ICET – 2011
Andhra University, Visakhapatnam – 530 003

Final Key for Question Booklet Code A

SECTION – A
Analytical Ability

Questions : 75
Marks : 75

(i) Data Sufficiency

Note: In questions numbered 1 to 20, a question is followed by data in the form of two statements labelled as I and II. You must decide whether the data given in the statements are sufficient to answer the questions. Using the data make an appropriate choice from (1) to (4) as per the following guidelines:

1 (a) Mark choice (1) if the statement I alone is sufficient to answer the question.
2 (b) Mark choice (2) if the statement II alone is sufficient to answer the question.
3 (c) Mark choice (3) if both the statements I and II are sufficient to answer the question but neither statement alone is sufficient.
4 (d) Mark choice (4) if both the statements I and II together are not sufficient to answer the question and additional data is required.

1 (a) Mark choice (1) if the statement I alone is sufficient to answer the question.
2 (b) Mark choice (2) if the statement II alone is sufficient to answer the question.
3 (c) Mark choice (3) if both the statements I and II are sufficient to answer the question but neither statement alone is sufficient.
4 (d) Mark choice (4) if both the statements I and II together are not sufficient to answer the question and additional data is required.
1. What is the area of the circle? [4]
   సరిధించ వ్యాసం 10 మీటర్లు కంటే?

   I. The centre of the circle is (0, 0).
      సరిధించ వ్యాసం (0, 0).
   II. The point (2, 3) lies within the circle.
       ప్రాంతం (2, 3) ను వ్యాసం కంటే ఉంటే.

2. What is the value of $2x + 3y$? [3]

   $2x + 3y$ ఎంతో ఉంటే?

   I. $x + y = 2$
   II. $3x - 2y = 1$

3. What is the value of $p^3 + q^3$? [4]

   $p^3 + q^3$ ఎంతో ఉంటే?

   I. $p^2 + q^2 = 74$
   II. $pq = 35$

4. After how much time will A meet B? [3, 4]

   మూటక సమయంలో ఎండువు బ్యాంకు బాయి ఎండించబడతాయ?

   I. A and B are at a distance of 50 metres from each other.
      A, B గు ఎండువు కంటే 50 మీటర్లు దూరం ఉంటుంది.
   II. A and B are moving in the opposite directions with respective speeds of 10 kmph and
       15 kmph.
       A, B గు ఎండువు కంటే 10 కి.మీ.ప్రాత్యుభావం, 15 కి.మీ.ప్రాత్యుభావం ఉంటుంది.

5. If $a > 0$ then is $a > b$? [2]

   $a > 0$ ఎండువు సాధారణం $a > b$ సాధారణం?

   I. $a^2 > b^2$
   II. $\frac{a}{b} = \frac{2}{3}$
6. Is \( g : \mathbb{R} \rightarrow \mathbb{R} \) an even function? \[1\]

\( g : \mathbb{R} \rightarrow \mathbb{R} \) and \( f(x) = f(-x) \) ?

I. \( g(x) = g(-x) \) for every \( x \in \mathbb{R} \)

II. \( g(x) \) is a polynomial of even degree.

7. What is the cost price of the article? \[3\]

\( \text{₹} \) \( y \) \( \text{₹} \) \( z \) \( \text{₹} \) ?

I. The selling price of the article is \( \text{₹} \) 50.

II. The profit is 10%.

8. What is the positive integer value of \( x \)? \[1\]

\( x \) \( \geq \) \( \leq \) \( \geq \) \( \leq \) ?

I. \( 16 < 5x + 1 < 26 \)

II. \( 4 < x^2 < 25 \)

9. What is the present age of the father? \[3\]

\( \text{₹} \) \( \text{₹} \) \( \text{₹} \) ?

I. The sum of the present ages of the father and his son is 46.

II. 5 years ago the father’s age was 5 times that of his son.

10. How many elements are there in the set \( A \)? \[3\]

\( \text{₹} \) \( \text{₹} \) \( \text{₹} \) ?

I. \( A \cap B \) has 25 elements.

II. \( B - A \) has 15 elements.
11. How many brothers does A have? [3]
   A అంతే ఎంతే దక్షిణాద అవి?
   I. A’s father has four children.
      అయితే ఆయన చచ్చు మూడు టాక్కడు.
   II. A is the only daughter of her parents.
      అయితే ఆయన మాత్రం కనంత దాటిని.

12. In the right-angled \( \triangle ABC \) what is \( \angle A \)? [4]
    యొక్క ఎంతే సమీపానికి తెనిలో తెలియజేస్టే అంటే \( \angle A \) ?
    I. \( \angle B = 30^\circ \)
    II. \( \angle A + \angle C > 90^\circ \)

13. What is the perimeter of the circular sector? [3]
    సరువుత్తో పై పచ్చడానికి వండి మౌలికానికి ఎంతే?
    I. The angle of the sector is \( \frac{\pi}{3} \).
       పై పచ్చడానికి ఎంతే?
       \( \frac{\pi}{3} \)
    II. The area of the sector is \( 6\pi \) square units.
       పై పచ్చడానికి \( 6\pi \) చతుర్యం ఆక్రమించింది.

14. Is the product \( a \cdot b \) an irrational number? [4]
    పొంది దానికి ఎంతే చాలా పొందగలిగిన?
    I. \( a \) is an irrational number.
       తప్ప దాని మూలకాని ఎంతే?
    II. \( b \) is an irrational number.
       తప్ప దాని మూలకాని ఎంతే?

15. Is the value of \( x \) unique? [3]
    \( x \) ఎంతే ఎంతే?
    I. \( x < 0 \)
    II. \( x^2 = 16 \)
16. Is \( x > y ? \)
\( x > y \) చేసిందంటా?
I. \( 5^x = 25^y \)
II. \( y = -2 \)

17. What is the area of \( \Delta ABC ? \)
\( \Delta ABC లో విస్తీర్ణం ఎంత? \)
I. \( \angle ABC = 60^\circ \)
II. \( AB = BC = CA = 4 \)

18. What is the average of \( a, b, c \) and \( d \)?
\( a, b, c, d \) లో సరాసరి ఎంతం?
I. \( a, b, c \) and \( d \) are primes.
\( a, b, c, d \) సాంప్రదాయ వస్తుంటాయి.
II. \( a, b, c \) and \( d \) lie in \( \{10, 11, 12, ..., 20\} \)
\( a, b, c, d \in \{10, 11, 12, ..., 20\} \)

19. Is \( \Delta ABC \) right-angled?
\( \Delta ABC అడుగుప్పు ఉంటాయా?
I. \( A \) lies on the circle with \( BC \) as a diameter.
\( BC \) గించిన వేరుతుంది మరియు అంటేది \( A \) హోస్తోంది.
II. \( A, B \) and \( C \) lie on a circle.
\( A, B, C \) గించిన వేరుతుంది హోస్తోంది.

20. What is the value of \( V \)?
\( V \) రాశి ఎంతం?
I. \( V \) is the volume of a cylinder.
\( V \) అత్యంత వ్యతిరేకం.
II. The cylinder is of height \( h \) units.
\( h \) నుండి ఎత్తు ఉంది.
(ii) Problem Solving
(a) Sequence and Series

Note: In each of the questions numbered 21 to 35 a sequence of numbers or letters that follow a definite pattern is given. Each question has a blank space. This has to be filled by the correct answer from the four given options to complete the sequence without breaking the pattern.

21. 5, 10, 30, 150, 1050, __________ [4] (1) 10550  (2) 11000  (3) 11525  (4)√11550

22. 1 8/9, 2 2/9, 2 8/9, __________ [4] (1) 2 3/9  (2) 2 5/9  (3) 2 7/9  (4)√2 8/9

23. (2, 5, 9), (6, 8, 7), (10, 11, 5), __________ [4] (1)√ (14, 14, 3)  (2) (14, 13, 4)  (3) (12, 14, 3)  (4) (12, 13, 4)

24. 1 7/10, 27, 64, __________ [4] (1) 125  (2) 125  (3) 75  (4) 81

25. The value of the 13th term in the sequence 1, 3, 6, 10, 15, .... is __________ [4] (1) 97  (2)√91  (3) 89  (4) 85

26. 24, 35, 48, 63, __________, 99, 120 [4] (1) 72  (2) 79  (3)√80  (4) 87

27. DFIK, GILN, JLOQ, __________, MRPO [4] (1) MPRO  (2) MORP  (3)√MRPO  (4) MORT

28. 2A4, 3E5, 416, __________, 6Q8 [4] (1) 5M7  (2) 5N7  (3)√5P7  (4) 5S7

29. BDYZCA, CEZYDB, DFWXEC, __________ [4] (1) BDVWFC  (2) EGVVWD  (3) EGVWDF  (4) BDVWCF

[Signature] P.T.O.
30. ABDH, DECK, GHIN, ______, MNPT  
   (1) JKMQ  (2) JLMN  (3) JKMQ  (4) JLPM  

31. 50 : 65 : : 290 : :  
   (1) 170  (2) 226  (3) 260  (4) 325  

32. 289 : 324 : : ______ : : 64  
   (1) 36  (2) 49  (3) 55  (4) 76  

33. L × M : 12 × 13 : : U × W : :  
   (1) 21 × 23  (2) 21 × 22  (3) 21 × 31  (4) 24 × 26  

34. Foot : Inch : : Year :  
   (1) Day  (2) Week  (3) Month  (4) Decade  

35. 441 : 961 : : 21 : :  
   (1) 11  (2) 31  (3) 61  (4) 41  

Note: In questions 36 to 45, pick the odd thing out.

36. (1) 35  (2) 77  (9) 117  (4) 143  

37. (1) 14  (2) 34  (3) 62  (4) 96  

38. (1) (2, 3, 13)  (2) (3, 4, 25)  (3) (4, 5, 41)  (4) (5, 6, 71)  

39. (1) July  (2) August  (3) September  (4) October  

40. (7) 11  (2) 111  (3) 111111  (4) 111111111  

41. (9) 19  (2) 13  (3) 7/5  (4) 3/2  

42. (1) (0111)₂  (2) (1101)₂  (9) (1111)₂  (4) (10001)₂  

43. (1) 2W3  (2) 1Q7  (3) 1M3  (4) 1R9  

44. (1) \(x^2 + 4x + 5 = 0\)  (2) \(x^2 + 4x + 4 = 0\)  (3) \(x^2 - 4x + 4 = 0\)  (4) \(x^2 + 2x + 1 = 0\)  

45. (1) 37  (2) 47  (9) 57  (4) 67  

8
(b) Data Analysis

Note for Questions 46 to 50:
The following Pie diagram shows the marks secured by a student in different subjects in an examination. If the student scored 135 marks in Mathematics, answer the questions 46 to 50 after studying the Pie-chart.

46. What is the total number of marks secured by the student in all the subjects put together?

- (1) 360
- (2) 450
- (3) 540
- (4) 720

47. How many marks did he score in Science?

- (1) 108
- (2) 114
- (3) 120
- (4) 136

48. How many more marks did the student score in Science and English put together than he scored in Social Studies and Hindi put together?

- (1) 9
- (2) 18
- (3) 27
- (4) 45

49. The ratio of the marks scored by him in Hindi to the marks scored in Social Studies, is

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

50. Out of the total marks scored by him in the examination, the percentage of marks scored in Social Studies is

- (1) 15
- (2) 20
- (3) 25
- (4) 30

P.T.O.
Notes for Questions 51 to 55:

Each of the integers from 1 to 16 are to be placed on the Venn diagram given below in the appropriate regions A to H. Take

\[ S = \text{the set of integers from 1 to 16} \]
\[ I = \text{the set of odd integers from 1 to 16} \]
\[ II = \text{the set of perfect square integers from 1 to 16} \]
\[ III = \text{the set of prime integers from 1 to 16} \]
\[ H = S - (I \cup II \cup III) \]

Answer the questions from 51 to 55 based on this data.

51-55 వేన్ ప్లాన్ తెలుగులో

I = \{1 నుండి 16 వరకు ఉన్న సంఖ్యలు నియంత్రించటసాగాలి\}
\[ S = \{1 నుండి 16 వరకు ఉన్న సంఖ్యలు\} \]
\[ I = \{1 నుండి 16 వరకు ఉన్న మొదలు సంఖ్యలు\} \]
\[ II = \{1 నుండి 16 వరకు ఉన్న వైవిద్య సంఖ్యలు\} \]
\[ III = \{1 నుండి 16 వరకు ఉన్న ప్రముఖ సంఖ్యలు\} \]
\[ H = S - (I \cup II \cup III) \]

అంచిన సంఖ్యలు అవి చిత్రంలో చిత్రించినవి 51-55 అంచిన సమస్యలు వాడవచ్చు.

51. Which regions in the diagram are empty (not represented)?

4

(1) G only
(2) C and G only
(3) A and F only
(4) G and F only
52. Which regions contain a single integer?
   (1) B and D only         (2) G and D only
   B పర్యవేక్షణ D పర్యవేక్షణ
   (3) A and C only         (4) E and B only
   A పర్యవేక్షణ C పర్యవేక్షణ

53. Which regions contain five integers?
   (1) E and H only         (2) D and B only
   E పర్యవేక్షణ H పర్యవేక్షణ
   (3) B only              (4) A and C only
   B పర్యవేక్షణ

54. Which regions contain two integers?
   (1) E and F only         (2) B and D only
   E పర్యవేక్షణ F పర్యవేక్షణ
   (3) A and E only         (4) C only
   A పర్యవేక్షణ E పర్యవేక్షణ

55. The number of elements contained in the regions E and D put together is
   (1) 5          (2) 6         (3) 7          (4) 8
   E పర్యవేక్షణ D పర్యవేక్షణ సంయోగం

(c) Coding and Decoding Problems

Notes to Questions 56 to 60:
In a code, the $n^{th}$ letter in English alphabet is coded to $k^{th}$ letter, where $k = 3n + 2 \pmod{26}$, $1 \leq k \leq 26$. For example, the 5th letter E is coded as Q since $3 \times 5 + 2 = 17 = 17 \pmod{26}$ and Q is the 17th letter. The reverse of this process is used for decoding. Based on this coding and decoding processes, answer the questions 56 to 60:

56 – 60 కి పరిచెట్టు నిబంధించండి:

$k = 3n + 2 \pmod{26}$, $1 \leq k \leq 26$ కాదే, అయితే ఎంపిక సంవత్సరానికి n అంటే పర్యవేక్షణ సంఖ్య ఎంటే $k = 3n + 2$ పర్యవేక్షణ సంఖ్య. ఎంపిక సంవత్సరానికి 5 అంటే ఎంటే E అంటే Q పర్యవేక్షణ సంఖ్య. ఎంపిక సంవత్సరానికి $3 \times 5 + 2 = 17 = 17 \pmod{26}$ ఎంటే ఎంటే Q పర్యవేక్షణ సంఖ్య. ఎంపిక సంవత్సరానికి, ఈ పర్యవేక్షణ సంఖ్య ఎంటే $17$ పర్యవేక్షణ సంఖ్య 56 – 60 అంటే ఎంటే ఎంపిక కి పరిచెట్టు నిబంధించండి.

56. The code word for STATE is

(1) GJEJG         (2) GJEJF         (3) GJEJP         (4) GJEJQ

P.T.O.
57. The code word for MOUSE is 

   MOUSE 8 ముస్రు

(1) OUMQG (2) OUMQG (3) OUGMQ (4) OUGQM

58. The code word for JOLLY is 

   JOLLY 8 జోల్ల్

(1) PASSY (2) FUPPI (3) FULLY (4) FOLLY

59. The word coded as XEDI is 

   XEDI 8 ఎస్డీ

(1) POLE (2) PALE (3) PARK (4) PERK

60. The number of letters that are invariant in this code is 

   వాందలు అంతర్వందలు కలిగి ఉంటాయి

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

Note for Questions 61 to 65:

61 – 65 అవన్ని ప్రశ్నాలు విస్త్రితం:

In a code, the n-th letter of an English alphabet is coded to f(n)th letter, where f(n) is defined by

\[ f(n) = \begin{cases} 
n + 17, & \text{if } 1 \leq n \leq 9 \\ 
n - 1, & \text{if } 10 \leq n \leq 18 \\ 
n - 18, & \text{if } 19 \leq n \leq 26 
\end{cases} \]

For decoding, the reverse process is used. Based on this coding and decoding process, answer the questions 61 – 65:

\[ f(n) = \begin{cases} 
1 \leq n \leq 9 & \text{కొంతా} \\ 
10 \leq n \leq 18 & \text{కొంతా} \\ 
19 \leq n \leq 26 & \text{కొంతా} 
\end{cases} \]

61. The code word for MANGO is 

   MANGO 8 మాంగో

(1) LSOYN (2) LRMXN (3) KRLXN (4) KTPFN

62. The code word for RHYME is 

   RHYME 8 రైమ్

(1) QZGNV (2) PYGMU (3) QYLIV (4) QYGLV
63. The word that is coded as ROME is
   (1) APNW  (2) ANPW  (3) AOMW  (4) AMNU
64. The code word for ICET is
   (1) ZUWC  (2) ZVTD  (3) ZTVB  (4) ZUTD
65. Which letter is coded as X?
   (1) F  (2) G  (3) W  (4) C

(d) Date, Time and Arrangement Problems.
(10 Marks)

66. B is the brother of A, S is the sister of B, E is the brother of D, D is the daughter of A and F is the father of S. Then the uncle of E is
   (1) A  (2) B  (3) E  (4) F

67. A person X is facing North. He turns 165° in the anti-clockwise direction, then 30° in the clockwise direction and thereafter 90° in the anti-clockwise direction. Then X is facing
   (1) North-West  (2) North-East  (3) South-West  (4) South-East

68. The ages of a son and his father was in the ratio 2 : 5 seventeen years ago. If the present age of the son is 35 years, the age of the father 5 years hence, is
   (1) 62 years  (2) 65 years  (3) 67 years  (4) 68 years

69. A leap year starts with Sunday. On what day will be the second of March in that year?
   (1) Wednesday  (2) Thursday  (3) Friday  (4) Saturday
70. If \( a \cdot b = a^3 + b^3 - 3ab \), then \( \frac{(2 \cdot 1) + (2 \cdot 1)}{(2 \cdot 1)} = \) \[ \text{(3)} \]
\( a \cdot b = a^3 + b^3 - 3ab \) \[ \text{(2)} \]
\( \frac{(2 \cdot 1) + (2 \cdot 1)}{(2 \cdot 1)} = \) \[ \text{(3)} \]
\[ \frac{9}{9} = \] \[ \text{(4)} \] 27

71. If A, M, D and S denote the usual addition, multiplication, division and subtraction respectively, then \[ (10 \ S \ (3 \ M \ 4) \ D \ 2) \ A \ 3 \] is equal to \[ \text{(2)} \]
A, M, D, S denotes סומנה סכום, קוכמן, קומל, קומל סכום סכום וסכום \[ (10 \ S \ (3 \ M \ 4) \ D \ 2) \ A \ 3 \] \[ \text{(3)} \] סכום סכום
\( \text{(1)} \) 3 \[ \text{(2)} \]
\( \sqrt{7} \) \[ \text{(3)} \] 18 \[ \text{(4)} \] 75

72. If \( a \cdot b = a + b - \frac{ab}{2} \) for all \( a, b \in \mathbb{R} \) and \( e \) is a non-zero real number, then the value of \( a \) for which \( a \cdot e = a \) is \[ \text{(3)} \]
\( a \in \mathbb{R} \) \[ \text{(2)} \]
\( a \cdot b = a + b - \frac{ab}{2} \) \[ \text{(3)} \]
\( e \) \[ \text{(4)} \] 3

73. B is the father of A, C is the wife of B, D is the mother of C and E is the husband of D. Then how is E related to A? \[ \text{(1)} \]
A \& B \( \text{Grandfather} \) \[ \text{(2)} \]
B \& C \( \text{Mother} \) \[ \text{(3)} \]
C \& D \( \text{Brother-in-law} \) \[ \text{(4)} \]
D \& E \( \text{Father} \)

74. In a row of six persons, D and C are immediate neighbours of E, B is the only neighbour of A and C is the neighbour of F. The possible persons occupying the two end points of the row are \[ \text{(2)} \]
A \& B \( \text{F and B} \) \[ \text{(3)} \]
A \& F \( \text{A and F} \) \[ \text{(4)} \]
F \& C \( \text{F and C} \) \[ \text{(1)} \]
D \& C \( \text{C and A} \)

75. If a clock shows 12 minutes past 5, then the angle between its two hands is \[ \text{(2)} \]
\( \) \[ \text{(1)} \] 86° \[ \text{(2)} \] 84° \[ \text{(3)} \] 80° \[ \text{(4)} \] 78°
SECTION – B
Mathematical Ability

Questions: 75
Marks: 75

(i) Arithmetical Ability

76. If \(a:b = 4:5\) and \(b:c = 7:9\), then \(a:b:c = \) \(\boxed{4:3}\)

\(a:b = 4:5\) and \(b:c = 7:9\) అని, అంటే \(a:b:c = \) \(\boxed{4:3}\)

\(\begin{array}{llll}
1) & 4:5:9 & 2) & 4:7:9 & 3) & 4:5:7 & 4) & 28:35:45
\end{array}\)

77. \(\sqrt{60} + 8 = \) \(\boxed{2}\)

\(\sqrt{60} + 8 = \) \(\boxed{2}\)

\(\begin{array}{llll}
1) & 2\sqrt{2} + 3 & 2) & \sqrt{3} + \sqrt{5} & 3) & \sqrt{3} + \sqrt{15} & 4) & \sqrt{5} + \sqrt{7}
\end{array}\)

78. When the following fractions are arranged in ascending order of magnitude, the middle one is \(\boxed{3}\)

అప్పు ప్రతి స్థానానికి ఉన్న అంశాలు వ్యతిరేకంగా వేరుతుంది, మధ్య ఒకటి ఉంటుంది \(\boxed{3}\)

\(\begin{array}{llll}
1) & \frac{2}{3} & 2) & \frac{5}{7} & 3) & \frac{9}{13} & 4) & \frac{7}{9}
\end{array}\)

79. A and B started a business investing \(\text{₹}10,00,000\) and \(\text{₹}15,00,000\) respectively and C joined them after 6 months with an investment of \(\text{₹}20,00,000\). The ratio of the share of their profits at the end of the year is \(\boxed{2}\)

A, B నుంచి \(\text{₹}10,00,000, \text{₹}15,00,000\) పెట్టుక ఆయామంత్రించి, C ఆది 6 మీహారం పొట్టి \(\text{₹}20,00,000\) పెట్టుక ఆయామంత్రించిన అయితే అయామంత్రించిన పరిమాణాలు పరిమాణాలు పరిమాణాలు ఉండాలి. అయితే పరిమాణాల పరిమాణాలు ఉండాలి \(\boxed{2}\)

\(\begin{array}{llll}
1) & 3:2:3 & 2) & \sqrt{2}:3:2 & 3) & 1:3:1 & 4) & 2:3:4
\end{array}\)

80. A man sold an article for \(\text{₹}187\) and gained 10%. The article was bought for \(\boxed{3}\)

అందులో ఒక విషయం కోటిగా \(\text{₹}187\) వేసినా, 10% అధికంగా ప్రదానం చేసాడు. అందువల్ల విషయం వాపసం ఉంది \(\boxed{3}\)

\(\begin{array}{llll}
1) & \text{₹}150 & 2) & \text{₹}160 & 3) & \text{₹}170 & 4) & \text{₹}180
\end{array}\)

P.T.O.
81. If \( \frac{1}{3} \) of a number is \( \frac{1}{10} \), then \( \frac{4}{5} \) of that number is \( \frac{3}{5} \).

\[ \begin{align*}
(1) & \quad \frac{5}{6} \\
(2) & \quad \frac{5}{25} \\
(3) & \quad \frac{6}{25} \\
(4) & \quad \frac{5}{6}
\end{align*} \]

82. If \( x + y + z = 0 \), then for any \( a > 0 \), \( a^{x+y} a^{y+z} a^{z+x} = a^3 \).

\[ \begin{align*}
(1) & \quad 1 \\
(2) & \quad a \\
(3) & \quad a^2 \\
(4) & \quad a^3
\end{align*} \]

83. Three persons A, B and C can do a work individually in 10 days, 12 days and 15 days respectively. If all the three persons work together, the number of days needed to complete the same work is \( \frac{3}{3} \).

\[ \begin{align*}
(1) & \quad 8 \\
(2) & \quad 6 \\
(3) & \quad 4 \\
(4) & \quad 5
\end{align*} \]

84. By selling 15 mangoes, a fruit seller recovers the cost price of 20 mangoes. What is the profit percentage?

\[ \begin{align*}
(1) & \quad 25 \% \\
(2) & \quad \frac{200}{3} \% \\
(3) & \quad \frac{100}{3} \% \\
(4) & \quad 50 \%
\end{align*} \]

85. The monthly incomes of two persons P and Q are in the ratio 4 : 3 and their monthly expenditures are in the ratio 3 : 2. If each of them save \( \text{₹} 750 \) per month, then Q’s monthly income is \( \frac{3}{3} \).

\[ \begin{align*}
(1) & \quad \text{₹} 3,000 \\
(2) & \quad \text{₹} 1,500 \\
(3) & \quad \text{₹} 2,250 \\
(4) & \quad \text{₹} 3,750
\end{align*} \]

86. Two taps A and B can fill a tank in 12 and 18 minutes respectively. Both are kept open for 2 minutes and then the tap A is closed. In how many minutes will the tank be filled? \( \frac{3}{3} \)

\[ \begin{align*}
(1) & \quad 16 \\
(2) & \quad 16 \\
(3) & \quad 15 \\
(4) & \quad 13
\end{align*} \]
87. A rectangle of length 12 cm and breadth 5 cm is inscribed in a circle of radius r cm. Then r (in cm) is

\[
\begin{align*}
\sqrt{\frac{3}{12}} = \frac{3}{12} & \quad (1) \\
\sqrt{\frac{3}{12}} = 6.5 & \quad (2) \\
\sqrt{6.5} & \quad (3) \\
6 & \quad (4)
\end{align*}
\]

88. An item costing ₹200 is being sold out at 10% loss. If the price is further reduced by 5%, the selling price will be

\[
\begin{align*}
\text{(1) ₹170} & \quad (2) \sqrt{\text{₹171}} \\
\text{(3) ₹175} & \quad (4) \text{₹179}
\end{align*}
\]

89. If \(\frac{6^{2/3} \cdot (24)^{2/5}}{9^{1/4} \cdot 12^{1/2}} = 3^a \cdot 2^b\) then \(a + b =\)

\[
\begin{align*}
\frac{\sqrt[3]{3^4}}{15} & \quad (1) \\
\frac{29}{15} & \quad (2) \\
\frac{31}{15} & \quad (3) \\
\frac{22}{15} & \quad (4)
\end{align*}
\]

90. A train runs from station A to station B in 1 hr, 20 min. If the train is running at a speed of 18 kmph, then the distance between A and B is

\[
\begin{align*}
\text{(1) 24 km} & \quad (2) 27 \text{ km} \\
\text{(3) 20 km} & \quad (4) 30 \text{ km}
\end{align*}
\]

91. The sum of the even numbers from 100 to 200 (both numbers included) is

\[
\begin{align*}
\text{(1) 100} & \quad (2) 3875 \\
\text{(3) 3825} & \quad (4) 7750
\end{align*}
\]

92. 4 men and 6 women finish a job in 8 days while 3 men and 7 women finish it in 10 days. 10 women working alone will finish it in

\[
\begin{align*}
\text{(1) 24 days} & \quad (2) 32 \text{ days} \\
\text{24 days} & \quad (3) \\
24 \text{ days} & \quad (4) 40 \text{ days}
\end{align*}
\]
93. Two persons A and B together can do a work in 30 days. After A and B worked for 5 days, C joined them and they together finished the work in another 20 days. Then the number of days in which C alone can complete the total work is

\[ \sum 4 \times \frac{3}{2} \]

A, B can do the work in 30 days, \( \frac{1}{5} \) of 30 = 6 days; C can do the work in 20 days, \( \frac{1}{20} \) of 20 = 1 day. After 5 days, \( \frac{3}{2} \) of the work is done.

\( \begin{array}{ccc}
1 & 60 & 2 & 75 & 3 & 90 & 4 & 120
\end{array} \)

94. If the diagonal of a cube is \( 5\sqrt{3} \) m, its volume (in cubic metres) is \( \sum 3 \times \frac{5}{2} \)

\( \begin{array}{ccc}
1 & 150 & 2 & 145 & 3 & 125 & 4 & 120
\end{array} \)

95. If \( n = 10838 \), then the digit in the units place of \( n^3 \) is \( \sum 4 \times \frac{3}{2} \)

\( \begin{array}{ccc}
1 & 4 & 2 & 2 & 3 & 6 & 4 & 8
\end{array} \)

96. A, B and C started a business. A invested \( \frac{1}{5} \)th of the capital; B invested \( \frac{1}{3} \)rd of the capital and the rest by C. If they got a total profit of \( \text{₹} 3000 \), then the C's share of profit is \( \sum 3 \times \frac{3}{2} \)

A, B, C invested \( \frac{1}{5} \), \( \frac{1}{3} \), and the rest by C.\( \text{₹} 3000 \) profit, \( \text{₹} 1500 \) to A, \( \text{₹} 1000 \) to B, and \( \text{₹} 1400 \) to C.

\( \begin{array}{ccc}
1 & 1500 & 2 & 1000 & 3 & 1400 & 4 & 600
\end{array} \)

97. The smallest positive integer which leaves a remainder 3 when divided by 5 and leaves a remainder 5 when divided by 7, is \( \sum 3 \times \frac{3}{2} \)

68 divided by 5 leaves a remainder 3, and 68 divided by 7 leaves a remainder 5.

\( \begin{array}{ccc}
1 & 68 & 2 & 23 & 3 & 33 & 4 & 12
\end{array} \)

98. If \( 9x - 3y = 12 \) and \( 3x - 5y = 7 \), then \( 6x - 2y = \)

\( \sum 4 \times \frac{3}{2} \)

\( \begin{array}{ccc}
1 & -5 & 2 & 4 & 3 & 2 & 4 & 8
\end{array} \)

99. If 7% of 900 is equal to \( x \) % of 200, then \( x = \)

\( \sum 2 \times \frac{3}{2} \)

\( \begin{array}{ccc}
1 & 14 & 2 & 31\frac{1}{2} & 3 & 32\frac{1}{2} & 4 & 21\frac{1}{2}
\end{array} \)

100. The least value of \( k \) such that \( 735 \times k \) is a perfect square is \( \sum 4 \times \frac{3}{2} \)

\( \begin{array}{ccc}
1 & 3 & 2 & 5 & 3 & 7 & 4 & 15
\end{array} \)
101. What is the remainder when $3^{10}$ is divided by 4?

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

102. Taps A and B can fill a tank in 10 hours and 15 hours respectively. The time taken (in hours) for both the taps together to fill the tank is

- (1) $12\frac{1}{2}$
- (2) 5
- (3) $\sqrt{6}$
- (4) 10

103. If the diagonals of a rhombus are 12 cm and 18 cm, then its area (in sq. cm.) is

- (1) 216
- (2) $\sqrt{108}$
- (3) 54
- (4) 180

104. A merchant prepares the market price of the article at a profit of 40% and sells them giving a discount of 10%. If an article is sold for ₹630, then its cost price (in rupees) is

- (1) 600
- (2) $\sqrt{500}$
- (3) 450
- (4) 400

105. If the speed of a train is 92.4 kmph, how many metres would it cover in 20 minutes?

- (1) $\sqrt{30,800}$
- (2) 3,080
- (3) 4,028
- (4) 4,280

106. If $\frac{4}{5}$ of a bucket is filled in one minute, the rest of it will be filled in

- (1) 9/4 minutes
- (2) 1 minute
- (3) $\sqrt{1/4}$ minute
- (4) $\frac{1}{2}$ minutes

107. The average of all the prime numbers less than 20 is

- (1) 9
- (2) 9.15
- (3) 9.55
- (4) $\sqrt{9.625}$

108. If the area of a triangle with base $x$ is equal to the area of a square with side $x$, then the altitude of the triangle is

- (1) $\frac{x}{2}$
- (2) $x$
- (3) $2x$
- (4) 3$x$
109. If \( \frac{x+y}{4x+y} = \frac{7}{10} \), then \( x:y = \) \( \sqrt[3]{3} \) \( \text{(3)} \):
\[
\frac{x+y}{4x+y} = \frac{7}{10} \Rightarrow x:y = \frac{3}{7}.
\]

(1) 7:10 (2) 6:1 (3) 1:6 (4) 10:7

110. The area of a trapezium is 220 sq. cm, and its height is 8 cm. If the sum of the non-parallel sides is 20 cm, its perimeter (in cm) is \( \sqrt[5]{17} \) \( \text{(3)} \):
\[
\text{Area} = \frac{1}{2} \times (a+b) \times h = 220 \text{ cm}^2, h = 8 \text{ cm},\quad a+b = 20 \text{ cm}.
\]

(1) 75 (2) 110 (3) 100 (4) 65

(ii) Algebraic and Geometrical Ability (Marks: 30)

111. If \( x^4 - 8x^3 + 18x^2 - 8x + 1 = 0 \), then the value of \( x + \frac{1}{x} \) is \( \sqrt[4]{4} \) \( \text{(4)} \):
\[
x^4 - 8x^3 + 18x^2 - 8x + 1 = 0 \Rightarrow x + \frac{1}{x} = \frac{8}{3}.
\]

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

112. Among the following \( (p \rightarrow q) \rightarrow p \) is equivalent to \( \text{ wholesome } \):
\[
(p \rightarrow q) \rightarrow p \text{ is equivalent to } (p \land q)
\]

(1) \( p \land q \) (2) \( p \rightarrow (p \land q) \) (3) \( p \) (4) \( q \)

113. If a set A has 3 elements and another set B has 5 elements, then the number of relations from A to B is \( \sqrt[4]{4} \) \( \text{(4)} \):
\[A = \{1, 2, 3, 4, 5\}, B = \{6, 7, 8, 9\} \Rightarrow \text{Number of relations from } A \rightarrow B = 2^{5} \times 2^{3} = 2^{16}.
\]

(1) 15 (2) 23 (3) 25 (4) 215

114. If \( A = \{4, 5, 6, 7, 8, 9\}, B = \{1, 2, 3, 4, 5, 6\} \) and \( C = \{2, 4, 6, 8\} \), then \( A \setminus (B \cap C) = \sqrt[4]{2} \) \( \text{(2)} \):
\[A = \{4, 5, 6, 7, 8, 9\}, B = \{1, 2, 3, 4, 5, 6\}, C = \{2, 4, 6, 8\}, A \setminus (B \cap C) = \{4, 6\}.
\]

(1) \{4, 6\} (2) \{5, 7, 8, 9\} (3) \{2, 4, 6\} (4) \{7, 8, 9\}

115. Among the following, the converse of \( p \rightarrow (q \rightarrow r) \) is equivalent to \( \text{ wholesome } \):
\[
(p \land q) \land (r \rightarrow p)
\]

(1) \( (p \land q) \land (r \rightarrow p) \) (2) \( \neg r \lor (p \land q) \) (3) \( r \lor q \rightarrow p \) (4) \( (p \lor q) \lor (r \lor p) \)

20
116. If a set A has 4 elements and another set B has 2 elements, then the number of functions from A into B that are not surjections is

\[ 2^4 - 2 \]

(1) 16  (2) 14  (3) 3  (4) 8

117. If \( f(x) = 12x^3 - 8x^2 + 4x - 1 \) then \( f(-2) + f(2) + f(-1) + f(1) = \)

\[ (3\sqrt{2})^2 - 84 \]

(1) \( \sqrt{12} \)  (2) 84  (3) 0  (4) 434

118. \( \cos 1^\circ \cdot \cos 2^\circ \cdot \cos 3^\circ \cdot \ldots \cdot \cos 179^\circ = \)

\[ \sum \begin{align*} 2 \end{align*} \]

(1) \( 1 \)  (2) \( 3\sqrt{0} \)  (3) \( 180^\circ \)  (4) 90

119. If a set A has 7 elements, then the number of subsets of A having exactly one element in each is

\[ 4^3 \]

(1) \( 2^6 \)  (2) \( 2^7 \)  (3) \( 7^2 \)  (4) \( 3\sqrt{7} \)

120. \( \tan 170^\circ + \tan 55^\circ + \tan 170^\circ + \tan 55^\circ = \)

\[ \sum \begin{align*} 2 \end{align*} \]

(1) \( \tan 115^\circ \)  (2) \( \sqrt{4} \tan 45^\circ \)  (3) \( \tan 105^\circ \)  (4) \( \tan 135^\circ \)

121. \( \sin 83^\circ \cos 53^\circ - \cos 83^\circ \sin 53^\circ = \)

\[ \sum \begin{align*} 1 \end{align*} \]

(1) \( \frac{1}{\sqrt{2}} \)  (2) \( \frac{\sqrt{3}}{2} \)  (3) \( \frac{1}{2} \)  (4) 0

122. If \( 180^\circ < A < 270^\circ, 90^\circ < B < 180^\circ \), \( \tan A = \sqrt{3} \) and \( \sin B = \frac{\sqrt{3}}{2} \), then the value of

\( \sin (A - B) = \sum \begin{align*} 4 \end{align*} \)

\( 180^\circ < A < 270^\circ, 90^\circ < B < 180^\circ, \tan A = \sqrt{3} \) \( \cot B = \frac{\sqrt{3}}{2} \) \( \sin (A - B) = \)

(1) 0  (2) 1  (3) \( \frac{1}{2} \)  (4) \( \frac{\sqrt{3}}{2} \)

123. The slope of the line \( 3x + 5 = \frac{1}{2} \) is

\[ \sum \begin{align*} 1 \end{align*} \]

(1) \( 3x + 5 \) \( 4y - 7 \) \( \frac{1}{2} \)  (2) \( \frac{3}{2} \)  (3) \( \frac{3}{2} \)  (4) \( \frac{2}{3} \)
124. The Y-intercept of the line \( \frac{3y - 7}{4} = \frac{4x + 1}{5} \) is \( \text{[4]} \)

\[
(1) \ -\frac{7}{3} \quad \quad \quad (2) \ \frac{7}{3} \quad \quad \quad (3) \ -\frac{39}{15} \quad \quad \quad (4) \ \sqrt{\frac{39}{15}}
\]

125. \( 4 \csc 150^\circ + 3 \sec^2 210^\circ \)

\( 5 \tan 225^\circ + 6 \cot^2 330^\circ = \text{[1]} \)

\[
(1) \ \sqrt{\frac{12}{23}} \quad \quad \quad (2) \ -\sqrt{\frac{12}{23}} \quad \quad \quad (3) \ \frac{7}{11} \quad \quad \quad (4) \ -\frac{7}{11}
\]

126. A person on walking 20 metres towards a chimney in a horizontal line through its base observes that its angle of elevation of the top of the chimney changes from 30° to 45°. Then the height (in metres) of the chimney is \( \text{[2]} \)

\[
(1) \ 10\sqrt{3} \quad (2) \ 10(\sqrt{3} + 1) \quad (3) \ 20\sqrt{3} \quad (4) \ 20
\]

127. The remainder when \( 91 \times 93 \times 95 \times 97 \) is divided by 18 is \( \text{[3]} \)

\[
(1) \ 12 \quad (2) \ 10 \quad (3) \ \sqrt{15} \quad (4) \ 8
\]

128. A polynomial in \( x \) leaves remainders 2 and 3 when divided by \( x + 1 \) and \( x - 1 \) respectively. Then the remainder when that polynomial is divided by \( x^2 - 1 \) is \( \text{[4]} \)

\[
(1) \ \frac{3x + 2}{2} \quad (2) \ \frac{3x - 2}{2} \quad (3) \ \frac{x - 5}{2} \quad (4) \ \frac{x + 5}{2}
\]

129. The 11th term of the series 81, 27, 9, … is \( \text{[1]} \)

\[
(1) \ \frac{1}{729} \quad (2) \ \frac{1}{243} \quad (3) \ \frac{1}{2187} \quad (4) \ \frac{1}{310}
\]

130. The sum of first 12 terms of the series 5, 3, 1, -1, … is \( \text{[1]} \)

\[
(1) \ -72 \quad (2) \ -36 \quad (3) \ -48 \quad (4) \ -108
\]
131. \( \lim_{x \to 0} \frac{\tan x - x}{x} = \)

(1) 1
(2) -1
(3) 0
(4) does not exist / దీని కూడా కలదు

132. \( \lim_{x \to 1} \frac{1 + \sqrt[4]{x}}{1 + \sqrt[5]{x}} = \)

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

133. If \( y = 2\sec x \), then \( \frac{dy}{dx}_{x=0} = \)

\( y = 2\sec x \) \( \frac{dy}{dx} = \)

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

134. If \( f(x) = \frac{x^2 + 1}{x^2 - 1} \), then \( f'(2) = \)

\( f(x) = \frac{x^2 + 1}{x^2 - 1} \) \( f'(2) = \)

(1) \(\frac{8}{9}\)
(2) \(\frac{8}{9}\)
(3) \(\frac{5}{3}\)
(4) \(\frac{5}{3}\)

135. The coefficient of \( x^{15} \) in the product \( (x - 1) (x - 2) \ldots (x - 16) \) is

(1) 16!
(2) 136
(3) \(-136\)
(4) \(-16!\)

136. If the sum of all the coefficients in the expansion of \( (1 + 3x - 2x^2)^6 \) is 128, then the greatest coefficient in the expansion of \( (1 + x)^8 \) is

(1) 35
(2) 21
(3) 49
(4) 14

137. If \( A, B \) are \( 3 \times 3 \) matrices such that \( \det A = 2, \det B = -1 \), then \( \det (4AB) = \)

\( A, B \times 3 \times 3 \) \( \det (AB) = \)

(1) -8
(2) -32
(3) 8
(4) -128

P.T.O.
138. If \( A = \begin{bmatrix} 2x+3 & -4 \\ x+7 & 2 \end{bmatrix} \) and if det \( A = 0 \), then \( x = \) \( \boxed{4} \)

\[
A = \begin{bmatrix} 2x+3 & -4 \\ x+7 & 2 \end{bmatrix} \quad \text{det} \ A = 0 \quad \text{so,} \quad x = \\
(1) \frac{17}{4} \quad (2) \frac{14}{7} \quad (3) -\frac{14}{7} \quad (4) \sqrt[4]{\frac{17}{4}}
\]

139. If \( \alpha, \beta \) are the roots of the equation \( 7x^2 - 8x + 6 = 0 \) then \( (\alpha^2 + \beta^2) (\alpha + \beta) = \) \( \boxed{3} \)

\[7x^2 - 8x + 6 = 0 \quad \text{has roots} \quad \alpha, \beta \quad \text{then} \quad (\alpha^2 + \beta^2) (\alpha + \beta) = \\
(1) -\frac{20}{49} \quad (2) \frac{20}{49} \quad (3) -\frac{160}{343} \quad (4) \frac{160}{343}
\]

140. The distance (in metres) between two parallel tangents drawn to a circle of area 616 sq. m. is \( \frac{22}{7} \) \( \boxed{2} \)

\[616 \text{ sq. m. is} \quad \pi = \frac{22}{7} \text{ sq. m.} \quad \text{two parallel tangents drawn to a circle} \\
(1) 14 \quad (2) \sqrt{28} \quad (3) \frac{14}{\pi} \quad (4) \frac{28}{\pi}
\]

(iii) Statistical Ability

141. If the Mode and Mean of a data are 44 and 38 respectively, then the Median of the data is \( \boxed{4} \)

\[\text{Mode} \quad 44 \quad \text{Mean} \quad 38 \quad \text{Median} \quad 43 \]

\[
(1) 39 \quad (2) \sqrt[3]{40} \quad (3) 42 \quad (4) 43
\]

142. The Median of the observations 108, 343, 721, 39, 74, 192, 48, 10, 123 is \( \boxed{1} \)

\[\text{Median} \quad 108, 343, 721, 39, 74, 192, 48, 10, 123 \]

\[
(1) 108 \quad (2) 123 \quad (3) 74 \quad (4) 721
\]

143. If two dice are thrown, then the probability that the sum of the two numbers obtained is a prime number is \( \boxed{2} \)

\[\text{Prime numbers} \quad 2, 3, 5, 7, 11 \quad \text{possible} \quad 36 \quad \text{numbers} \]

\[
(1) \frac{7}{12} \quad (2) \sqrt[2]{\frac{5}{12}} \quad (3) \frac{1}{4} \quad (4) \frac{3}{4}
\]
144. The arithmetic mean of the first 71 natural numbers is 36
   \( \frac{3}{7} \)
   (1) 72  (2) 71  (3) \( \sqrt{36} \)  (4) 35.5

145. If a letter is selected at random from the first 15 letters of the English alphabet, then the probability that it is a consonant is \( \frac{4}{15} \)
   \( \sqrt{\frac{11}{15}} \)
   (1) \( \frac{4}{15} \)  (2) \( \sqrt{\frac{11}{15}} \)  (3) \( \frac{1}{3} \)  (4) \( \frac{2}{3} \)

146. The variance of the observations 73, 74, 75, …, 84, 85 is \( \sqrt{17} \)
   4
   (1) 17  (2) \( \sqrt{14} \)  (3) \( \sqrt{17} \)  (4) \( \sqrt{14} \)

147. If E, F are two events in a random experiment such that \( \frac{1}{2} \), \( \frac{1}{3} \), and
   \( P(E \cap F) = \frac{1}{12} \) then \( P(E \cup F) = \sqrt{2} \)

148. If a number is selected at random from the first 120 natural numbers, then the probability that it is divisible by 6 or 8 is \( \frac{3}{10} \)
   (1) \( \frac{1}{24} \)  (2) \( \frac{1}{5} \)  (3) \( \sqrt{\frac{1}{4}} \)  (4) \( \frac{1}{30} \)

149. For two positive real numbers, arithmetic mean and geometric mean are 13 and 12 respectively, then these two numbers are \( \sqrt{13} \)
   (1) 12.5, 13.5  (2) 12, 14  (3) \( \sqrt{8} \), 18  (4) 16, 10

150. If a leap year is selected at random, then the probability that there will be 53 Sundays in that year is \( \frac{5}{7} \)
   (1) \( \frac{1}{7} \)  (2) \( \frac{6}{7} \)  (3) \( \frac{2}{7} \)  (4) \( \frac{5}{7} \)
SECTON – C
Communication Ability

Questions : 50

PART – 1

Choose the correct meaning for the word given :

151. Contiguous
   (1) Infectious
   (2) Adjoining
   (3) Unlawful
   (4) Prohibitive

152. Homogeneous
   (1) Treated milk
   (2) Human beings and animal groups
   (3) Parts or people of similar type
   (4) Words spelt similarly but having different meanings

153. Insatiable
   (1) Unable to be satisfied
   (2) Not complete
   (3) Fulfilled
   (4) Covetous

154. Knick-knack
   (1) Game
   (2) Small ornament
   (3) Knock
   (4) Snack

155. Haughty
   (1) Sportive
   (2) Disdainful
   (3) Naught
   (4) Disconcerted

156. Grandiloquent
   (1) Grand plans
   (2) Great future
   (3) Exaggerated
   (4) Pompous

Fill in the blank choosing the correct word :

157. When the accident happened, the car was speeding down the ______ highway.
   (1) depraved
   (2) deprived
   (3) dislocated
   (4) deserted

158. He was ______ from the country when his visa expired.
   (1) repatriated
   (2) migrated
   (3) deported
   (4) exported

159. The three countries have signed a ______ pledging to work together in the health
    scheme.
   (1) memorial
   (2) memorabilia
   (3) memorandum
   (4) memoir

160. The judge promised to ______ the injustice done to him.
   (1) remove
   (2) abolish
   (3) redress
   (4) compensate
PART – 2

161. A deed is
   (1) any written matter.  (2) a draft of annulment.
   (3) a legal document.   (4) a present.

162. The concept of ‘gangplank’ implies
   (1) doing things through proper channels.
   (2) decentralising things.
   (3) defying established hierarchy.
   (4) clinging to a tyrannical authority.

163. Job specific tests that are designed to predict the potential of an individual to perform tasks are called
   (1) personality tests.  (2) aptitude tests.
   (3) intelligence tests.   (4) verbal ability tests.

164. A section of a Government department in charge of a particular activity is called a
   (1) diocese.               (2) compartment.
   (3) collegium.             (4) wing.

165. ‘Benchmarking’ is
   (1) increasing sales.
   (2) obtaining a brand mark.
   (3) setting a standard for performance.
   (4) opting out of competition.

166. HTML means
   (1) Hyper Text Modern Language.  (2) Hyper Text Modern Language.
   (3) Hyper Text Markup Language.   (4) Hyper Text Machine Language.

167. The installation wizard in Windows cannot
   (1, 3) perform automatic search.   (2) guide through screens.
   (4) install hardware.             (4) do quick installation.

168. GPS refers to
   (1) Geo-Positioning System     (2) Geo-Processing System
   (3) Global Positioning System   (4) Global Pointing System

169. Which of the following is not an input device?
   (1) Printer                (2) Keyboard
   (3) Light pen              (4) Scanner

170. The technique of creating a series of graphic frames to give an appearance of continuous movement is called
   (1) booting               (2) animation
   (3) diode                (4) graphics
Choose the correct answer:

171. A: I'm terribly sorry, John. I forgot your birthday. I don't know how it slipped my mind.  
B: That's O.K. I was disappointed though. I know you were very busy last week.

In this conversation, the speaker B is
(1) apologetic.  
(2) angry.  
(3) disappointed.  
(4) understanding.

172. "Had they built a house of their own, they would not have been on the road today" means
(1) they have built a house of their own.  
(2) they are not on the road today.  
(3) they have not built a house of their own but they are not on the road today.  
(4) they have not built a house of their own and so they are on the road today.

173. A: Remember to wear your safety belt in the car.  
B: Should I? Forget it.

B's reply shows that he is
(1) carefree.  
(2) full of care.  
(3) callous.  
(4) careless.

174. The passive form of the sentence, "Do not beat anybody" is
(1) Let nobody be beaten by you.  
(2) You shall not beat anybody.  
(3) Do not be beaten by anybody.  
(4) Nobody is beaten by you.

175. He was pushed to the wall and so he had to resign the membership of the party.

The sentence implies that he was
(1) in the wall.  
(2) pinned to the wall.  
(3) in a happy position.  
(4) confined to a cell.

176. "Sudheer is the last person I'd trust with a secret" means
(1) Sudheer is the most suitable person to share a secret with.  
(2) Sudheer is the least suitable man to share a secret with.  
(3) Sudheer is not an unreliable person.  
(4) Sudheer is a troubleshooter.

177. I don't like to play second fiddle to anyone.  
The speaker does not want to
(1) play a supporting role.  
(2) play the lead role.  
(3) play others' fiddles.  
(4) borrow anybody else's fiddles.

Fill in the blank with the appropriate phrase/verb/preposition:

178. It's time you put pen _______ paper and replied to the CEO's letter.

(1) to  
(2) on  
(3) and  
(4) at

28
179. Doesn't he ______ his father? (1) take back (2) take after (3) take up (4) take in

180. He did not know the answer. ________ (1) Neither did I (2) Either did I (3) Neither have I (4) Either have I

181. I'm sorry he disobeyed instructions. I'll take him ______ when he gets back. (1) after (2) amiss (3) apart (4) back

182. Wage increase must be commensurate with the pressures of ______. (1) inflation (2) depression (3) deflation (4) bureaucratisation

183. The company is forging ______ with its plans for expansion. (1) forward (2) ahead (3) on (4) through

184. In the end, it all ______ a question of trust. (1) gets round to (2) adds up to (3) feels up to (4) comes down to

185. Despite our disagreements, we have been able to ______ an accord. (1) reach (2) locate (3) find (4) strike

PART - 4

Read the following passage and answer questions 186 – 190:

Museums must make their collections accessible. In the past, this simply meant packing them into display cases, often with wordy labels that made little concession to the lay person. Nowadays, accessibility should demand more than this. Displays can be lively and interesting, making the best use of theatrical or architectural techniques to capture the visitor's attention and perhaps stimulate emotional response. But museums should be about more than their displays. They should make their collection accessible to the widest possible community. The provision of loan boxes of objects for class teachers is one known example of this, and recently this principle has been extended by some museums so that similar material is made available for use in treating elderly people who are losing their memory.

Museums concern themselves with 'artifacts and specimens' – not replicas. They exist to facilitate an encounter with authenticity. They present items that actually existed - were used - had meaning - at some historical time. This is a great strength and is what distinguishes them from heritage centres and theme parks, books and C.D. ROMs. Museums which rise to the challenge, which this distinction implies, and provide exciting and accessible displays, catalogues and outreach programmes, will find that their apparent competitors in 'virtual history' are in fact their allies, stimulating an appetite for the 'real thing' that museums are uniquely placed to satisfy.

186. According to the passage, museums must make their collections accessible to ______.
   (1) lay persons. (2) buyers. (3) researchers. (4) general public.
187. “But museums should be about more than their displays.” This statement means:

(1) They should go beyond their visual appeal.
(2) They should have more space for their collections.
(3) They should have wordy labels.
(4) They should have more displays.

188. Museums are different from heritage centres, theme parks, books and CD-ROMs because they deal with

(1) exciting objects.
(2) replicas.
(3) original objects.
(4) modern objects.

189. According to the passage, the “provision of loan boxes of objects” helps museums

(1) become popular
(2) serve society
(3) get publicity
(4) make objects accessible to more people

190. The “real thing” refers to

(1) authentic displays.
(2) catalogues.
(3) outreach programmes.
(4) virtual displays.

Read the following passage and answer the questions 191 – 195:

A stamp is, to many people, just a slip of paper that takes a letter from one town or country to another. They can’t understand why stamp collectors find so much pleasure in collecting them and how we find time to indulge in our hobby. To them it seems a waste of time, effort and money. But, they do not realise that many find the effort worthwhile and many who, if they did not spend their time collecting stamps, would spend it less profitably. In our leisure hours what better occupation is there to keep us out of mischief than that of collecting stamps? An album, a packet of hinges, a new supply of stamps, and the time passes swiftly. Stamp-collecting has no limits and a collection never has an end; countries are always issuing new stamps to celebrate coronations, great events, anniversaries and deaths. And the fascination of collecting is in obtaining these stamps before one’s rivals. Every sphere of stamp collecting has its fascination – receiving letters from distant countries and discovering old stamps in the leaves of dusty old books. A stamp itself has a fascination all its own. Gazing at its little picture we are transported to the wilds of Congo, the homes of the Arabs, and the endless tracks of the Sahara desert. There is a history in a stamp. The ancient Roman Empire and the Constitution of America, India’s Independence and the Allied Victory, are all conveyed to our mind’s eye through stamps. We see famous men – printers, writers, scientists, soldiers, politicians – and famous incidents. Stamps, so small and minute, contain knowledge that is vast and important.

191. Stamps take us through

(1) albums.
(2) old books.
(3) history.
(4) dusty books.

192. Stamp collection profits one to

(1) kill time.
(2) keep out of mischief.
(3) get fascinated with pictures.
(4) become complacent.
193. A stamp has (1) an inherent fascination. (2) only official value. (3) no fascination at all. (4) no historical value.

194. The journey of a stamp is into (1) the past. (2) the world of futile fantasy. (3) the world of savagery. (4) the mazes of the future.

195. The passage is a contemplation on (1) stamps and their ignominious history. (2) the usefulness of collecting stamps. (3) the competition in collecting stamps. (4) stamp vendors.

Read the following passage and answer questions 196 – 200:

How do you understand multiple intelligences? In 1983, Howard Gardner, a Harvard University Professor, developed a theory called Multiple Intelligences. In his book Frames of Mind, he outlines seven intelligences that he feels are possessed by everyone: visual/spatial, verbal/linguistic, musical/rhythm, logic/math, body/kinesthetic, interpersonal and intrapersonal. In 1996, he added an eighth intelligence: naturalistic. In short, if you have ever done things that come easily for intelligences that is well developed. On the other hand, if you have tried to do things that are very difficult to master or understand, one of your less developed intelligences.

If your musical/rhythm intelligence may be understanding poetry, your verbal / linguistic intelligence may not be as well developed. This does not mean that you will never be able to write poetry: it simply means that you have not fully developed your skills in this area.

196. How many intelligences does Gardner speak about? (1) Eight (2) Seven (3) Multiple (4) Innumerable

197. Inability to perform a certain task indicates lack of (1) spatial intelligence. (2) task-related intelligence. (3) naturalistic intelligence. (4) interpersonal intelligence.

198. What does "Kinesthetic" mean? (1) Dynamic (2) Sensory (3) Flexible (4) Musical

199. What type of intelligence do people who can think in pictures have? (1) Musical (2) Naturalistic (3) Linguistic (4) Visual

200. What does trouble in understanding poetry mean? (1) You are not a master of vocabulary. (2) You failed to visualise a picture. (3) You don’t have kinesthetic intelligence. (4) You have not developed this special skill.