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:

(a) Mark choice (1) if the statement I alone is sufficient to answer the question.

(b) Mark choice (2) if the statement II alone is sufficient to answer the question.

(c) Mark choice (3) if both the statements I and II are sufficient to answer the question but neither statement alone is sufficient.

(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) तालिका 1 में 20 के संख्या के लिए डेटा के रूप में दो दावे व्यक्त किए गए हैं। इन दो दावों को समझने के लिए I और II दोनों के साथ

(a) इन दो दावों की सही जानकारी के लिए डेटा के रूप में दो दावे व्यक्त किए गए हैं।

(b) इन दो दावों की सही जानकारी के लिए डेटा के रूप में दो दावे व्यक्त किए गए हैं।

(c) इन दो दावों की सही जानकारी के लिए डेटा के रूप में दो दावे व्यक्त किए गए हैं।

(d) इन दो दावों की सही जानकारी के लिए डेटा के रूप में दो दावे व्यक्त किए गए हैं।
1. With how many zeroes does the number \( a = 16! \) end?
   \( a = 16! \) ఎంత జింపలు ఉన్నా? 
   I. \( 5^3 \mid a, \ 5^4 \nmid a \)
   II. \( a \) is an even number.
       \( a \) ఎక్కడ సమదూర్ధ.

2. Is the quadrilateral \( ABCD \) a rectangle?
   చతురస్రం \( ABCD \) ఎంత చతురస్సు? 
   I. \( AB = CD, \ AD = BC \)
   II. \( AC = BD \)

3. If \( P, A, B \) are three points on a circle, what is \( \angle APB \)?
   మరియు \( P, A, B \) ఎంత విందులు వైపు విందులు \( \angle APB \) ఎంత? 
   I. \( AB \) is the diameter of the circle.
       \( AB \) దీర్ఘాంశం వైపు 
   II. The sum of the angles of \( \triangle APB \) is 180°
       \( \triangle APB \) నకు వైపు బాగా 180°

4. Is the number \( n \) divisible by 2?
   \( n \), 2 ఎంత బాగా రా బాగా ఉంటా? 
   I. The sum of the digits is divisible by 2.
       ఎన్నిక ఎంత బాగా రా బాగా ఉంటా 
   II. The digit in the units place is divisible by 2.
       ఒంట ఎంత బాగా రా బాగా ఉంటా.

5. Are the roots of \( ax^2 + bx + c = 0 \) (\( a \neq 0 \)) real?
   \( ax^2 + bx + c = 0 \) (\( a \neq 0 \)) ఎంత బాగా రా బాగా ఉంటా?
   I. \( 4a + b = 0 \)
   II. \( c = 5a \)

6. What is the area of the rectangle \( ABCD \)?
   చతురస్రం \( ABCD \) వైపు వైపు?
   I. \( E \) is the midpoint of \( AB \).
       \( AB \) ఎంత బాగా రా బాగా ఉంటా 
   II. Area of the \( \triangle CDE \) is 50 cm².
       \( \triangle CDE \) వైపు వైపు 50 సెమీ²
7. What are the numbers a and b?

I. a and b are relatively prime.

II. L.C.M of a, b is 2550.

8. What is the rate of simple interest on a loan of ₹ 20,000?

I. ₹ 23,000 is to be paid at the end of the first year.

II. There is a penal interest of 10% if the loan is not paid at the end of the first year.

9. Suppose f(x) is a polynomial. Is x - 1 a factor of f (x^2 + 7)?

I. (x - 7) | f(x)

II. (x - 11) | f(x - 3)

10. What is the value of xy?

I. x^2 = 9

II. y = 0

11. Are the triangles ΔABE and ΔCDE given below congruent?

I. AB || CD

II. ∠AEB = ∠CED

12. If 0 < (x, y), then what is the value of x + y?

I. x ≠ y

II. x^8 + y = y^8 + x

13. Is 525 × k a perfect square?

I. 21|k

II. k = 21
14. If \( n(A) \) denotes the number of elements in the set \( A \), then what is \( n(A \cup B) \)?
I. \( n(A) = 35 \)
II. \( n(B) = 28 \)

15. What is the value of the integer \( n \geq 0 \)?
I. \( 25^n \) is odd.
II. \( 30^n \) is odd.

16. For the integers \( a, b \) and \( c \) with \( a = bc \), is \( a > b \)?
I. \( |a| = |b| \)
II. \( c^2 = 9 \)

17. What is \( x_1 + x_2 + x_3 + x_4 + x_5 \)?
I. \( x_5 = 20 \)
II. \( x_1, x_2, x_3, x_4, x_5 \) are in arithmetic progression.

18. What is the average of \( a - 3, b + 4, c - 5 \) and \( 6 \)?
I. \( a, b, c \) are positive integers.
II. \( a + b + c = 100 \)

19. Is \( \frac{n}{18} \) an integer?
I. \( 6 \) \( \mid n \)
II. \( 9 \nmid n \)

20. Is \( \triangle ABC \) scalene?
I. \( AB \neq BC \)
II. \( \angle BAC \neq \angle BCA \)
(ii) **Problem Solving**

**Sequence and Series**

Note: In each of the questions numbered 21 to 30, 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. \[2, 26, 242, \_\]
   
   (1) 546  (2) 956  (3) 1266  (4) 2186

22. \[\frac{\frac{2}{3}, \frac{8}{9}, \frac{26}{27}, \frac{80}{81}}{}\]
   
   (1) \(\frac{242}{243}\)  (2) \(\frac{322}{323}\)  (3) \(\frac{542}{543}\)  (4) \(\frac{722}{723}\)

23. \[3Z2A, 5X5C, 7V8E, \_\]
   
   (1) 9S10G  (2) 10T12G  (3) 10S12G  (4) 9T11G

24. \[Z7A, Y6B, X5C, \_\]
   
   (1) V3C  (2) V4C  (3) V4D  (4) V5D

25. \[\sqrt{1 + \sqrt{15}}, \sqrt{3 + \sqrt{13}}, \_\]
   
   (1) \(\sqrt{4 + \sqrt{10}}\)  (2) \(\sqrt{4 + \sqrt{11}}\)  (3) \(\sqrt{5 + \sqrt{7}}\)  (4) \(\sqrt{5 + \sqrt{11}}\)

26. **UGX : AND :: QLN :**
   
   (1) WRT  (2) WST  (3) WRS  (4) VRT

27. **: HDGF :: FILM : ADGH**
   
   (1) LIKM  (2) MILK  (3) KLIM  (4) IKLM

28. **KEGV, JDFU, ICET, \_\**
   
   (1) HBDC  (2) HBDF  (3) HBDS  (4) HBDU

29. **DIVIDEND : CHUHCDMC :: KEYBOARD :**
   
   (1) JDXANZQC  (2) JDXNZAQC  (3) JDXANZRC  (4) JDXANZPC

30. \[13, 28, 49, 76, \_\]
   
   (1) 89  (2) 99  (3) 109  (4) 119
Note: In questions numbered 31 to 35 pick the odd thing out:

31. (1) 87    (2) 77
    (3) 67    (4) 57

32. (1) $x^2 + 4x + 4$    (2) $x^2 - 2x + 1$
    (3) $x^2 + 2x + 1$    (4) $x^2 + 2x + 2$

33. (1) 1993 AD    (2) 1994 AD
    (3) సం. 1993    (4) సం. 1994

34. (1) Standard deviation    (2) Variance
    (3) ఎంపిక పరిమితి    (4) సంప్రదాయము

35. (1) 26    (2) 28
    (3) 126    (4) 343

P.T.O.
### Question 36
Each of the questions from 36 to 45 follow a definite pattern. Observe the same and fill in the blanks with suitable answers.

- **36.** 4, 7, 12, 19, 28, 39, __________, 67
  - (1) 47
  - (2) 49
  - (3) 52
  - (4) 55

- **37.** \( \frac{15}{3} \), \( \frac{24}{5} \), \( \frac{35}{7} \), __________, \( \frac{63}{11} \)
  - (1) \( \frac{48}{9} \)
  - (2) \( \frac{46}{9} \)
  - (3) \( \frac{44}{9} \)
  - (4) \( \frac{42}{9} \)

- **38.** 0001, 0010, 0011, 0100, __________, 0110
  - (1) 0011
  - (2) 0101
  - (3) 0111
  - (4) 1010

- **39.** \( \frac{1}{2} \), \( \frac{1}{6} \), \( \frac{1}{31} \), __________, \( \frac{4}{391} \)
  - (1) \( \frac{1}{36} \)
  - (2) \( \frac{1}{37} \)
  - (3) \( \frac{1}{38} \)
  - (4) \( \frac{1}{39} \)

- **40.** \((x + y), (x^2 - y^2), (x + y)^2(x - y), (x^2 - y^2)^2, (x + y)^3(x - y)^3, __________\)
  - (1) \((x - y)^3(x + y)^2\)
  - (2) \((x^2 - y^2)\)
  - (3) \((x^2 - y^2)^3\)
  - (4) \((x^2 - y^2)^2\)

- **41.** \( \frac{5}{9}, \frac{10}{28}, \frac{17}{65}, \frac{26}{126}, \frac{37}{217} \)
  - (1) \( \frac{41}{344} \)
  - (2) \( \frac{45}{344} \)
  - (3) \( \frac{49}{344} \)
  - (4) \( \frac{50}{344} \)

- **42.** \( \left\{ \frac{1}{5}, \frac{1}{7}, \frac{1}{9} \right\}, \left\{ \frac{1}{11}, \frac{1}{14}, \frac{1}{17} \right\}, \left\{ \frac{1}{19}, \frac{1}{23} \right\} \)
  - (1) \( \frac{1}{24} \)
  - (2) \( \frac{1}{26} \)
  - (3) \( \frac{1}{27} \)
  - (4) \( \frac{1}{29} \)

- **43.** 9, 36, 100, 225, __________, 784
  - (1) 365
  - (2) 441
  - (3) 498
  - (4) 526

- **44.** W4C, T9F, Q16L, __________
  - (1) P25L
  - (2) N25L
  - (3) P27L
  - (4) M25L

- **45.** \( 11 \frac{1}{9}, 12 \frac{1}{2}, 14 \frac{2}{7}, 16 \frac{2}{3}, __________ \)
  - (1) 18 \( \frac{1}{3} \)
  - (2) 19
  - (3) 20
  - (4) \( 20 \frac{3}{5} \)
A Mobile manufacturing company makes three models I, II and III of mobile phones. The production (in thousands) during the years 2009 through 2013 is given below:

<table>
<thead>
<tr>
<th>Year/Model</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>17</td>
<td>22</td>
<td>26</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td>II</td>
<td>22</td>
<td>20</td>
<td>24</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>III</td>
<td>25</td>
<td>27</td>
<td>30</td>
<td>32</td>
<td>35</td>
</tr>
</tbody>
</table>

Answer the questions from 46 to 48 using the table.

46. What is the percentage increase in the production of Model II mobiles in the year 2013 when compared to the year 2010?
   - (1) 10%
   - (2) 15%
   - (3) 30%
   - (4) 50%

47. If the cost of production of mobiles of I, II and III models during the year 2011 are respectively ₹ 2,250, ₹ 2,750 and ₹ 5,250 per unit, then the total cost of production (in crores of rupees) during that year is
   - (1) 2.82
   - (2) 28.2
   - (3) 282
   - (4) 0.282

48. If the profits per unit of three models I, II and III of mobiles during the year 2013 are ₹ 550, ₹ 650 and ₹ 1,000 respectively, then the total profit (in lacs of rupees) during the year 2013 is
   - (1) 721
   - (2) 7210
   - (3) 72.1
   - (4) 7.21
The following Pie diagram illustrates the yearly expenditure of an educational institution towards six heads: A-Staff salaries, B-Maintenance, C-Laboratories, D-Learner activities, E-Examinations and F-Miscellaneous. Using the data given answer the questions from 49 to 53.

49. The sectorial angle corresponding to A is
   (1) 105°  (2) 120°  (3) 126°  (4) 145°

50. The total sectorial angle corresponding the heads C, D and E is
   (1) 125°  (2) 108°  (3) 120°  (4) 90°

51. If in a year the expenditure under B is 30 lac more than the expenditure under E, then the total expenditure (in lacs) for that year is
   (1) 200  (2) 185  (3) 175  (4) 150

52. If the annual expenditure is 200 lacs, then the expenditure towards F (in lacs) is
   (1) 25  (2) 30  (3) 32  (4) 35

53. In a year total expenditure incurred towards E is 20 lacs of rupees. Then the expenditure towards D (in lacs) is
   (1) 30  (2) 35  (3) 45  (4) 40
Note: Using the data given in the above Venn diagram answer Q. 54 and Q. 55.

54. The number of elements in A∪(B∩C) is
   A∪(B∩C) యొక్క ఎంపికల సంఖ్య
   (1) 46     (2) 41     (3) 32     (4) 25

55. The number of elements in C – (A∪B) =
   C – (A∪B) యొక్క ఎంపికల సంఖ్య =
   (1) 27     (2) 24     (3) 19     (4) 18

(c) Coding and Decoding Problems
(Marks: 10)
(చేసే శిపించి అంశాంశము: 10)

The letters in the English alphabet are coded in the reverse order. For example, A is
coded as Z, B is coded as Y, ....

Following this code answer the questions from 56 to 60.

56. LIMIT is coded as
   LIMIT సంఖ్యాలు
   (1) KNRNC     (2) ORNRG     (3) JKOKG     (4) OSTSG

57. The code word of POCKET is
   POCKET సంఖ్యాలు
   (1) KLXPUC     (2) KLXUPG     (3) KLXPG     (4) KLXPVG

58. Which group of letters is coded as CODE?
   ఇది ఎంపికల సంఖ్యాదారం యొక్క ఎంపికల సంఖ్యా?
   (1) XLWU     (2) XLWV     (3) XLWT     (4) XLWR

59. Which group of letters is coded as HAPPY?
   ఇది ఎంపికల సంఖ్యాదారం యొక్క ఎంపికల సంఖ్యా?
   (1) SZKKD     (2) SZKKB     (3) SZKKB     (4) SZKKE

60. The code word for GROUP is
   GROUP సంఖ్యాలు
   (1) TILFR     (2) TILFN     (3) TILFM     (4) TILFK

P.T.O.
61. If TEACHER is coded as SEABGEQ, then the code for STUDENT is
   TEACHER ↔ SEABGEQ ↔ कक्षा तिलके STUDENT ↔ कक्षा
   (1) RSVDFMR (2) RSUCEMR (3) RSUCEMS (4) RSVDFMS

62. If BOWLER is coded as CPXMFS, then BATSMAN is coded as
   BOWLER ↔ CPXMFS ↔ कक्षा लिङ्के BATSMAN ↔ कक्षा
   (1) CBVUNC0 (2) CBVTNBO (3) CBUTNBO (4) CBVTNCO

63. If the code word for STATISTICS is UVCVKUVKEU, then the code word for
   COMMERCE is
   STATISTICS ↔ कक्षा लिङ्के UVCVKUVKEU ↔ कक्षा COMMERCE ↔ कक्षा
   (1) EOOGATEG (2) EPOOHTFG (3) EROOHTEG (4) EOOGTGE

64. If MOUSE is coded as LNTRD, then the code for COMPUTER is
   MOUSE ↔ LNTRD ↔ कक्षा COMPUTER ↔ कक्षा
   (1) BMNOTRDQ (2) BNLOTSQD (3) BMNOTSDQ (4) BMMOTSQD

65. If TRIANGLE is coded as RGPLYEIC the code for RHOMBUS is
   TRIANGLE ↔ RGPLYEIC ↔ कक्षा RHOMBUS ↔ कक्षा
   (1) PGMKZSQ (2) PFMKZSQ (3) PGNKZSQ (4) PFNKZSQ

66. If today is Sunday what day of the week will it be 63 days later?
   (1) Sunday (2) Monday (3) Tuesday (4) Wednesday

67. A clock is set at 10.00 a.m. If clock loses 3 minutes every two hours, what is the correct
   time when the clock shows 4.00 p.m. on the same day?
   (1) 4.03 p.m. (2) 4.06 p.m. (3) 4.09 p.m. (4) 4.12 p.m.

68. The angle between the minutes hand and hours hand when the time shown in the clock is 6.20 pm is
   6.20 दोम दोम दोम दोम दोम दोम दोम दोम दोम दोम दोम दोम
   (1) 55° (2) 60° (3) 65° (4) 70°

69. A big joint family has grandfather, father, mother, four sons and their wives; and two
dughters of each son. How many female members are there in the family?
   एक बड़ी जितेजी जितेजी जितेजी जितेजी जितेजी जितेजी जितेजी
   (1) 13 (2) 14 (3) 15 (4) 16
70. As per the time table the local train leaves the station at regular intervals of 45 minutes. Reaching the station a person learnt that the train left 10 minutes ago and the next train is at 10.15 a.m. What time did the person arrive at the station?

- Option 1: 9.25 a.m.
- Option 2: 9.30 a.m.
- Option 3: 9.35 a.m.
- Option 4: 9.40 a.m.

71. A car travels from A to B at a speed of 24 kmph and returns from B to A at a speed of 40 kmph. What is the average speed of the car for the whole journey (in kmph)?

- Option 1: 36 kmph
- Option 2: 34 kmph
- Option 3: 32 kmph
- Option 4: 30 kmph

72. In a Queue of 51, the positions of A and B are tenth and thirty fifth respectively. If C is in between A and B and equidistant from them, how many are there (without counting C) in front of C in the queue?

- Option 1: 26
- Option 2: 27
- Option 3: 28
- Option 4: 29

73. A, B, C, D, and E sit on a bench in a row such that C sits between D and E; D sits between A and C while E sits between C and B. Their seating arrangement is A, B, C, D, E or B, C, E, D, A; C, A, E, D, B; A, E, C, D, B. Which one of these is correct?

- Option 1: A – C – D – E – B
- Option 2: A – D – C – E – B
- Option 3: A – D – E – C – B
- Option 4: A – E – C – D – B

74. If \( \frac{a}{b} \neq 0 \) and \( a \times b = \frac{1}{ab} - 1 \), then \( \sum_{k=1}^{2015} \left( \frac{1}{k^2} \times k \right) = \)

- Option 1: \( 1008 \times 2015 \)
- Option 2: \( 1007 \times 2015 \)
- Option 3: \( 1006 \times 2015 \)
- Option 4: 0

75. If \( a \circ b = \sqrt{ab} + \frac{1}{\sqrt{ab}} \) and \( a \Delta b = \sqrt{ab} - \frac{1}{\sqrt{ab}} \), then \( \frac{4 \circ 9 + 4\Delta 9}{4 \circ 9 - 4\Delta 9} = \)

- Option 1: \( \frac{1}{36} \)
- Option 2: \( \frac{1}{18} \)
- Option 3: 18
- Option 4: 36

13

P.T.O.
Questions : 75
Marks : 75

(i) Arithmetical Ability

76. If \( m = 7^1 \cdot 5^2 \cdot 3^4 \cdot 2^8 \), then the greatest integer value of \( k \) such that \( 21^k \) divides \( m \) is
\( m = 7^1 \cdot 5^2 \cdot 3^4 \cdot 2^8 \) and \( 21^k \) divides \( m \) \( \Rightarrow \) \( k \) divides \( \text{H.C.M. of} \ 7, \ 5, \ 3, \ 2 \)
(1) 1 \hspace{1cm} (2) 2 \hspace{1cm} (3) 4 \hspace{1cm} (4) 8

77. If \( a^x = b^y = c^z = 0 \) and \( b^2 = ac \), then the progression in which \( x, y, z \) are is
\( a^x = b^y = c^z = 0 \) \( \Rightarrow \) \( a^x, b^y, c^z \) are in a geometric progression
(1) an arithmetic progression \hspace{2cm} (2) a geometric progression
(3) a harmonic progression \hspace{2cm} (4) an arithmetico-geometric progression

78. Three numbers are in the ratio \( 1 : 2 : 3 \) and the sum of the cubes of them is 36. The smallest number among them is
\( 1 : 2 : 3 \) \( \Rightarrow \) \( x, 2x, 3x \) \( \Rightarrow \) \( x^3 + 8x^3 + 27x^3 = 36 \) \( \Rightarrow \) \( 36x^3 = 36 \)
(1) 1 \hspace{1cm} (2) 2 \hspace{1cm} (3) 3 \hspace{1cm} (4) 4

79. The earnings of A, B, C are in the ratio \( 7 : 9 : 12 \) and their expenditures are in the ratio \( 8 : 9 : 15 \). If A saves 25% of his earnings, then the ratio of their savings is
A, B, C \( \Rightarrow \) \( 7x, 9x, 12x \) \( \Rightarrow \) \( 8y, 9y, 15y \) \( \Rightarrow \) \( \frac{7x-8y}{9x-9y} = \frac{12x-15y}{9y} \)
(1) 46 : 99 : 59 \hspace{1cm} (2) 56 : 99 : 69 \hspace{1cm} (3) 69 : 56 : 99 \hspace{1cm} (4) 59 : 46 : 99

80. If \( x = \frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}} \) and \( xy = 1 \) then \( x + y = \)
\( x = \frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}}, xy = 1 \) \( \Rightarrow \) \( x + y = \)
(1) 6 \hspace{1cm} (2) 7 \hspace{1cm} (3) 8 \hspace{1cm} (4) 9

81. If \( a \neq b, a^2 + b^2 \neq 0 \), then
\( \frac{(a-b)\sqrt{a-b}}{(a+b)\sqrt{a+b}} = \)
\( a \neq b, a^2 + b^2 \neq 0 \) \( \Rightarrow \) \( \frac{(a-b)\sqrt{a-b}}{(a+b)\sqrt{a+b}} = \)
(1) \( 1 - \frac{2\sqrt{ab}}{a+b} \) \hspace{1cm} (2) \( 1 + \frac{2\sqrt{ab}}{a+b} \) \hspace{1cm} (3) \( 1 + 2\sqrt{\frac{1}{a} + \frac{1}{b}} \) \hspace{1cm} (4) \( 1 - 2\sqrt{\frac{1}{a} + \frac{1}{b}} \)
82. The least positive integer m to be added to 3096 so that their sum is divisible by 39 is 3096. Therefore, 3096 + m must be divisible by 39. The options given are (1) 2, (2) 12, (3) 24, and (4) 32. The correct answer is (3) 24.

83. If a number k is of the form 18m + 7 for some integer m then the remainder when k is divided by 6 is given by \( \frac{k}{6} \mod 6 \). The options are (1) 5, (2) 3, (3) 2, and (4) 1. The correct answer is (2) 3.

84. The largest number m such that the numbers 947, 639 and 1051 leave the same remainder when divided by m is found by calculating the least common multiple (LCM) of the differences between the numbers. The differences are 947 - 639 = 308, 639 - 1051 = -412, and 1051 - 947 = 104. The LCM of these differences is 104, and thus the number m is 104. The options are (1) 3, (2) 4, (3) 7, and (4) 11. The correct answer is (1) 3.

85. The number of pairs of positive integers a and b such that \( a + b = 594 \) and \( \gcd(a, b) = 27 \) is found by dividing 594 by 27 to get 22 pairs. The options are (1) 4, (2) 5, (3) 6, and (4) 7. The correct answer is (4) 7.

86. Taking \( \frac{1}{6.198} = 0.16134 \), the value of \( \frac{1}{0.0006198} \) is calculated by dividing 1 by 0.0006198, which gives approximately 1613.4. The options are (1) 0.016134, (2) 0.16134, (3) 16134, and (4) 1613.4. The correct answer is (4) 1613.4.

87. The rational number r that becomes \( \frac{1}{2} \) when 1 is subtracted from the numerator and becomes \( \frac{3}{5} \) when 1 is subtracted from the denominator is found by setting up the equation \( \frac{n-1}{d-1} = \frac{1}{2} \) and \( \frac{n-1}{d-1} = \frac{3}{5} \). Solving these equations gives \( n = 3 \) and \( d = 5 \). The options are (1) \( \frac{17}{32} \), (2) \( \frac{15}{26} \), (3) \( \frac{13}{24} \), and (4) \( \frac{9}{16} \). The correct answer is (2) \( \frac{15}{26} \).

88. The descending order of the fractions \( \frac{8}{13}, \frac{5}{12}, \frac{9}{11}, \frac{7}{15} \) is found by comparing the fractions. The options are (1) \( \frac{9}{11}, \frac{8}{13}, \frac{5}{12}, \frac{7}{15} \), (2) \( \frac{9}{11}, \frac{7}{15}, \frac{8}{13}, \frac{5}{12} \), (3) \( \frac{5}{12}, \frac{7}{15}, \frac{8}{13}, \frac{9}{11} \), and (4) \( \frac{5}{12}, \frac{8}{13}, \frac{7}{15}, \frac{9}{11} \). The correct answer is (3) \( \frac{5}{12}, \frac{7}{15}, \frac{8}{13}, \frac{9}{11} \).

89. \( 1.57777 \ldots = \) is found by recognizing the repeating decimal as \( 1 + \frac{7}{45} \). The options are (1) \( \frac{69}{45} \), (2) \( \frac{71}{45} \), (3) \( \frac{74}{45} \), and (4) \( \frac{77}{45} \). The correct answer is (4) \( \frac{77}{45} \).
90. In a fraction if the numerator is increased by 20% and the denominator is decreased by 20% we get new fraction $\frac{3}{7}$. The sum of the new fraction and the original fraction is

\[ \frac{2}{7} + \frac{4}{7} + \frac{5}{7} + \frac{6}{7} \]

91. If 25% of a number is 25 more than 25% of 500, then the number is

\[ \frac{5}{40} \times 25 \times 500 - \frac{5}{40} \times 25 = 500 \]

92. By selling an item for ₹189, a trader gets a profit of 12.5%. The cost price (in rupees) of the item is

\[ \frac{189}{1.125} \]

93. The cost price of an item is ₹250. Its marked price is ₹360. The maximum possible discount that can be given so that a profit of 20% is made is

\[ \frac{360 - 250}{2.2} \times 100 \]

94. In a partnership, A invests $\frac{1}{4}$ of the capital for $\frac{1}{4}$ of the time; B invests $\frac{1}{5}$ of the capital for $\frac{1}{2}$ of the time while C invests the rest of the capital for the whole time. The share of A (in thousands of rupees) in the profit of ₹2.28 lakhs is

\[ \frac{1}{4} \times \frac{1}{4} \times 2.28 = 0.057 \]

95. In a joint business, A invests ₹20,000 for six months while B invested certain amount for the whole year. In the year-end profit of ₹9,000 the share of A is ₹6,000. The amount (in rupees) invested by B is

\[ \frac{9,000 - 6,000}{20,000 - 12,000} \times 20,000 \]
96. Pipes A, B, C can fill a tank individually in 2 hours, 3 hours and 4 hours respectively. All the three are opened for 15 minutes and pipe C is closed. The time (in minutes) required further to fill the tank is

\[ \frac{1}{2} + \frac{1}{3} + \frac{1}{4} = \frac{11}{12} \text{ hours} = 55 \text{ minutes} \]

(1) 48 (2) 52 1/2 (3) 54 (4) 70

97. Pipes A and B can fill a tank in 9 minutes and 12 minutes respectively. A is opened and after sometime B is opened; and the tank is full in 4 minutes. The time difference (in minutes) between the opening of A and B is

\[ \frac{1}{9} + \frac{1}{12} - \frac{1}{4} = \frac{1}{36} \text{ hours} = 1 \text{ minute} \]

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

98. Three trains A, B and C moving at speeds \( s_1 \), \( s_2 \) and \( s_3 \) respectively take times \( t_1 \), \( t_2 \) and \( t_3 \) respectively to cover a distance of \( x \) kms. If \( t_1 : t_2 : t_3 = 20 : 15 : 12 \), then \( s_1 : s_2 : s_3 = \ldots \)

\[ \frac{1}{2} : \frac{1}{3} : \frac{1}{4} \]

(1) 2 : 3 : 4 (2) 3 : 4 : 5 (3) 4 : 5 : 6 (4) 5 : 6 : 7

99. The time (in seconds) taken by a train of 240 metres long travelling at 70 kmph to cross another train of length 110 metres standing on a parallel track is

\[ \frac{240 + 110}{70} \times 3600 \text{ seconds} \]

(1) 20 (2) 18 (3) 17 (4) 16

100. 10 men and 15 women can complete a work in 6 days; and 12 men and 27 women can complete the same work in 4 days. The number of days required for 2 men and 12 women to complete the same work is

\[ \frac{10 	imes 6}{15} = 4 \text{ days} \]

(1) 8 (2) 9 (3) 10 (4) 12

101. A and B can do a work in 8 hours; B and C can complete the same work in 6 hours while C and A require 12 hours to complete that work. The time required by C alone to complete that work is

\[ \frac{1}{8} + \frac{1}{6} - \frac{1}{12} = \frac{1}{4} \text{ hours} \]

(1) 16 hours (2) 9 hours 36 minutes (3) 48 hours (4) 10 hours 30 minutes
102. The area of a square $S$ is equal to the area of the rectangle of sides 56 metres and 14 metres. The length (in metres) of diagonal of $S$ is

\[
\begin{align*}
(1) & \quad 42 \\
(2) & \quad 28\sqrt{2} \\
(3) & \quad 14\sqrt{2} \\
(4) & \quad 12\sqrt{2}
\end{align*}
\]

103. The area of a rhombus is 144 square units. If one of its diagonals is 18 units then the length of the other diagonal (in units) is

\[
\begin{align*}
(1) & \quad 9 \\
(2) & \quad 12 \\
(3) & \quad 14 \\
(4) & \quad 16
\end{align*}
\]

104. A brick measures 20 cms $\times$ 10 cms $\times$ 7.5 cms. The number of bricks required to build a wall of dimensions 25 m $\times$ 2 m $\times$ 0.75 m is

\[
\begin{align*}
(1) & \quad 24000 \\
(2) & \quad 25000 \\
(3) & \quad 26000 \\
(4) & \quad 27000
\end{align*}
\]

105. The volume of a cone is $108\pi$ cubic cms and its height is 9 cms. The base radius (in cms) of the cone is

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

106. A rectangular plot $R$ of perimeter 46 metres has area 120 square metres. The area of the square whose side is equal to the diagonal of $R$, is

\[
\begin{align*}
(1) & \quad 361\text{ sq. m} \\
(2) & \quad 289\text{ sq. m} \\
(3) & \quad 225\text{ sq. m} \\
(4) & \quad 169\text{ sq. m}
\end{align*}
\]

107. A wheel makes 50 revolutions in covering a distance of 440 metres. The radius (in metres) of the wheel is

\[
\begin{align*}
(1) & \quad 4.2 \\
(2) & \quad 2.8 \\
(3) & \quad 1.4 \\
(4) & \quad 0.7
\end{align*}
\]

108. The ratio of the curved surface area to the total surface area of a right circular cylinder is $1:2$. If its total surface area is 616 sq. cms., then the volume of the cylinder (in cubic cms) is

\[
\begin{align*}
(1) & \quad 1120 \\
(2) & \quad 1080 \\
(3) & \quad 1078 \\
(4) & \quad 1000
\end{align*}
\]

109. If $x > 0$ and $|1-3x| > 4-x$, then

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

110. $(1100101)_2 - (1011011)_2 =

\[
\begin{align*}
(1) & \quad (1010)_2 \\
(2) & \quad (1100)_2 \\
(3) & \quad (1001)_2 \\
(4) & \quad (1101)_2
\end{align*}
\]
48BL-71

(ii) Algebraic and Geometrical Ability

(Marks: 30)

111. For statements \( p \) and \( q \), the tautology among the following is

\[
(1) \ (p \lor q) \rightarrow p \\
(2) \ (p \land q) \rightarrow p \\
(3) \ \sim (p \land q) \rightarrow p \\
(4) \ \sim (p \lor q) \rightarrow p
\]

112. If \( p \) and \( q \) are statements, then the inverse of \( p \rightarrow q \) is

\[
(1) \ q \rightarrow p \\
(2) \ \sim q \rightarrow \sim p \\
(3) \ \sim p \rightarrow \sim q \\
(4) \ \sim p \rightarrow q
\]

113. If

\[
l_k = \left\{ x \in \mathbb{R} : 0 < x < \frac{1}{k} \right\}
\]

for \( k = 1, 2, 3, \ldots \), then

\[
\bigcap_{k=1}^{\infty} l_k = \bigcap_{k=1}^{\infty} l_k
\]

(1) \ \{0\} \\
(2) \ \phi \\
(3) \ \{1\} \\
(4) \ \{x \in \mathbb{R} : 0 < x < 1\}

114. For sets \( A, B \) and \( C \), \( A \setminus (B \cup C) = \)

\[
\bigcap_{k=1}^{\infty} l_k
\]

(1) \ (A - B) \cup (A - C) \\
(2) \ (A \cup B) - C \\
(3) \ (A - B) \cap (A - C) \\
(4) \ A \cup (B - C)

115. If \( f : \mathbb{R} \rightarrow \mathbb{R} \) and \( g : \mathbb{R} \rightarrow \mathbb{R} \) are defined by \( f(x) = 2^x \) and \( g(x) = x^2 \) for each \( x \in \mathbb{R} \), then

\[
\left\{ x \in \mathbb{R} : (f \circ g)(x) = (g \circ f)(x) \right\} =
\]

\[
f : \mathbb{R} \rightarrow \mathbb{R}, \ g : \mathbb{R} \rightarrow \mathbb{R} \text{ such that } x \in \mathbb{R} \text{ if } f(x) = 2^x, \ g(x) = x^2 \\
\text{then } \left\{ x \in \mathbb{R} : (f \circ g)(x) = (g \circ f)(x) \right\} =
\]

(1) \ \mathbb{R} \\
(2) \ \phi \\
(3) \ \{0, 2\} \\
(4) \ \{0\}

116. The length of the line segment intercepted between the axes by the line joining \((6, -4)\) and \((-3, 8)\) is

\[
(6, -4), (-3, 8) \text{ విస్తీర్ణ నుండి విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ విస్తీర్ణ}
\]

(1) \ 3 \\
(2) \ 4 \\
(3) \ 5 \\
(4) \ 6

117. The angle between the lines \( 2x + 3y = 5 \) and \( 2(x - 1) + 3(2 + y) = 6 \) is

\[
2x + 3y = 5, \ 2(x - 1) + 3(2 + y) = 6 \text{ దిశల విభాగం}
\]

(1) \ 0° \\
(2) \ 45° \\
(3) \ 60° \\
(4) \ 90°

118. \[
\frac{2 \tan 30°}{1 + \tan^2 30°} =
\]

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

P.T.O.
119. \[
\left(\frac{\sin 45^\circ + \cos 45^\circ + \tan 45^\circ}{\sin 45^\circ - \cos 45^\circ - \tan 45^\circ}\right)^2 =
\]

\[
1) \quad \frac{1}{2} (2 + \sqrt{2}) \\
2) \quad \frac{1}{2} (2 - \sqrt{2}) \\
3) \quad 3 + 2\sqrt{2} \\
4) \quad 6 + 4\sqrt{2}
\]

120. \[
\frac{1 - \cos \theta}{\sin \theta} + \frac{\sin \theta}{1 - \cos \theta} =
\]

\[
1) \quad 2 \sin \theta \\
2) \quad 2 \cos \theta \\
3) \quad 2 \sec \theta \\
4) \quad 2 \csc \theta
\]

121. In \(\triangle ABC\), \(\angle ABC = 45^\circ\), \(\angle CAB = 30^\circ\) and CD is perpendicular to AB. If CD = 100, then

\[
\Delta ABC \equiv \angle ABC = 45^\circ, \angle CAB = 30^\circ, AB \parallel CD \parallel AB. CD = 100 \text{ cm}, AB =
\]

\[
1) \quad 100(\sqrt{3} + 1) \\
2) \quad 100(\sqrt{3} - 1) \\
3) \quad 50(\sqrt{3} + 1) \\
4) \quad 50(\sqrt{3} - 1)
\]

122. If \(7 + 10x - 5x^2\) has maximum at \(x = \alpha \in \mathbb{R}\), then \(\alpha =
\]

\[
1) \quad 0 \\
2) \quad 1 \\
3) \quad 2 \\
4) \quad 3
\]

123. The progression in which the roots of the equation \(6x^3 - 11x^2 + 6x - 1 = 0\) lie is

\[
\begin{align*}
\text{(1) an arithmetic progression} & & \text{(2) a geometric progression} \\
\text{(3) a harmonic progression} & & \text{(4) a arithmetico-geometric progression}
\end{align*}
\]

124. The quadratic expression that leaves remainders 1, 2 and 4 respectively when divided by \((x - 1), (x - 2)\) and \((x - 3)\) is

\[
\begin{align*}
\text{(1) } & \frac{1}{2}(x^2 + x + 1) \\
\text{(2) } & \frac{1}{2}(x^2 - x + 1) \\
\text{(3) } & \frac{1}{2}(x^2 + x + 2) \\
\text{(4) } & \frac{1}{2}(x^2 - x + 2)
\end{align*}
\]

125. If \(p(x)\) is a polynomial divisible by \((x - 5)\), then a factor of \(p(x^3 - 3)\) is

\[
\begin{align*}
\text{(1) } & x + 2 \\
\text{(2) } & x + 1 \\
\text{(3) } & x - 1 \\
\text{(4) } & x - 2
\end{align*}
\]

126. If \(\frac{xy}{x+y} = \frac{6}{5}\) and \(\frac{xy}{x-y} = 6\), then \((x, y) =
\]

\[
\begin{align*}
\text{(1) } & (2, 3) \\
\text{(2) } & (3, 2) \\
\text{(3) } & (1, 2) \\
\text{(4) } & (2, 1)
\end{align*}
\]
127. The number of solutions of the system \( x - y + z = -6 \), \( x + y - z = 3 \), \( -x + y - z = 6 \) is

\[ \begin{align*}
& (1) \quad 0 \\
& (2) \quad 1 \\
& (3) \quad 3 \\
& (4) \quad \text{Infinite/ Infinite} \end{align*} \]

128. The sum of all the natural numbers between 1 and 100 which are divisible by 7 is

\[ \begin{align*}
& (1) \quad 735 \\
& (2) \quad 730 \\
& (3) \quad 725 \\
& (4) \quad 715 \end{align*} \]

129. \[ \sum_{k=0}^{\infty} \frac{2^k}{3^{k+1}} = \]

\[ \begin{align*}
& (1) \quad 0 \\
& (2) \quad \frac{1}{3} \\
& (3) \quad \frac{2}{3} \\
& (4) \quad 1 \end{align*} \]

130. If the fourth term in the binomial expansion of \( (2x^3 + \frac{1}{x^2})^6 \) is 160, then \( x = \)

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

131. The middle term in the expansion of \( \left( \frac{x^2 - \frac{1}{x}}{x} \right)^8 \) is

\[ \begin{align*}
& (1) \quad -56x \\
& (2) \quad -70x^3 \\
& (3) \quad 70x^4 \\
& (4) \quad -56x^4 \end{align*} \]

132. \( A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix} \Rightarrow A^2 - 4A = \)

\[ \begin{align*}
& (1) \quad 21 \\
& (2) \quad 31 \\
& (3) \quad 41 \\
& (4) \quad 51 \end{align*} \]

133. If \( \det A = 5 \) for a \( 3 \times 3 \) matrix \( A \), then \( \det (5A) = \)

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

134. \[ \lim_{x \to 3} \frac{x - 3}{\sqrt{x - 2} - \sqrt{4 - x}} = \]

\[ \begin{align*}
& (1) \quad 0 \\
& (2) \quad 1 \\
& (3) \quad 2 \\
& (4) \quad 4 \end{align*} \]
135. \[
limit_{x \to \frac{\pi}{2}} \frac{1 - \sin^3 x}{\cos^2 x} =
\]
(1) \(\frac{3}{2}\)  (2) 1  (3) \(\frac{2}{3}\)  (4) \(-1\)

136. In \(\triangle ABC\), \(\angle BAC = 90^\circ\), \(AD \perp BC\), \(AD = 6\) cm and \(BD = 4\) cm. Then \(DC = \triangle ABC \& \quad \angle BAC = 90^\circ\), \(AD \perp BC\), \(AD = 6\) \(\text{cm}\), \(BD = 4\) \(\text{cm}\). \(\text{Then}\ DC =
\]
(1) \(4\) cm \(\text{(in cm)}\)  (2) \(6\) cm \(\text{(in cm)}\)
(3) \(9\) cm \(\text{(in cm)}\)  (4) \(\sqrt{52}\) cm \(\text{(in cm)}\)

137. The vertices A, B, C, D in that order of a quadrilateral lie on a circle. Then \(\angle ABC + \angle ADC =
\]
(1) \(90^\circ\)  (2) \(120^\circ\)  (3) \(135^\circ\)  (4) \(180^\circ\)

138. If a square is inscribed in a circle of radius \(\sqrt{\frac{2015}{2}}\) then area of the square is

\[
\sqrt{\frac{2015}{2}} \text{ cm}^2 \text{ is the area of the square}
\]
(1) \(2014\)  (2) \(2015\)  (3) \(2016\)  (4) \(2017\)

139. For \(\triangle ABC\) with vertices \(A(4, 2), B(6, 5)\) and \(C(1, 4)\) the length of the median through A is

A(4, 2), B(6, 5), C(1, 4) \(\text{and} \angle ABC \leq A \angle BAC \angle CAD \angle CAD\)

(1) \(4\)  (2) \(\frac{1}{2} \sqrt{15}\)  (3) \(\frac{1}{2} \sqrt{13}\)  (4) \(\frac{\sqrt{13}}{2}\)

140. If A \((-3, -3)\), B \((2, -5)\) and C \((-1, -8)\) lie on a line, then \(AB : BC =
\]
A \((-3, -3)\), B \((2, -5)\), C \((-1, -8)\) \(\text{and} \angle BAC \angle CBA \angle ABC \angle ABC\)

(1) \(2 : 3\)  (2) \(\sqrt{2} : \sqrt{3}\)  (3) \(2 \sqrt{2} : 3 \sqrt{3}\)  (4) \(4 : 9\)

22
141. The arithmetic mean of the distribution given below is

<table>
<thead>
<tr>
<th>x</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>1</td>
<td>4</td>
<td>9</td>
<td>16</td>
<td>25</td>
<td>36</td>
<td>49</td>
</tr>
</tbody>
</table>

(1) 3.8  (2) 4.9  (3) 5  (4) 5.6

142. The median of the first sixteen even natural numbers is

(1) 23  (2) 21  (3) 19  (4) 17

143. For \( n \geq 1 \), let \( a_n = k \) where \( k \) is the remainder when \( n \) is divided by 5. Then the mode of the observations \( a_1, a_3, a_8, a_{12}, a_{13}, a_{17}, a_{23} \) is

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

144. The standard deviation of 1, 2, 3, ..., 25 is

1, 2, 3, ..., 25 \( \frac{\sqrt{2}}{2} \) \( \sqrt{13} \) 52 26

(1) 13\( \sqrt{2} \)  (2) 2\( \sqrt{13} \)  (3) 52  (4) 26

145. If \( \sigma^2 \) is the variance of \( x_1, x_2, ..., x_n \), then \( 9\sigma^2 \) is the variance of

(1) \( 4 - 3x_1, 4 - 3x_2, ..., 4 - 3x_n \)
(2) \( 4 + 9x_1, 4 + 9x_2, ..., 4 + 9x_n \)
(3) \( 4 - 9x_1, 4 - 9x_2, ..., 4 - 9x_n \)
(4) \( 4 + 81x_1, 4 + 81x_2, ..., 4 + 81x_n \)

146. The correlation coefficient \( r \) satisfies the inequality

(1) \( |r| > 1 \)  (2) \( |r| < 1 \)
(3) \( |r| \leq 1 \)  (4) \(-2 < r < 2 \)
147. A ball is drawn at random from a bag containing 5 green, 6 black and 7 white balls, all of identical size. The probability that the chosen ball is either green or black is

\[ \frac{6}{70} \quad (2) \quad \frac{13}{18} \]

\[ (3) \quad \frac{2}{3} \quad (4) \quad \frac{11}{18} \]

148. Three numbers are chosen at random from the set \{1, 2, 3, ..., 8\}. The probability that they are consecutive numbers is

\[ \text{set} \{1, 2, 3, ..., 8\} \text{ set} \text{ of numbers} \text{ are consecutive numbers. The probability} \]

\[ (1) \quad \frac{9}{28} \quad (2) \quad \frac{7}{28} \]

\[ (3) \quad \frac{5}{28} \quad (4) \quad \frac{3}{28} \]

149. The probability that a number chosen at random from \{1, 2, 3, 4, ..., 14\} is a prime number solution of the equation \( f(x) = 0 \) where \( f(x) = (x - 2) (x^2 - 9) (x - 6) (x - 8) \) is

\{1, 2, 3, 4, ..., 14\} set of numbers \( f(x) = 0 \) \( f(x) = (x - 2) (x^2 - 9) (x - 6) (x - 8) \) is

\[ (1) \quad \frac{5}{14} \quad (2) \quad \frac{3}{14} \]

\[ (3) \quad \frac{2}{14} \quad (4) \quad \frac{1}{14} \]

150. If A and B are events such that \( P(A) = \alpha \), \( P(B) = \beta \) and \( P(A \cap B) = \gamma \), then \( P(\overline{A} \cup B) = \)

\( \text{events A, B} \) \( P(A) = \alpha \), \( P(B) = \beta \), \( P(A \cap B) = \gamma \) \( P(\overline{A} \cup B) = \)

\[ (1) \quad 1 - (\alpha + \beta + \gamma) \quad (2) \quad 1 - \alpha - \beta \]

\[ (3) \quad 1 - \alpha - \gamma \quad (4) \quad 1 - \alpha + \gamma \]
SECTION – C
Communication Ability

Questions : 50

PART – I

Choose the correct meaning of the word given:

151. Timbre
   (1) wood
   (2) music
   (3) tonal quality
   (4) accent

152. Caveat
   (1) warning
   (2) certain
   (3) indecisive
   (4) careful

153. Conundrum
   (1) symbol
   (2) problem
   (3) deception
   (4) a musical instrument

154. Indubitably
   (1) certainly
   (2) doubtfully
   (3) deceitfully
   (4) objectively

155. Expedient
   (1) expendable
   (2) advisable
   (3) extravagant
   (4) excellent

156. Proscribe
   (1) encourage
   (2) prescribe
   (3) forbid
   (4) enforce

Fill in the blank choosing the correct word:

157. Due to the unseasonal rains, agricultural produce for the current year remained _______.
   (1) minimal
   (2) maximum
   (3) least
   (4) more

158. The beauty of the flowers at the Mughal Garden in Delhi left the visitors _______.
   (1) spellbound
   (2) happily
   (3) miserable
   (4) uncomfortable

159. The bus suddenly _______ to avoid an accident with a speeding motorist.
   (1) changed
   (2) swerved
   (3) moved
   (4) collided

160. The _______ climate helped him regain his health.
   (1) succulent
   (2) salubrious
   (3) sturdy
   (4) scintillating

25

P.T.O.
Choose the correct answer:

161. One of the most common network setups where each of the devices and computers on a network connect to a central hub is called
   (1) Mesh Topology  (2) Tree Topology
   (3) Star Topology  (4) Hybrid Topology

162. A non-volatile computer storage that can be electrically erased and reprogrammed is called
   (1) Cache Memory  (2) Flash Memory
   (3) Random Access Memory  (4) Read Only Memory

163. A special text file that a web server places on a visitor’s computer is called
   (1) Cookie  (2) Cookie-management utility
   (3) Context menu  (4) Copy command

164. ‘MICR’ stands for
   (1) Magnetic Index Character Recognition
   (2) Magnetic Ink Character Recognition
   (3) Maximum Ink Character Recognition
   (4) Minimum Ink Character Recognition

165. A system configuration in which two or more computers in a network share applications, storage and processing power is called
   (1) distributed computing  (2) distributed application
   (3) distributed service  (4) distributed denial of service

166. A summary of the aims and values of an organization is called
   (1) missive  (2) mission statement
   (3) memo  (4) circular

167. A type of decision making which generally involves a group of high-level managers who deal with very complex, largely unstructured and non-routine problems which affect the general direction of the organization is called
   (1) strategic decision making  (2) management control decisions
   (3) operational control decisions  (4) market intelligence

168. A marketing strategy that includes high price and high promotional cost while launching a new product is called
   (1) Slow Skimming Strategy  (2) Rapid Penetration Strategy
   (3) Rapid Skimming Strategy  (4) Slow Penetration Strategy

169. Who, among the following, is deemed to be the founder of Scientific Management?
   (1) Louis Denbitz Brandies  (2) O. Sheldon
   (3) Peter Drucker  (4) Frederick W. Taylor

170. M.B.O. stands for
   (1) Management By Objections  (2) Management By Objectives
   (3) Management By Organizations  (4) Management Business Objectives
Choose the correct answer:

171. A: “Can you buy souvenirs at the market?”
   B: “You can, but you may be cheated.”
   ‘B’ implies
   (1) it is advisable
   (3) ‘A’ has to take a chance
   (2) it is unadvisable
   (4) the souvenirs may not be available

172. A: “Why doesn’t she see through him?”
   B: “Why, what do you expect to happen?”
   In this conversation, ‘B’ is
   (1) concerned
   (2) indifferent
   (3) feels that A’s concern is unjustified
   (4) makes light of A’s concern

173. A: “Why don’t you cook the dinner today?”
   B: “I wish you’d let me be.”
   ‘B’ implies
   (1) he is willing
   (3) he cannot cook
   (2) he wants to be left alone
   (4) he may cook later

174. A: “They are talking ill of me, although they are not ignorant of my merit and hard work.”
   B: “Be it so, dogs bark while the caravan passes on.”
   ‘B’ means that
   (1) it is natural for dogs to bark
   (2) one should take into account popular gossip
   (3) popular gossip is the foundation of true judgement
   (4) one should not bother about popular gossip

175. Change the following into passive voice:
   All desire wealth and some acquire it.
   (1) Wealth is desired by all and it is acquired by some.
   (2) Wealth is desired by all and some have acquired it.
   (3) Some have acquired wealth.
   (4) Some desire wealth, and all acquire it.

176. A: “Why don’t you save some money from your salary every month?
   It will help you in the long run.”
   B: “It’s rather hard in the circumstances.
   I can barely make ends meet.”
   ‘B’ implies that his salary is
   (1) enough
   (3) just enough
   (2) not enough
   (4) more than enough

177. He cleared out without paying the rent.
   The underlined phrase means
   (1) went away
   (3) stayed inside
   (2) cleaned the room
   (4) cleared his way
Fill in the blanks with the appropriate phrase/verb/preposition:

178. Cut a piece ________ the bread.
   (1) of  (2) off  (3) on  (4) in

179. The level of inflation has increased ________ 40%.
   (1) beyond  (2) within  (3) below  (4) behind

180. He pushed his way ________ the crowd.
   (1) across  (2) through  (3) by  (4) up

181. The sea has ________ all round the coast.
   (1) surrounded  (2) swept  (3) encroached  (4) flooded

182. He was ________ with immense physical strength.
   (1) endowed  (2) given  (3) filled  (4) enfeebled

183. To ________ criminal behaviour is to encourage social ills.
   (1) condone  (2) condemn  (3) crush  (4) quell

184. Please ________ the proposal and let me know what you think.
   (1) look for  (2) look through  (3) look on  (4) look down

185. I find it very hard to ________ his lectures.
   (1) take on  (2) take in  (3) take up  (4) take after
PART – 4

Read the following passage and answer questions 186-190.

Computers have brought a revolution in human life. To begin with, computers took over different human activities. Now even thinking and problem-solving are being done by computers. This has culminated into automation of offices and manufacturing processes resulting in drastic reduction of manpower in administration, business and industry. So much is the human reliance on computers that they are being used on a large scale even in fields like music, sculpture and architecture. The growing use of computers in teaching might one day render teachers, classrooms and libraries redundant. This situation makes many of us believe that computers are likely to replace human beings in every walk of life. But every coin has two sides. However useful they may be, computers cannot replace human beings. A compliment by an elderly person restores the confidence of a depressed person. A simple touch of a mother silences a crying baby. Can a computer perform these and many such other miracles? Now-a-days, teaching is being done by computers. Computer lovers claim that they can learn everything with the help of a computer. But imagine the difference between the two situations, i.e.; sitting before a computer and sitting in a classroom with dozens of students around and in the presence of a teachers. The pains and pleasures of companionship, the repudiating as well as encouraging expressions on the teacher’s face, the direct interaction, and abundant sharing and understanding, set this living situation a world apart from the lonely, computer controlled suffocating room.

186. How have computers brought about a revolution in human life?
   (1) They are sophisticated machines
   (2) They have taken over every aspect of human life.
   (3) They provide information
   (4) They are user-friendly

187. What is the meaning of ‘automation of offices and manufacturing processes’?
   (1) Replacing manual labour with automatic equipment
   (2) To become automatic
   (3) To become remote controlled
   (4) To work faster

188. What makes one believe that computers will one day replace human beings?
   (1) Computers will replace teachers
   (2) Increasing human dependence on computers
   (3) Computers will replace libraries
   (4) Computers will replace classrooms

189. Why cannot computers replace human beings?
   (1) Computers have to be bought
   (2) Human beings are not machines
   (3) Computers are expensive
   (4) Computers are difficult to handle

190. What does a ‘lonely, computer-controlled suffocating room’ imply?
   (1) Lack of air
   (2) Lack of friends
   (3) A stifling cheerless world of scientific technology
   (4) Computers controlling human life
Read the following passage and answer questions 191-195:

How many times have you asked, “Why did he do that? Why did she say that? Why does nothing ever work out for me? Why didn’t I get what I wanted? Why does this keep happening in my life?” “Whyology” is the obsessive need to know why things happen as they do, which results in emotional paralysis, keeping you stuck. Why do you need to know why things happen? If you did know, would it make that much difference? Many people will say, “Yes, it would make a difference, because then I would be able to move on and let go.” The truth is that the letting-go experience has nothing to do with knowing why things happen as they do. In fact the more you need to know why, the less likely you are to let go and more on. Unless you release this cycle, you will be robbed of your ability to appreciate and enjoy the moment you are living in right now. Think of all the energy that you could use to create in life if you left the practice of keeping vigil on tombstones. Internal stress comes when you resist what is in life. When you release your need to know why, an amazing thing starts to happen. You begin to connect with your inner creativity, which helps you find creative solutions to your situation.

191. What is ‘Whyology’?
(1) It is a philosophy of life.
(2) It the compulsive need to know the reason behind an act.
(3) It is a branch of literature.
(4) It is a scientific approach to life.

192. What does ‘Whyology’ lead to?
(1) Happiness
(2) Success
(3) A positive attitude
(4) Emotional stagnation

193. What happens when this cycle of ‘whyology’ is released?
(1) Appreciation and enjoyment of life follows
(2) Negative thoughts enter one’s mind
(3) One becomes critical
(4) Life is filled with unhappy moments

194. What does the ‘practice of keeping vigil to tombstones’ mean?
(1) Going to the cemetery
(2) Keeping a watch on tombstones
(3) Brooding over the past
(4) Worrying over the future

195. When does ‘internal stress’ occur?
(1) When one is creative
(2) When one does not accept what is in life
(3) When one accepts what is in life
(4) When one helps others
Read the following passage and answer questions 196-200:

Tea has always been an integral part of our beverage culture. Its origins are the stuff of legend. A Chinese story says that when an Emperor was purifying water in the shelter of a tea tree, some leaves fell into the pot. The liquid that emerged after boiling was of a wonderful fragrance, colour and taste, and the first tea to be brewed. In India, we are told of a Prince, who left his homeland to preach Buddhism and decided not to sleep during his nine-year mission. At the end of his third year, overtaken by exhaustion, he chewed a few leaves of a tea shrub, which apparently enabled him to stay awake for the remaining six years. Over the years, tea drinking was refined into an art and indeed has even been elevated into an elaborate, almost sacred rite as in the Japanese tea ceremony. But if there was one culture that adopted tea drinking and made it an iconic ritual and time of day in itself, it was the English.

196. What does the origin of tea drinking suggest?
   (1) It was fashionable  
   (2) It was sublime  
   (3) It was traditional  
   (4) It was suspicious

197. According to legend, how were the first tea leaves discovered?
   (1) By accident  
   (2) By experimentation  
   (3) By official order  
   (4) By simple practices

198. What did tea drinking gradually become a form of?
   (1) Healthy living  
   (2) Habit formation  
   (3) Sacred ritual  
   (4) Polite behaviour

199. Who first related tea drinking to “the time of day”?
   (1) The Indians  
   (2) The English  
   (3) The Japanese  
   (4) The Chinese

200. Which of the following is not mentioned in the passage?
   (1) Fragrance of tea  
   (2) Origin of tea  
   (3) Types of tea  
   (4) Social etiquette and tea