ÷ x =

39. Which of the conclusions can be drawn from the given statements?

Statements :

All the students in my class are intelligent.
Kaushik is not intelligent.

- (A) Non-intelligent are not students.
(B) Kaushik is not a student of my class.
(C) All other than Kaushik are intelligent.
(D) Some students are not intelligent.

40. At a birthday party, 5 friends are sitting in a row. 'M' is to the left of 'O' and to the right of 'P'. 'S' is sitting to the right of 'T', but to the left of 'P'. Who is sitting in the middle?

- (A) O (B) P
(C) S (D) M

41. One statement is given, followed by two conclusions I and II. You have to consider the statement to be true, even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follow from the given statement. Indicate your answer.

Statement :

Medals are awards.

Conclusions :

- I. All awards are not medals.
II. All medals received are called awards.

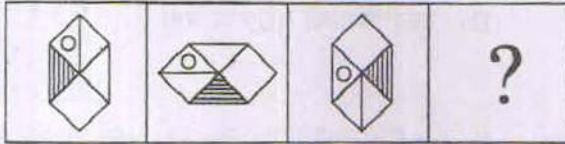
- (A) Only conclusion II follows
(B) Both conclusions I and II follow
(C) Neither conclusion I nor II follows
(D) Only conclusion I follows

42. A machine which cuts a ribbon into pieces of 10 metres takes 6 seconds to make a single cut. How long will it take to completely cut into pieces a ribbon 3 km long ?

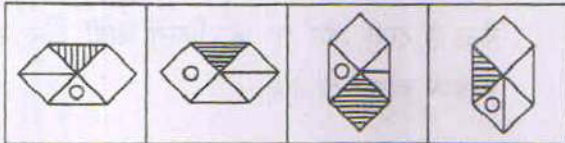
- (A) 180 seconds (B) 1794 seconds
(C) 1800 seconds (D) 174 seconds

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

Question figures :



Answer figures :



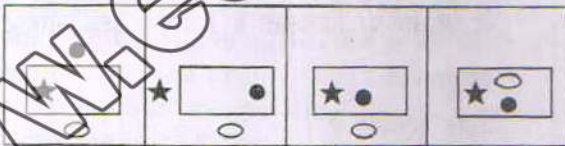
- (A) (B) (C) (D)

44. Select the related figure from the given alternatives.

Question figures :

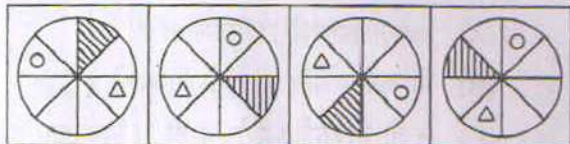


Answer figures :



- (A) (B) (C) (D)

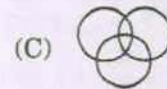
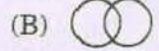
45. Select the figure which is different from the rest three.



- (A) (B) (C) (D)

46. Identify the diagram that best represents relationship among the classes given below

TEA, COFFEE, DRINK



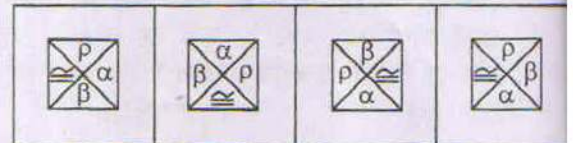
- (A) (B) (C) (D)

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

Question figure :

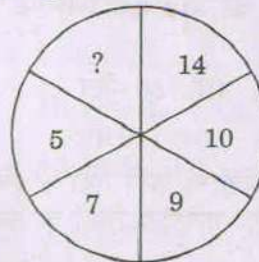


Answer figures :



- (A) (B) (C) (D)

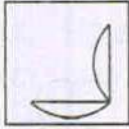
48. Select the missing number from the given responses.



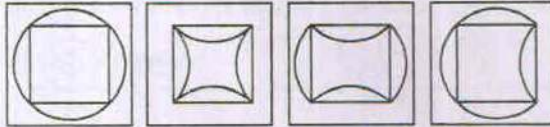
- (A) 3 (B) 4
(C) 18 (D) 2

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

Question figure :



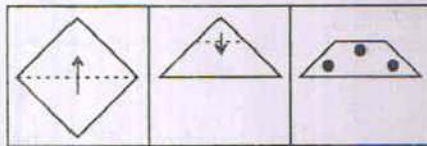
Answer figures :



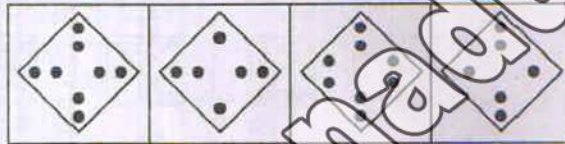
(A) (B) (C) (D)

50. 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 :



(A) (B) (C) (D)

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43. If A denotes \times , D denotes $+$, K denotes \div and N denotes $-$, what is

$$20 D 15 A 6 N 13 A 4 = ?$$

- (A) 158 (B) 328
(C) 468 (D) 58

44. Rama, Sheela and Mary dance well. Rekha, Leena and Rama sing well. Mary, Rama and Sheela draw well. Amongst these, who is good at all the three ?

- (A) Sheela (B) Leena
(C) Rama (D) Mary

45. In a row of books, Mathematics text-book is 8th from left and 13th from right end. How many books are there in the row ?

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

46. Find the least number which is a perfect square and contains 108 as its factors

- (A) 324 (B) 108
(C) 36 (D) 420

47. In the following series, how many 2, 1, 3 occur in such a way so that 1 is in the middle and both 2 and 3 are on any one side ?

2, 1, 3, 7, 2, 1, 9, 8, 2, 2, 3, 9, 3, 1, 2, 6, 5, 3, 2, 1, 7, 2, 3, 1, 2.

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

48. If in each number, all the three digits are arranged in ascending order, which of the following will be the lowest number ?

- (A) 284 (B) 573
(C) 961 (D) 369

49. Find the wrong number in the given number series.

2, 5, 10, 17, 26, 37, 50, 64

- (A) 26 (B) 37
(C) 64 (D) 17

50. If 'three' is five, 'four' is four and 'five' is four, what is 'seven' ?

- (A) Four (B) Five
(C) Seven (D) Three

PART II : ENGLISH LANGUAGE

Directions : In questions no. 51 to 55, some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the oval (●) corresponding to the appropriate letter (A, B, C). If a sentence is free from error, blacken the oval corresponding to (D) in the Answer Sheet.

51. The police is investigating / for the recent happening / in the area. / No error.
(A) (B) (C) (D)
52. The redevelopment project is aimed / not just providing good houses to shanty dwellers /
(A) (B)
but also developing infrastructure around the major Mumbai localities. / No error.
(C) (D)
53. Unless he apologizes / he should not be / allowed to stay with us. / No error.
(A) (B) (C) (D)
54. I met the gentleman / today morning on my way / to the market. / No error.
(A) (B) (C) (D)
55. She regards / negotiating prices with customers / as her special expertise. / No error.
(A) (B) (C) (D)

Directions : In questions no. 56 to 60, 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 and blacken it by blackening the appropriate oval (●) in the Answer Sheet.

56. We heard that the Richards _____ their house recently.
(A) have shifted (B) will shift
(C) are shifting (D) had shifted
57. Internet cafe owners fear that a police crackdown may cause _____ damage to their business.
(A) reparable (B) irreparable
(C) eternal (D) untold
58. The more he remonstrated _____ the referee the worse the situation became.
(A) to (B) with
(C) for (D) at
59. Our teacher encouraged _____ setting the poem to music.
(A) him (B) he
(C) he's (D) his
60. He would not have been successful in the project but _____ my help.
(A) with (B) for
(C) off (D) of

Directions : In questions no. 61 and 62, out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

61. Thrifty
(A) Compassionate (B) Greedy
(C) Extravagant (D) Economical
62. Admonition
(A) Warning (B) Admission
(C) Hindrance (D) Reason

Directions : In questions no. 63 and 64, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

63. Stability
(A) Inconsistency (B) Opposition
(C) Carelessness (D) Disparity
64. Dynamic
(A) Stout (B) Static
(C) Stupid (D) Strange

Directions : In questions no. 65 and 66, four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word and mark your answer in the Answer Sheet.

65. (A) Colleague (B) Coleague
(C) Coligue (D) Coleague
66. (A) Intarmitently (B) Intermitantly
(C) Intarmittantly (D) Intermittently

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Directions : In questions no. 67 to 69, four alternatives are given for the Idiom/Phrase underlined in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

67. After getting a severe scolding from his mother, Raghu got down to business.
(A) became businesslike
(B) began to work seriously
(C) joined his father's business
(D) started a business
68. The young servant goes about with the old master.
(A) goes around
(B) tries to know more about
(C) adjusts well
(D) moves around
69. The mother was right in giving a piece of her mind to the daughter.
(A) speaking cheerfully
(B) speaking sadly
(C) speaking sharply
(D) speaking kindly

Directions : In questions no. 70 to 72, out of the four alternatives choose the one which can be substituted for the given words/sentence.

70. A person who lives by himself.
(A) Recluse (B) Extrovert
(C) Prophet (D) Monk
71. A medicine to nullify the effect of poison.
(A) Antigen (B) Antidote
(C) Anticlimax (D) Antibody
72. An assembly of worshippers.
(A) Conflagration (B) Configuration
(C) Confrontation (D) Congregation

Directions : In questions no. 73 and 74, a part of the sentence is underlined. Below are given alternatives to the underlined part at (A), (B), (C) which may improve the sentence. Choose the correct alternative. In case no improvement is needed your answer is (D). Mark your answer in the Answer Sheet.

73. If a man remains as careful as he is in the beginning, there will be no failure.
(A) he at the beginning
(B) he was in the beginning
(C) he in the beginning
(D) No improvement
74. Complete the formalities of registration of the workshop before you enter the hall.
(A) formalities of registration for
(B) formalities to register for
(C) formalities to registering for
(D) No improvement

Directions : In questions no. 75 to 79, 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 and mark your answer in the Answer Sheet.

75. I shall have written the letter.
(A) The letter has been written by me.
(B) The letter is being written by me.
(C) The letter will have been written by me.
(D) The letter will be written by me.
76. We must endure what we cannot cure.
(A) What cannot be cured must be endured.
(B) What cannot be cured must be endured.
(C) What could be cured must be endured.
(D) What we cure must be endured.

77. A fresh batch of eggs was collected by the farmer's wife.
(A) The farmer's wife collected a fresh batch of eggs.
(B) The farmer's wife had collected a fresh batch of eggs.
(C) The farmer's wife will be collecting a fresh batch of eggs.
(D) The farmer's wife was collecting a fresh batch of eggs.

78. Then her face was bowed.
(A) Her face was bowed by then.
(B) Then she bowed her face.
(C) Then her face has been bowed.
(D) Then she was being bowed her face.

79. The walls had not been decorated by us.
(A) We had not been decorating the walls.
(B) We have not decorated the walls.
(C) We had not decorated the walls.
(D) We have not been decorating the walls.

Directions : In questions no. 80 to 84, 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 and mark your answer in the Answer Sheet.

80. Father said to me, "You are idling away your time."
(A) Father told me that you are idling away your time.
(B) Father told me that you were idling away your time.
(C) Father told me that I was idling away my time.
(D) Father told me that I am idling away my time.

81. The captain said to his men, "Fall into line."
(A) The captain told his men that they should fall into line.
(B) The captain said to his men that they can fall into line.
(C) The captain commanded his men to fall into line.
(D) The captain warned his men to fall into line.
82. The priest said, "May God pardon this sinner!"
(A) The priest said that God might pardon the sinner.
(B) The priest prayed that God would pardon this sinner.
(C) The priest prayed that God might pardon that sinner.
(D) The priest prayed if God will pardon that sinner.
83. Ashmita advised me to go and see a doctor.
(A) Ashmita told me, "Go and see the doctor."
(B) "Shouldn't you go and see a doctor?" asked Ashmita.
(C) "You should go and see a doctor," said Ashmita.
(D) Ashmita asked me, "Will you go and see a doctor?"
84. Suresh asked Prasad whether he had watched the cricket match on television the previous night.
(A) Suresh said to Prasad, "Did you watch the cricket match on television last night?"
(B) Suresh said to Prasad, "Did you watched the cricket match on television last night?"
(C) Suresh asked Prasad, "Did you watch the cricket match on television previous night?"
(D) Suresh asked Prasad, "Have you watched the cricket match on television last night?"

Directions : In questions no. 85 to 90, the 1st and the last sentences of the passage/parts of the 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 and indicate it by blackening the appropriate oval [●] in the Answer Sheet.

85. 1. Lata was caught in a traffic jam.
P. Would she really have to miss the interview?
Q. But the vehicles on either side looked as though they would be there forever.
R. The reason was that she was due to appear for an interview in less than half an hour.
S. She was fretting : she could not afford to be late.
6. Or, worse — would she arrive late and create a bad first impression?
(A) SRPQ (B) RSQP
(C) RSPQ (D) SRQP
86. 1. The first illness I read about was cholera.
P. I sat for a while, too frightened to move.
Q. I came to malaria.
R. As I read the list of symptoms, it seemed to me that perhaps I had cholera myself.
S. Then, in a kind of dream, I started to turn the pages of the book again.
6. Yes, there was no doubt about it — I had malaria too.
(A) QSPR (B) RPSQ
(C) PQSR (D) SPQR

87. 1. After the tornado had hit the coastal areas,
P. my house was gone,
Q. I became a pauper overnight
R. my fields were completely destroyed,
S. my livestock was lost and
6. though my neighbour's house remained untouched.
(A) SQPR (B) QRPS
(C) PRSQ (D) RPQS

88. 1. The lion used to be very widely distributed in Africa and Asia.
P. There are special forest zones set aside for wild-life in various countries.
Q. Indiscriminate killing has caused the number to fall.
R. Today they are a relatively rare species.
S. If the species survives at all, it will be only in national parks.
6. No hunting is permitted in such reserved areas.
(A) QSPR (B) RQSP
(C) SRPQ (D) RSPQ

89. 1. The enzymes in washing powder
P. making them able to survive
Q. come from bacteria
R. to live in hot springs
S. that have evolved
6. the rigours of the hot cycle.
(A) QSPR (B) PQSR
(C) QSRP (D) SQRP

90. 1. When you are debating whether to
P. but also helps you stay
Q. take your evening walk or skip it
R. not only keeps your weight in check
S. remember that taking a long walk
6. calm and relaxed.
(A) QRSP (B) RPQS
(C) QSRP (D) SRPQ

Directions : In questions no. 91 to 95, 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.

When I go into a stranger's library I wander round the bookshelves. This is to know the type of person he is and I feel that I know the 91 to his mind. A house without books is 92 house, no matter how rich the carpets are. These only tell you whether he 94 a lot of money but the books tell you whether he has a mind as well. It is not a 95 of money that we do not buy books.

91. (A) run (B) look
(C) wander (D) wonder
92. (A) mystery (B) key
(C) solution (D) secret
93. (A) bleak (B) unlucky
(C) bad (D) characterless
94. (A) has (B) have
(C) has had (D) had
95. (A) question (B) issue
(C) cause (D) reason

Directions : In questions no. 96 to 100, 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 and mark it by blackening the appropriate oval (●) in the Answer Sheet.

As the rulers of the planet, humans like to think that it is the large creatures who will emerge victorious from the struggle for survival. However, nature teaches us the opposite : it is often the smallest species which are the toughest and most adaptable. A perfect example is the hummingbird, which is found in the Americas. One species of hummingbird known as the bee hummingbird ranks as the world's smallest and lightest bird and it is barely visible when it is in flight.

Hummingbirds are the only birds that can fly backwards. They feed mainly on the nectar of flowers, a liquid that is rich in energy. Nectar is an ideal food source, for hummingbirds need an incredible amount of energy to sustain their body metabolism. A hummingbird's wings flap at a rate of about 80 times per second and its tiny heart beats more than 1000 times per minute. This is why they must consume relatively large quantities of food. In the course of a day, a hummingbird consumes about half its body weight in nectar.

96. The word 'incredible' in the passage means
(A) inexhaustible (B) unbelievable
(C) phenomenal (D) tremendous
97. Nature has made man realize the fact that
(A) the smallest creatures are the toughest and most adaptable
(B) humans who rule the planet are the most powerful beings on Earth
(C) the largest and the smallest species are equally tough and strong
(D) the large creatures emerge victorious from the struggle for survival
98. Which of the following statements about the bee hummingbird is true ?
(A) It escapes our sight when it is in flight.
(B) It could fly high beyond the clouds.
(C) It cannot be seen when it is in flight.
(D) It is obviously visible when it flies.
99. Hummingbirds need a lot of energy in order to
(A) flap their wings and fly backwards
(B) sustain a steady rhythm of heart-beat
(C) win in the struggle for survival
(D) maintain their body metabolism
100. The hummingbirds are exclusive in the sense that
(A) their pulse rate is more than 1000 per minute
(B) they consume half their body weight every day
(C) they can fly backwards
(D) they subsist only on nectar

PART III : QUANTITATIVE APTITUDE

101. Let $\sqrt[3]{a} = \sqrt[3]{26} + \sqrt[3]{7} + \sqrt[3]{63}$. Then

- (A) $a = 729$
- (B) $a < 729$ but $a > 216$
- (C) $a < 216$
- (D) $a > 729$

102. The number of prime factors in

$$6^{333} \times 7^{222} \times 8^{111}$$

is

- (A) 1211
- (B) 1221
- (C) 1222
- (D) 1111

103. The greatest among

$1.5, 1.05, 1.0\dot{5}, 1.\dot{5}$ is

- (A) $1.\dot{5}$
- (B) 1.05
- (C) $1.0\dot{5}$
- (D) 1.5

104.

$$\frac{4\frac{1}{7} - 2\frac{1}{4}}{3\frac{1}{2} + 1\frac{1}{7}} \div \frac{1}{2 + \frac{1}{2 + \frac{1}{5 + \frac{1}{9}}}}$$

- (A) 2
- (B) 1
- (C) 4
- (D) 3

105. If 120 is 20% of a number, then 120% of that number will be

- (A) 120
- (B) 360
- (C) 720
- (D) 20

106. In a division sum, the divisor is 3 times the quotient and 6 times the remainder. If the remainder is 2, then the dividend is

- (A) 28
- (B) 50
- (C) 48
- (D) 36

107. $\frac{1}{7} + \left(999\frac{692}{693}\right) \times 99$ is equal to

- (A) 99900
- (B) 1
- (C) 99000
- (D) 99800

108. The value of $\frac{\sqrt{72} \times \sqrt{363} \times \sqrt{175}}{\sqrt{32} \times \sqrt{147} \times \sqrt{252}}$ is

- (A) $\frac{55}{28}$
- (B) $\frac{55}{42}$
- (C) $\frac{45}{56}$
- (D) $\frac{45}{28}$

109. Zinc and copper are in the ratio 5 : 3 in 400 gm of an alloy. How much of copper (in grams) should be added to make the ratio 5 : 4 ?

- (A) 200
- (B) 50
- (C) 66
- (D) 72

110. The average age of A and B is 20 years. If A is to be replaced by C, the average would be 19 years. The average age of C and A is 21 years. The ages of A, B and C in order (in years) are

- (A) 22, 20, 18
- (B) 18, 22, 20
- (C) 18, 20, 22
- (D) 22, 18, 20

111. A reduction of 10% in the price of a commodity enables a person to buy 25 kg more for ₹ 225. The original price of the commodity per kg was

- (A) ₹ 1.50
- (B) ₹ 2
- (C) ₹ 1
- (D) ₹ 2.50

112. One type of liquid contains 20% water and the second type of liquid contains 35% of water. A glass is filled with 10 parts of first liquid and 4 parts of second liquid. The water in the new mixture in the glass is

- (A) $24\frac{2}{7}\%$
- (B) 37%
- (C) 46%
- (D) $12\frac{1}{7}\%$

113. If $x : y = 3 : 4$ and $y : z = 3 : 4$, then

$\frac{x+y+z}{3z}$ is equal to

- (A) $\frac{37}{48}$
- (B) $\frac{13}{27}$
- (C) $\frac{1}{2}$
- (D) $\frac{73}{84}$

114. Mohan sold his watch at 10% loss. If he had sold it for ₹ 45 more, he would have made 5% profit. The selling price (in ₹) of the watch was
 (A) 270 (B) 300
 (C) 900 (D) 110
115. A vendor loses the selling price of 4 oranges on selling 36 oranges. His loss percent is
 (A) $11\frac{1}{2}\%$ (B) $12\frac{1}{2}\%$
 (C) 9% (D) 10%
116. Successive discounts of 30% and 20% is equivalent to a single discount of
 (A) 10% (B) 50%
 (C) 40% (D) 44%
117. At the beginning of a partnership business, the capital of B was $\frac{3}{2}$ times that of A. After 8 months B withdrew $\frac{1}{2}$ of his capital and after 10 months A withdrew $\frac{1}{4}$ of his capital. At the end of the year, if the profit incurred is ₹ 53,000, find the amount received by A.
 (A) ₹ 23,000 (B) ₹ 30,800
 (C) ₹ 32,000 (D) ₹ 30,000
118. If x, y, z are three sums of money such that y is the simple interest on x and z is the simple interest on y for the same time and at the same rate of interest, then we have
 (A) $y^2 = zx$ (B) $z^2 = xy$
 (C) $xyz = 1$ (D) $x^2 = yz$
119. A and B can together finish a work in 30 days. They worked together for 20 days and then B left. After another 20 days, A finished the remaining work. The number of days in which B alone can finish the work is
 (A) 60 (B) 50
 (C) 48 (D) 54
120. If $\frac{xy}{x+y} = a$, $\frac{xz}{x+z} = b$ and $\frac{yz}{y+z} = c$, where a, b, c are all non-zero numbers, then x equals to
 (A) $\frac{abc}{ab+bc+ac}$
 (B) $\frac{2abc}{ab+bc-ac}$
 (C) $\frac{2abc}{ab+ac-bc}$
 (D) $\frac{2abc}{ac+bc-ab}$
121. If $6x - 5y = 13$, $7x + 2y = 23$, then $11x + 18y =$
 (A) 15 (B) -15
 (C) 51 (D) 33
122. If $x + y + z = 13$ and $x^2 + y^2 + z^2 = 69$, then the value of $xy + z(x + y)$ is equal to
 (A) 60 (B) 70
 (C) 40 (D) 50
123. Two trains, of same length, are running in parallel tracks in the same direction with speed 60 km/hour and 90 km/hour respectively. The latter completely crosses the former in 30 seconds. The length of each train (in metres) is
 (A) 115 (B) 125
 (C) 150 (D) 100

124. ABC is an isosceles triangle with $AB = AC$. The side BA is produced to D such that $AB = AD$. If $\angle ABC = 30^\circ$, then $\angle BCD$ is equal to
(A) 60° (B) 45°
(C) 90° (D) 30°
125. ABCD is a trapezium in which $AB \parallel DC$ and $AB = 2 CD$. The diagonals AC and BD meet at O. The ratio of areas of triangles AOB and COD is
(A) 1 : 4 (B) 1 : 2
(C) $1 : \sqrt{2}$ (D) 4 : 1
126. PQ is a chord of length 8 cm, of a circle with centre O and of radius 5 cm. The tangents at P and Q intersect at a point T. The length of TP is
(A) $\frac{15}{4}$ cm (B) $\frac{20}{3}$ cm
(C) $\frac{21}{4}$ cm (D) $\frac{10}{3}$ cm
127. The area of the triangle formed by the graphs of $3x + 4y = 12$, x-axis and y-axis (in sq. units) is
(A) 8 (B) 4
(C) 12 (D) 6
128. If $x = \sqrt{2} + \sqrt{3}$, then the value of $x^3 + \frac{1}{x^3}$ is
(A) 4 (B) 8
(C) 9 (D) 2
129. The side QR of an equilateral triangle PQR is produced to the point S in such a way that $QR = RS$ and P is joined to S. Then the measure of $\angle PSR$ is
(A) 45° (B) 30°
(C) 15° (D) 60°
130. Three solid iron cubes of edges 4 cm, 5 cm and 6 cm are melted together to make a new cube. 62 cm^3 of the melted material is lost due to improper handling. The area (in cm^2) of the whole surface of the newly formed cube is
(A) 216 (B) 294
(C) 343 (D) 125
131. If the ratio of volumes of two cones is 2 : 3 and the ratio of the radii of their bases is 1 : 2, then the ratio of their heights will be
(A) 8 : 3 (B) 3 : 4
(C) 4 : 3 (D) 3 : 8
132. A right pyramid stands on a base 16 cm square and its height is 15 cm. The area (in cm^2) of its slant surface is
(A) 444 (B) 514
(C) 544 (D) 344
133. If a chord of a circle is equal to the radius of the circle, then the angle subtended by the chord at a point on the minor arc is
(A) 30° (B) 150°
(C) 60° (D) 120°
134. The length of each side of a rhombus is equal to the length of the side of a square whose diagonal is $40\sqrt{2}$ cm. If the lengths of the diagonals of the rhombus are in the ratio 3 : 4, then its area (in cm^2) is
(A) 1536 (B) 1550
(C) 1600 (D) 1535
135. The altitude drawn to the base of an isosceles triangle is 8 cm and its perimeter is 64 cm. The area (in cm^2) of the triangle is
(A) 120 (B) 240
(C) 180 (D) 360

136. The product $\cos 1^\circ \cos 2^\circ \cos 3^\circ \cos 4^\circ \dots \cos 100^\circ$ is equal to
 (A) 0 (B) -1
 (C) $\frac{1}{4}$ (D) 1
137. The greatest value of $\sin^4 \theta + \cos^4 \theta$ is
 (A) 1 (B) 2
 (C) 3 (D) $\frac{1}{2}$
138. If $3 \sin \theta + 5 \cos \theta = 5$, then $5 \sin \theta - 3 \cos \theta$ is equal to
 (A) ± 2 (B) ± 3
 (C) ± 5 (D) 1
139. If $\sin \theta + \sin^2 \theta = 1$, then the value of $\cos^2 \theta + \cos^4 \theta$ is
 (A) 1 (B) 2
 (C) 4 (D) 0
140. From two points on the ground and lying on a straight line through the foot of a pillar, the two angles of elevation of the top of the pillar are complementary to each other. If the distances of the two points from the foot of the pillar are 9 metres and 16 metres and the two points lie on the same side of the pillar, then the height of the pillar is
 (A) 12 m (B) 5 m
 (C) 10 m (D) 7 m
141. The sum of interior angles of a regular polygon is 1440° . The number of sides of the polygon is
 (A) 8 (B) 10
 (C) 12 (D) 6
142. The base of a right prism is a right-angled triangle whose sides are 5 cm, 12 cm, 13 cm. If the area of the total surface of the prism is 360 cm^2 , then its height (in cm) is
 (A) 11 (B) 10
 (C) 12 (D) 9

143. LCM of two numbers is 2079 and their HCF is 27. If one of the numbers is 189, the other number is
 (A) 216 (B) 297
 (C) 584 (D) 189

144. Three pipes A, B and C can fill a tank in 6 hours. After working together for 2 hours, C is closed and A and B fill the tank in 8 hours. The time (in hours) in which the tank can be filled by pipe C alone is
 (A) 9 (B) 10
 (C) 12 (D) 8

145. The radii of two circles are 10 cm and 24 cm. The radius of a circle whose area is the sum of the areas of these two circles is
 (A) 26 cm (B) 36 cm
 (C) 17 cm (D) 34 cm

146. The value of $(x^{b+c})^{b-c} (x^{c+a})^{c-a} (x^{a+b})^{a-b}$, ($x \neq 0$) is
 (A) 0 (B) 1
 (C) 2 (D) -1

Directions : The table shows the percentage of total population of a city in different age groups. Study the table and answer questions no. 147 and 148.

Age group	Percent
Up to 15	20.00
16 - 25	18.25
26 - 35	16.75
36 - 45	16.25
46 - 55	15.00
56 - 65	12.50
66 and above	1.25

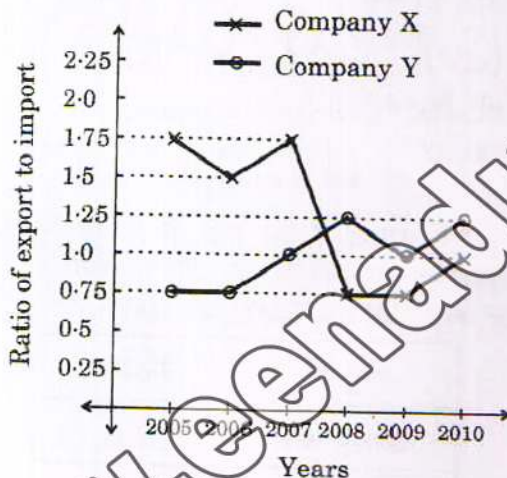
147. If the difference between the number of people in the age groups 46 – 55 and 16 – 25 is 0.975 million, then the total population (in millions) of the city is

- (A) 25 (B) 27
(C) 30 (D) 22

148. If there are 22 million people below 36 years, then the number of people (in millions) in the age group 56 – 65 is

- (A) 3.5 (B) 5
(C) 5.5 (D) 3

Directions : Study the following graph and answer questions no. 149 and 150.



149. In 2005, the exports of company X were double that of company Y in that year. If the imports of company X during the year were ₹ 180 crores, what was the amount (in crore ₹) of imports of company Y during the year?

- (A) 282 (B) 212
(C) 210 (D) 315

150. If the imports of company X in 2007 were increased by 40%, what would be the ratio of exports to the increased imports?

- (A) 0.75 (B) 1.25
(C) 1.75 (D) 0.25

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147. $2000\pi \text{ cm}^3$ of water flows out of a bucket by dropping 30 metallic spheres into it. The radius of the spheres is

- (A) $\sqrt{50}$ cm (B) $(50)^{1/3}$ cm
(C) $5\sqrt{3}$ cm (D) 50 cm

148. A rope makes 140 rounds of the circumference of a cylinder whose radius of the base is 14 cm. The number of times it can go round a cylinder with radius 20 cm is

- (A) 89 (B) 78
(C) 87 (D) 98

149. A wheel makes 1000 revolutions in covering a distance of 88 km. The diameter (in m) of the wheel is (Use $\pi = \frac{22}{7}$)

- (A) 40 (B) 28
(C) 14 (D) 24

150. If the diameter of the cross-section of a wire is decreased by 5%, how much percent will the length be increased so that the volume remains almost the same?

- (A) 20% (B) 20.8%
(C) 10.8% (D) 10%

PART IV : GENERAL AWARENESS

151. Who said "Man is a social animal" ?
(A) Plato (B) Aristotle
(C) Rousseau (D) Laski
152. "Marginal Cost" equals
(A) the change in total cost divided by the change in quantity
(B) total cost minus total benefit for the last unit produced
(C) total cost divided by total benefit for the last unit produced
(D) total cost divided by quantity
153. Extreme forms of markets are
(A) Perfect competition; Monopolistic competition
(B) Perfect competition; Oligopoly
(C) Oligopoly; Monopoly
(D) Perfect competition; Monopoly
154. A supply function expresses the relationship between
(A) price and consumption
(B) price and output
(C) price and selling cost
(D) price and demand
155. Goods which are meant either for consumption or for investment are called
(A) Intermediate goods
(B) Final goods
(C) Giffen goods
(D) Inferior goods
156. Variation in Cash Reserve Ratio and Open Market Operations are instruments of
(A) Monetary policy
(B) Budgetary policy
(C) Trade policy
(D) Fiscal policy
157. Which of the following subjects does not figure in the Concurrent List of the Constitution ?
(A) Trade unions
(B) Stock Exchanges and futures markets
(C) Protection of wild animals and birds
(D) Forests
158. The President of India has the discretionary power to
(A) declare Financial Emergency
(B) impose President's Rule in a state
(C) appoint the Prime Minister
(D) appoint the Chief Election Commissioner
159. The script of the Indus Valley Civilization is
(A) Tamil (B) Kharosthi
(C) Undeciphered (D) Brahmi
160. Which one of the following literary pieces was written by Krishna Devaraya ?
(A) *Katha Saristhaga*
(B) *Kaviraja Marga*
(C) *Ushaparinayam*
(D) *Anukta Malyada*
161. Name three important forms of Satyagraha.
(A) Revolution, plebiscite and boycott
(B) Non-cooperation, civil disobedience and boycott
(C) Boycott, civil disobedience and rebellion
(D) Non-cooperation, revolution and referendum
162. Which Article empowers the President to impose Financial Emergency ?
(A) Article 360 (B) Article 356
(C) Article 364 (D) Article 352

163. Who among the following played a prominent role during the "Reign of Terror" in France ?
(A) Montesquieu (B) Voltaire
(C) Marat (D) Robespierre
164. The highest waterfall of India is in the state of
(A) Karnataka
(B) Andhra Pradesh
(C) Assam
(D) Maharashtra
165. Soil which is prone to intensive leaching due to rain is called
(A) Red (B) Laterite
(C) Black (D) Alluvial
166. The formation of 'Mushroom rock' in desert region is an example of
(A) Erosion
(B) Deflation
(C) Attrition
(D) Abrasion
167. The "Grand Canyon" is on the river
(A) Mississippi (B) Colorado
(C) Columbia (D) Ohio
168. When the East India Company was formed, the Mughal emperor in India was
(A) Akbar
(B) Jahangir
(C) Humayun
(D) Aurangzeb
169. Which one of the following events did *not* take place during the Viceroyalty of Lord Curzon ?
(A) Partition of Bengal
(B) Establishment of the Department of Archaeology
(C) Second Delhi Durbar
(D) Formation of Indian National Congress
170. Which gland in the human body regulates the secretion of hormones from the pituitary gland ?
(A) Hypothalamus gland
(B) Thymus gland
(C) Thyroid gland
(D) Adrenal gland
171. The old and worn-out red blood corpuscles are destroyed in
(A) Spleen
(B) Liver
(C) Stomach
(D) Bone marrow
172. Subtropical high pressure belts are otherwise called
(A) Roaring forties
(B) Furious fifties
(C) Screeching sixties
(D) Horse latitudes
173. Self pollination will lead to
(A) outbreeding
(B) inbreeding
(C) rare breeding
(D) overbreeding
174. Hydroponics is a method of culture of plants without using
(A) soil
(B) water
(C) light
(D) sand
175. The non-green heterotrophic plants of plant kingdom are
(A) fungi (B) mosses
(C) ferns (D) algae

176. Centigrade and Fahrenheit temperatures are the same at
(A) -40° (B) 32°
(C) 40° (D) -273°
177. The dimensional formula for universal gravitational constant is
(A) $M^{-1}L^3T^{-2}$ (B) $M^{-1}L^3T^2$
(C) ML^2T^{-2} (D) M^{-2}
178. In any spreadsheet, the address of the first cell is
(A) A1 (B) 0A
(C) 1A (D) A0
179. Match List I with List II and choose the correct response :
- | | |
|----------------------------|-------------------|
| <i>List I</i> | <i>List II</i> |
| a. Vitamin B ₁ | 1. Pyridoxine |
| b. Vitamin B ₂ | 2. Cyanocobalamin |
| c. Vitamin B ₆ | 3. Thiamine |
| d. Vitamin B ₁₂ | 4. Riboflavin |
- (A) a-4, b-1, c-2, d-3
(B) a-1, b-2, c-3, d-4
(C) a-2, b-3, c-4, d-1
(D) a-3, b-4, c-1, d-2
180. Ohm's law is valid in case of
(A) insulator
(B) semiconductor
(C) conductor
(D) superconductor
181. The Laser is a beam of radiations which are
(A) Coherent and non-monochromatic
(B) Non-coherent and monochromatic
(C) Coherent and monochromatic
(D) Non-coherent and non-monochromatic
182. In electro-refining, the pure metal deposited on
(A) anode (B) vessel
(C) electrolyte (D) cathode
183. Which one of the following is correctly matched?
(A) Primary consumer - Leopard
(B) Secondary consumer - Grass
(C) Decomposer - Bacteria
(D) Producer - Deer
184. The deciduous trees will
(A) depend on others for their food
(B) shed their leaves every year
(C) not lose their leaves
(D) synthesise their own food
185. Identify the DBMS among the following.
(A) MS-Excel (B) MS-Access
(C) MS-PowerPoint (D) PL/SQL
186. The database in which records are organised in a tree-like structure is
(A) Object-oriented database
(B) Network database
(C) Hierarchical database
(D) Relational database
187. Natural rubber is a polymer of
(A) Styrene (B) Vinyl acetate
(C) Propene (D) Isoprene
188. The pH of lemon juice is expected to be
(A) more than 7
(B) equal to 7
(C) nothing can be predicted
(D) less than 7
189. An example of heterocyclic compound is
(A) Anthracene (B) Naphthalene
(C) Furan (D) Benzene

190. Which country will host the next World Cup Football in 2014 ?

- (A) Spain
- (B) France
- (C) Chile
- (D) Brazil

191. Which one of the following ancient monuments in Delhi is **not** a World Heritage Monument ?

- (A) Qutub Minar
- (B) Red Fort
- (C) Jantar Mantar
- (D) Humayun's Tomb

192. Which one of the following organizations and its headquarters are **wrongly** matched ?

Organizations	Headquarters
(A) International Civil Aviation Organization	— London
(B) Interpol	— Lyon
(C) Universal Postal Union	— Berne
(D) Food and Agriculture Organization	— Rome

193. Which one of the following films was **not** directed by Satyajit Ray ?

- (A) *Salaam Bombay*
- (B) *Aparajita*
- (C) *Charulata*
- (D) *Pather Panchajali*

194. The endangered species are listed in what colour data book ?

- (A) Blue
- (B) Black
- (C) Red
- (D) Green

195. Which country won the maximum number of medals in the Asian Athletic Championships held in Pune recently ?

- (A) China
- (B) Japan
- (C) Saudi Arabia
- (D) Bahrain

196. Which Union Territory in India has 1 districts but none of its districts has a common boundary with its other districts ?

- (A) Chandigarh
- (B) Puducherry
- (C) Dadra and Nagar Haveli
- (D) Andaman and Nicobar Islands

197. The Keibul Lamjao, the only floating National Park in the world is in

- (A) Meghalaya
- (B) Manipur
- (C) Mizoram
- (D) Assam

198. Which one of the following days is **not** observed in the month of October ?

- (A) International Day of Non-violence
- (B) Indian Air-force Day
- (C) U.N. Day
- (D) World Environment Day

199. Who is the author of the book "*The State of the Nation*" ?

- (A) Fali S. Nariman
- (B) Mark Tully
- (C) Vinod Mehta
- (D) Kuldeep Nayar

200. Among the following Nobel laureates, who was **not** a recipient of the Nobel Prize for Peace ?

- (A) Norman Ernest Borlaug
- (B) Sir Winston Churchill
- (C) Woodrow Wilson
- (D) Linus C. Pauling