PART - I : REASONING

Directions (1-5) : *Study the given information carefully to answer the given questions.*

Eight people — E, F, G, H, Q, R, S and T are sitting around a square table (but not necessarily in the same order) in such a way that four of them sit at four corners while four sit in the middle of each of the four sides. The ones sitting at the corners are facing the centre and the ones sitting in the middle of the sides are facing outside (*i.e.* opposite to the centre).

Q sits in the middle of one of the sides. Only two people sit between Q and R. Only one person sits between R and E. E is an immediate neighbour of both T and F. S sits to the immediate left of F. Only one person sits between G and S.

1. Who sits third to the left of G ?
(1) H (2) T
(3) F (4) R
(5) E

2. What is the position of T with respect to R ?
(1) Second to the right
(2) Third to the left
(3) Immediate left
(4) Third to the right
(5) Immediate right

3. How many people sit between T and F when counted from the left of T ?
(1) One
(2) None
(3) Three
(4) Two
(5) More than three

4. Which of the following is true with respect to the given arrangement ?
(1) Only three people sit between E and Q.
(2) Q is an immediate neighbour of S.
(3) F sits second to the left of H.
(4) H sits at one of the corners of the table.
(5) None of the given statements is true.

5. Which of the following pairs represent the people sitting between Q and the one sitting second to the left of E when counted from the left of Q ?
(1) F, S (2) H, G
(3) F, G (4) T, S
(5) R, T

Directions (6-10) : *Study the following information to answer the given questions.*

Rohan speaks about seven different countries *viz.* Egypt, China, Indonesia, Japan, Malaysia, France and Austria in a seminar held on seven different days of the same week starting from Monday and ending on Sunday but not necessarily in the same order. Thus on one day Rohan speaks about only one country.

Rohan speaks about Japan on Friday. He speaks about Egypt on one of the days after Japan. He speaks only about two countries between Egypt and China. He speaks about only one country between China and France. He speaks about France on one of the days before he speaks about China. He speaks only about one country between Japan and Malaysia. He speaks about Austria on one of the days before he speaks about China but not on Monday.

6. Rohan speaks about which country on Thursday ?
(1) Malaysia (2) Egypt
(3) Indonesia (4) Austria
(5) China

7. Which of the following is not true as per the given arrangement ?
(1) All the given statements are true
(2) Rohan speaks about France on the day immediately before the day he speaks about Austria.
(3) Rohan speaks about China on Wednesday.
(4) Rohan speaks about Egypt on Saturday.
(5) Rohan speaks about Indonesia on the day immediately before the day he speaks about Japan.

8. On which day Rohan speak about France ?
(1) Saturday (2) Wednesday
(3) Monday (4) Sunday
(5) Tuesday

9. On how many countries does Rohan speak about between China and Malaysia ?
(1) Four (2) Three
(3) Two (4) One
(5) None

10. Four of the following five are alike in a certain way based on the given arrangement and thus form a group. Which is the one that does not belong to that group ?
(1) Saturday-Malaysia
(2) Tuesday-France
(3) Sunday-Egypt
(4) Monday-Austria
(5) Wednesday-Japan

Directions (11-15) : *In these questions, two/three statements followed by two conclusions are given. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and then decide which of the given conclusions logically follows disregarding commonly known facts.*

Give answer :

(1) If **only** conclusion **I** is true
(2) If **both** conclusions I and II are true
(3) If **either** conclusion I **or** II is true
(4) If **only** conclusion **II** is true
(5) If **neither** conclusion I **nor** II is true

(11-12) : Statements : All papers are woods. Some woods are leaves. All leaves are trunks.

11. Conclusions :
I. Some leaves are papers.
II. Atleast some trunks are woods.

12. Conclusions :
I. All trunks being woods is a possibility.
II. Some trunks are papers.

(13-14) : Statements : No mobile is a band. All bands are pillows. Some pillows are sheets.

13. Conclusions :
I. No mobile is a pillow.
II. All sheets are bands.

14. Conclusions :
I. Some pillows are mobiles.
II. All bands are sheets.

15. Statements : All ladders are snakes. Some snakes are frogs.
Conclusions :
I. No ladder is a frog.
II. Atleast some ladders are frogs.

16. How many such pairs of digits are there in the number 31748296 (both in forward and backward directions), each of which has as many digits between them as in the arithmetic series ?
(1) Three
(2) More than three
(3) One
(4) None
(5) Two

17. In a certain code language, 'send the tests' is coded as 'al vx se' and 'all tests solved' is coded as 'se pg nb'. How will 'tests' be coded as in the given code language ?
(Note : All codes are two letter codes only)
(1) nb
(2) vx
(3) Either 'nb' or 'pg'
(4) se
(5) Either 'ol' or 'pg'

18. Among five people — A, B, C, D and E, each scoring different marks, only two persons scored more marks than A. D scored more than A. B scored less than D but not the lowest. C scored more than B but not the highest. Who scored highest marks ?
(1) Cannot be determined
(2) B (3) E
(4) C (5) D

19. Four of the following five are alike in a certain way (based on their positions of alphabets in the English alphabetical series) and hence form a group. Which is the one that does not belong to that group ?
(1) BFD (2) EIH
(3) KOM (4) TXV
(5) LPN

Directions (20-22) : *Study the given information carefully to answer the given questions.*

L is the only child of K. R is married to L. S is the sister of R. S is the only daughter of B. J, the father of B has only two children. Q is the daughter of J.

20. How is J related to S ?
(1) Grandfather
(2) Brother-in-law
(3) Uncle
(4) Cousin
(5) Father-in-law

21. If J has only one daughter, then how is B related to L ?
(1) Nephew
(2) Niece
(3) Father-in-law
(4) Brother
(5) Mother-in-law

22. How is Q related to R ?
(1) Daughter-in-law
(2) Grandmother
(3) Niece
(4) Aunt
(5) Mother-in-law

Directions (23-27) : *In these questions, relationship between different elements is shown in the statements. The statement(s) are followed by conclusions. Study the conclusions based on the given statements and select the appropriate answer.*

Give answer :

(1) If **either** conclusion I **or** II is true
(2) If **both** conclusions I and II are true
(3) If **only** conclusion **I** is true
(4) If **only** conclusion **II** is true
(5) If **neither** conclusion I **nor** II is true

23. Statements : $M \leq A \geq N; E \leq A < G$
Conclusions : I. $M \leq E$
II. $G > N$

24. Statements : $H = W \leq R > F$
Conclusions : I. $R = H$
II. $R > H$

25. Statements : $L \geq Y \geq A < R; P \leq A$
Conclusions : I. $P \leq L$
II. $R > P$

26. Statements : $M \leq A \geq N; E \leq A < G$
Conclusions : I. $N \leq E$
II. $G > M$

27. Statements : $W > Q = U \geq I < T \leq C$
Conclusions : I. $W > T$
II. $Q \geq C$

Directions (28-30) : *Study the given information carefully to answer the given questions.*

R is 15m west of Q. J is 6m north of Q. W is 2m west of J. L is 10m south of W. K is 6m west of L.

28. If F is 4m to the south of R and V is 2m east of K, how far is Point F from Point V ?
(1) 8 m (2) 11 m
(3) 5 m (4) 9 m
(5) 4 m

29. Kabir walks 10m towards south from Point J, takes a right turn and walks for 3m. How far will he be from Point K ?
(1) 4 m (2) 10 m
(3) 9 m (4) 6 m
(5) 5 m

30. In which direction is R with respect to J ?
(1) West
(2) South east
(3) North east
(4) North
(5) South west

Directions (31-35) : *Study the following information to answer the following questions.*

Nine persons—G, H, I, J, K, R, S, T and U are seated in a straight line facing North, with equal distance between each other but not necessarily in the same order.

Only two people sit to the left of G. Only one person sits between I and U. H sits fourth to the right of R. R is not an immediate neighbour of U. Less than three people sit between R and U. Number of people sitting between I and U is half as that between H and J. Only three people sit between K and T. K is not an immediate neighbour of J. Only two people sit between T and G.

31. In which of the given pairs of people, is odd number of people sitting between them ?
(1) H, J
(2) I, U
(3) U, R
(4) J, K
(5) G, T

32. Which of the following is true with respect to S as per the given arrangement ?
(1) S is an immediate neighbour of U.
(2) None of the given options is true.
(3) S sits at one of the extreme ends of the line.
(4) More than two people sit between S and R.
(5) S sits second to the left of K.

33. Who amongst the following sit exactly between T and G ?
(1) I, J (2) H, J
(3) R, U (4) H, S
(5) J, R

34. Who sits second to the left of J ?
(1) T
(2) No one as J sits at one of the extreme ends of the line.
(3) I
(4) G
(5) S

35. Who sits exactly in the middle of the line ?
(1) K (2) H
(3) R (4) J
(5) I

Directions (36-40) : *Study the following information and answer the questions.*

Nine friends — P, Q, R, S, T, U, V, W and X live on nine different floors of a building but not necessarily in the same order. The lower most floor of the building is numbered 1, the one above that is numbered 2 and so on till the topmost floor is numbered 9.

Only two persons live below the floor on which V lives. Only one person lives between V and P. W lives on an odd numbered floor but not on floor numbered 7. Only two persons live between W and Q. X does not live on the topmost floor. P does not live on the lowermost floor. S lives immediately below R but R does not sit on topmost floor. Neither R nor T live on floor numbered 6. U lives immediately above P.

36. How many persons live between the floors on which P and S live ?
(1) Three
(2) More than three
(3) None
(4) Two
(5) One

37. Who lives on the floor immediately below V ?
(1) U (2) T
(3) S (4) Q
(5) X

38. On which of the following floor numbers does X live ?
(1) Four (2) One
(3) Two (4) Five
(5) Seven

39. Which of the following is true with respect to U as per the given arrangement ?
(1) Only three persons live between U and Q.
(2) Only three persons live above U.
(3) Only one person sits between U and S.
(4) U sits on an odd numbered floor.
(5) None of these

40. Who lives on floor numbered 5 ?
(1) U (2) Q
(3) S (4) P
(5) Other than those given as options

PART-II
QUANTITATIVE APTITUDE

41. A boat takes a total time of 12 hours to travel 105 km upstream and the same distance downstream. The speed of the boat in still water is six times the speed of the current. What is the speed of the boat in still water ? (in km/h)
(1) 12 (2) 30 (3) 18
(4) 24 (5) 36

42. At 60% of its usual speed, a train of length L metre crosses a platform 240 m long in 15 sec. At its usual speed, the train crosses a pole in 6 sec. What is the value of L (in metre) ?
(1) 270 (2) 225 (3) 220
(4) 480 (5) 240

43. P, Q and R have a certain amount of money with themselves. Q has 50% more than what P has, and R has $\frac{1}{3}$rd of what Q has. If P,Q and R together have ₹ 246/- then how much money does P alone have ? (in ₹)
(1) 75 (2) 60 (3) 120
(4) 82 (5) 90

Directions (44-47) : *What will come in place of question mark (?) in the given number series ?*

44. 15 27 37 45 51 ?
(1) 58 (2) 80 (3) 65
(4) 74 (5) 55

45. 700 457 376 349 340 ?
(1) 266 (2) 329 (3) 304
(4) 337 (5) 307

46. 1 2 6 21 88 ?
(1) 425 (2) 475 (3) 295
(4) 445 (5) 395

47. 19 20 16 25 9 ?
(1) 45 (2) 55 (3) 59
(4) 34 (5) 81

48. A and B both start a small business with an investment of ₹ 3,500/- and ₹ 4,000/- respectively. At the end of few months from the start of the business, A withdrew from the business completely. If the annual profit was divided between A and B in the respective ratio of 5 : 12, then after how many months from the start of the business, did A leave the business ?
(1) Eight (2) Nine
(3) Ten (4) Five
(5) Six

49. The respective ratio between present ages of P and Q is 9 : 5. The respective ratio between P's age 6 years hence and Q's age 5 years ago is 12 : 5. What is the respective ratio between P's age 12 years ago and Q's age 6 years hence ?

(1) 5 : 3 (2) 7 : 6
(3) 9 : 7 (4) 11 : 6
(5) 4 : 3

Directions (50-54) : *In these questions, two equations numbered I and II are given. You have to solve both the equations and choose the appropriate option.*

Give answer :

(1) If $x \geq y$
(2) If $x < y$
(3) If $x \leq y$
(4) If relationship between x and y cannot be established
(5) If $x > y$

50. I. $2x^2 + 7x + 5 = 0$ II. $3y^2 + 5y + 2 = 0$

51. I. $2x^2 - 13x + 21 = 0$ II. $3y^2 - 14y + 15 = 0$

52. I. $2x^2 - 13x + 18 = 0$ II. $y^2 - 7y + 12 = 0$

53. I. $x^2 + 6x + 9 = 0$ II. $y^2 - y - 20 = 0$

54. I. $3x^2 - 10x + 8 = 0$ II. $2y^2 - 17y + 35 = 0$

55. Jar A has 60 litre of mixture of milk and water in the respective ratio of 2 : 1. Jar B which had 40 litre of mixture of milk and water was emptied into Jar A, as a result in Jar A, the respective ratio of milk and water becomes 13 : 7. What was the quantity of water in Jar B ?

(1) 8 litre (2) 15 litre
(3) 22 litre (4) 7 litre
(5) 1 litre

56. The sum of a series of five consecutive odd numbers is 195. The second lowest number of this series is 5 less than the second highest number of another series of five consecutive even numbers. What is 40% of the second highest number of the series of consecutive even numbers ?

(1) 16.8 (2) 18.8
(3) 19.4 (4) 17.6
(5) 16.4

57. The sum of the dimensions of a room (*i.e.* length, breadth and height) is 18 m and its length, breadth and height are in the ratio of 3 : 2 : 1 respectively. If the room is to be painted at the rate of ₹ 15 per m^2, what would be the total cost incurred on painting only the four walls of the room (in ₹) ?

(1) ₹ 3,250/- (2) ₹ 2,445/- (3) ₹ 1,350/-
(4) ₹ 2,210/- (5) ₹ 2,940/-

58. B is $\frac{4}{3}$ times as efficient as A. If A can complete $\frac{5}{8}$th of a given task in 15 days, what fraction of the same task would remain incomplete if B works on it independently for 10 days only ?

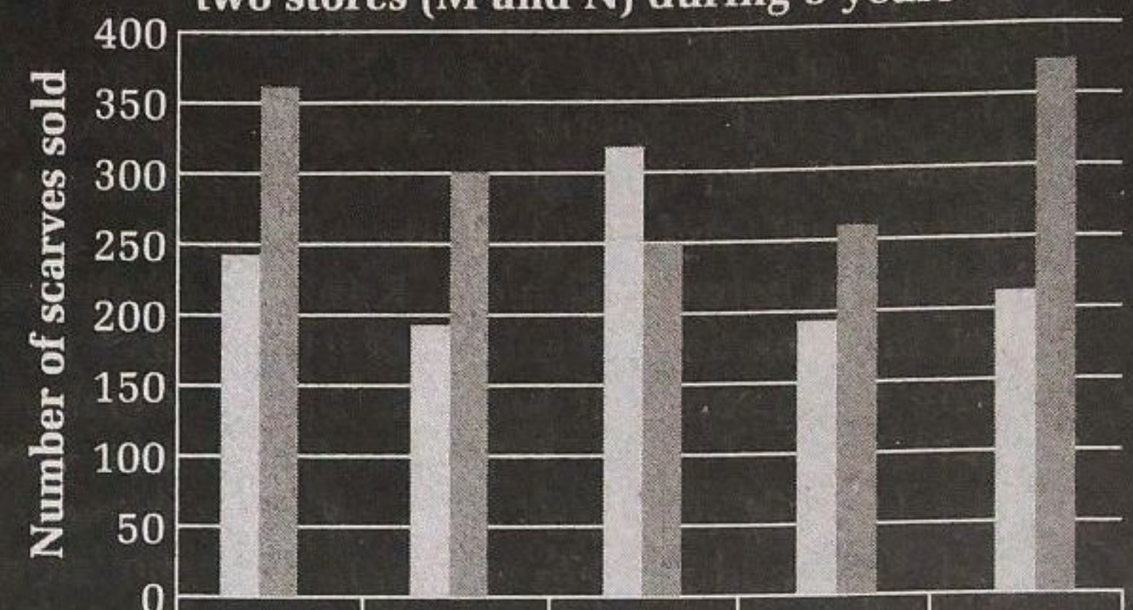
(1) $\frac{3}{4}$ (2) $\frac{2}{3}$ (3) $\frac{5}{8}$
(4) $\frac{4}{9}$ (5) $\frac{2}{3}$

59. The average runs scored by a batsman in forty-five matches were 42 runs. The difference between his highest and lowest runs scored was 114. If those two matches (on which he scored the highest and the lowest runs) are excluded, his average score will be 40. What will be his lowest score ?

(1) 25 (2) 32
(3) 34 (4) 28
(5) 36

Directions (60-64) : *Refer to the graph and answer the given questions.*

Data related to the number of scarves sold by two stores (M and N) during 5 years



	2002	2003	2004	2005	2006
M	240	190	320	190	210
N	360	300	250	260	370

60. What is the difference between the total number of scarves sold by store M in 2003 and 2004 together and total number of scarves sold by store N in 2005 and 2006 together ?

(1) 160 (2) 100
(3) 140 (4) 150
(5) 120

61. Number of scarves sold by store M decreased by what percent from 2004 to 2005 ?

(1) $40\frac{5}{8}\%$ (2) $45\frac{3}{8}\%$
(3) $42\frac{3}{8}\%$ (4) $30\frac{3}{8}\%$
(5) $35\frac{5}{8}\%$

62. If the respective ratio between total number of scarves sold by stores M and N together in 2002 and that in 2009 is 15 : 11, what is the total number of scarves sold by stores M and N together in 2009 ?

(1) 430 (2) 450
(3) 420 (4) 460
(5) 440

63. If the total number of scarves sold by stores M and N together in 2009 is 20% less than that in 2006, what is the total number of scarves sold by stores M and N together in 2009 ?

(1) 408 (2) 406 (3) 414
(4) 396 (5) 464

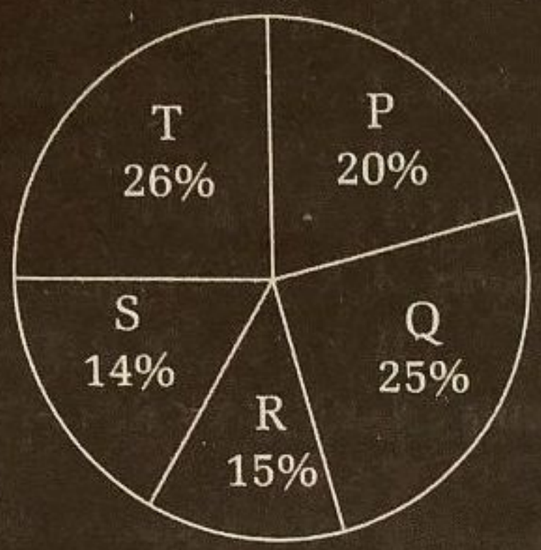
64. What is the average number of scarves sold by store N in 2003, 2004 and 2005 ?

(1) 260 (2) 270 (3) 290
(4) 250 (5) 280

Directions (65-70) : *Refer to the pie chart and answer the given questions.*

Percentage of bags available in different stores in July

Total number of bags available in all stores together = 600



65. What is the central angle corresponding to number of bags available in store T ? (in degree)
(1) 91.2° (2) 95.6°
(3) 93.6° (4) 94.2°
(5) 92.5°

66. What is the difference between the average number of bags available in stores P and R together and the average number of bags available in stores S and T together ?
(1) 12 (2) 22 (3) 15
(4) 18 (5) 16

67. The respective ratio between number of bags available in store P in August and that available in the same store in July was 5 : 4. How many bags were available in store P in August as compared to July ?
(1) 15 (2) 90 (3) 24
(4) 60 (5) 30

68. In September, the total number of bags available in all the stores together was 90 more than that available in July. What was the percent increase in the total number of bags available in all the stores together from July to September ?
(1) 10 (2) 12 (3) 20
(4) 18 (5) 15

69. In July, $\frac{4}{15}$ of the available bags in store Q remained unsold and $\frac{5}{12}$ of the available bags in store S remain unsold. How many bags were sold by stores Q and S together in July ?
(1) 159 (2) 146 (3) 154
(4) 168 (5) 169

70. Two years ago, the respective ratio between A's age at that time and B's age at that time will be 5 : 9. A's age three years ago was 13 years less than B's age six years ago. What is B's present age ?
(1) 38 years (2) 30 years (3) 34 years
(4) 32 years (5) 36 years

Directions (71-75) : *What approximate value will come in place of question mark (?) in the given questions ? (You are not expected to calculate the exact value.)*

71. $\sqrt{?} \times 479.87 \div 12.01 = 179 + 139.99$
(1) 36 (2) 100 (3) 64
(4) 4 (5) 16

72. $629 \div 9.02 - 139.996 \div 7.06 = ?$
(1) 75 (2) 35
(3) 50 (4) 65
(5) 25

73. $124.99 \times 4.998 + 129.992 - 75.05 = ?$
(1) 540 (2) 780
(3) 680 (4) 620
(5) 760

74. 45% of $401 \div 3 - ? = 6.02^2$
(1) 38 (2) 52
(3) 6 (4) 24
(5) 12

75. $14.08^2 - 3.01 \times 104.11 \div 4.02 = ?$
(1) 280 (2) 200
(3) 160 (4) 118
(5) 125

Directions (76-80) : *Based on the following table answer the given questions.*

University	Total number of faculty members	Percentage of Assistant Professors	Number of Associate Professors
J	250	60	75
K	180	75	24
L	150	80	16
M	100	63	21

(**Note :** The faculty members include Assistant Professors, Associate Professors and Professors only.)

76. What is the difference between the total number of Associate Professors in Universities J and M together and the total number of Professors in the same Universities together ?
(1) 54 (2) 55 (3) 68
(4) 58 (5) 57

77. In University M, $\frac{8}{21}$ of the Assistant Professors are males and in University L, $\frac{3}{5}$ of the Assistant Professors are males. What is the respective ratio between male Assistant Professors in University M and that in University L?
(1) 2 : 5 (2) 1 : 3 (3) 3 : 5
(4) 2 : 7 (5) 3 : 1

78. What is the average number of Assistant Professors in Universities K, L and M ?
(1) 102 (2) 106 (3) 105
(4) 104 (5) 108

79. The total number of Professors in Universities J and K together is approximately what percent less than the number of Assistant Professors in University M ?
(1) 16% (2) 27% (3) 35%
(4) 40% (5) 30%

80. In University J, 72% faculty members are females. If three-fifth of the total Assistant Professors are females, what percent females are either Associate Professors or Professors ?
(1) 60% (2) 55% (3) 50%
(4) 65% (5) 57%