PRACTICE SET 9

INSTRUCTIONS

- **This practice set consists of two sections. Quantitative Aptitude (Qs. 1-40) & Reasoning Ability (Qs. 41-80).**
- **All the questions are compulsory.**
- **Each question has five options, of which only one is correct. The candidates are advised to read all the options thoroughly.**
- **There is negative marking equivalent to $1/4^{th}$ of the mark allotted to the specific question for wrong answer.**

Time : 45 Min. **Max. Marks : 80**

QUANTITATIVE APTITUDE

DIRECTIONS (Q. 1-10) : What should come in place of the question mark (?) in the following questions?

1. $\sqrt{?} = \pm 75$

(a) –5625 (b) 75
(c) 1500 (d) Cannot be determined
(e) None of these

2. $\frac{21}{8} \div \frac{7}{72} \times \frac{1}{171} = ?$

(a) $\frac{9}{19}$ (b) $\frac{1}{3}$
(c) $\frac{5}{19}$ (d) $\frac{3}{19}$
(e) None of these

3. $4\frac{1}{2} + 6\frac{2}{3} \div 5\frac{1}{3} = ?$

(a) $15\frac{1}{2}$ (b) $16\frac{2}{3}$
(c) $16\frac{1}{2}$ (d) 17
(e) None of these

4. $792.02 + 101.32 - 306.76 = ?$

(a) 893.34 (b) 1200.10
(c) 997.11 (d) 586.58
(e) None of these

5. 300% of 150 = ?% of 600

(a) 75 (b) 45
(c) 450 (d) $133\frac{1}{2}$
(e) None of these

6. $34.95 + 240.016 + 23.9800 = ?$

(a) 299.09 (b) 298.0946
(c) 298.111 (d) 298.946
(e) None of these

7. $48.95 - 32.006 = ?$

(a) 16.089 (b) 16.944
(c) 16.35 (d) 16.89
(e) None of these

8. $3889 + 12.952 - ? = 3854.002$

(a) 47.95 (b) 47.752
(c) 47.095 (d) 47.932
(e) None of these

9. $? + 72.64 = 74.64$

(a) 145.28 (b) –2.00
(c) –145.28 (d) 147.28
(e) None of these

10. $6.25 \div 0.0025 = ?$

(a) 1800 (b) 2300
(c) 1700 (d) 2500
(e) None of these

11. Which is the smallest of the following numbers ?

(a) $\sqrt{7}$ (b) $\frac{1}{\sqrt{7}}$
(c) $\frac{\sqrt{7}}{7}$ (d) $\frac{1}{7}$
(e) None of these

12. Two equal sums were borrowed at 8% simple interest per annum for 2 years and 3 years, respectively. The difference in the interests was ₹ 56. The difference in the interests was ₹ 56. The sum borrowed were
(a) ₹ 690 (b) ₹ 700
(c) ₹ 740 (d) ₹ 780
(e) None of these

13. A machine is sold at a profit of 10%. Had it been sold for ₹ 80 less, there would have been a loss of 10%. The cost price of the machine is
(a) ₹ 350 (b) ₹ 400
(c) ₹ 450 (d) ₹ 520
(e) None of these

14. A jar of oil was four fifths full. When six bottles of oil were taken out and four bottles of oil were poured into, it was three fourths full. How many bottles of oil were contained by the jar ?
(a) 10 (b) 20
(c) 30 (d) 40
(e) None of these

15. During a journey of 80 km a train covers first 60km with a speed of 40 km/h and completes the remaining distance with a speed of 20 km/h. What is the average speed of the train during the whole journey?
(a) 30 km/h (b) 32 km/h
(c) 36 km/h (d) 40 km/h
(e) None of these

16. An aeroplane takes off 30 minutes later than the scheduled time and in order to reach its destination 1500 km away in time, it has to increase its speed by 250 km/h from its usual speed. Find its usual speed.
(a) 1000 km/h (b) 750 km/h
(c) 850 km/h (d) 650 km/h
(e) None of these

17. In an examination 35% of the candidates failed in one subject and 42% failed in another subject. While 15% failed in both the subjects. If 2500 candidates appeared at the examination, how many students passed in either subject but not in both?
(a) 325 (b) 1175
(c) 2125 (d) 1230
(e) None of these

18. If the length of a certain rectangle is decreased by 4 cm and the width is increased by 3 cm, a square with the same area as the original rectangle would result. The perimeter of the original rectangle (in centimetres) is :
(a) 44 (b) 46
(c) 48 (d) 50
(e) None of these

19. Raju decided to marry 3 years after he gets a job. He was 17 years old when he passed class 12th. After passing class 12th', he had completed his graduation course in 3 years and PG Course in 2 years. He got the job exactly 1 year after completing his PG Course. At what age will he get married?
(a) 27 years (b) 26 years
(c) 28 years (d) 23 years
(e) None of these

20. The angles of a triangle are in the ratio of 5 : 6 : 7. respectively. What is the sum of the smallest angle and the largest angle together?
(a) 130° (b) 100°
(c) 110° (d) 140°
(e) None of these

DIRECTIONS (Qs. 21-25): Find out the approximate value which should replace the question mark (?) in the following questions. (You are not expected to find out the exact value.)

21. $\sqrt{1000} + \frac{3.001}{4.987}$ of $1891.992 = ?$
(a) 2500 (b) 1230
(c) 1640 (d) 1525
(e) 2130

22. $0.0004 \div 0.0001 \times 36.000009 = ?$
(a) 0.10 (b) 1.45
(c) 145 (d) 14.5
(e) 1450

23. 137% of $12345 = ?$
(a) 17000 (b) 15000
(c) 1500 (d) 1430
(e) 900

24. $12.25 \times ? \times 21.6 = 3545.64$
(a) 20 (b) 12
(c) 15 (d) 13
(e) None of these

25. $\sqrt[3]{4096} = ?$
(a) 16 (b) 26
(c) 18 (d) 24
(e) None of these

DIRECTIONS (Qs. 26-30): What will come in place of the question mark (?) in the following number series?

26. 2 9 30 105 ? 2195
(a) 432 (b) 426
(c) 440 (d) 436
(e) None of these

27. 3 4 12 45 ? 1005
(a) 152 (b) 198
(c) 144 (d) 192
(e) None of these

28. 1 3 9 31 ? 651
(a) 97 (b) 127
(c) 129 (d) 109
(e) None of these

29. 5 ? 4 7.5 17 45
(a) 3.5 (b) 3
(c) 2.5 (d) 2
(e) None of these

30. 15 30 ? 40 8 48
(a) 10 (b) 20
(c) 18 (d) 12
(e) None of these

31. Mr Duggal invested ₹20,000 with rate of interest @ 20 pcpa. The interest was compounded half-yearly for the first one year and in the next year it was compounded yearly. What will be the total interest earned at the end of two years?
(a) ₹8,800 (b) ₹9,040
(c) ₹8,040 (d) ₹9,800
(e) None of these

32. In how many different ways can the letters of the word DESIGN be arranged so that the vowels are at the two ends?
(a) 48 (b) 72
(c) 36 (d) 24
(e) None of these

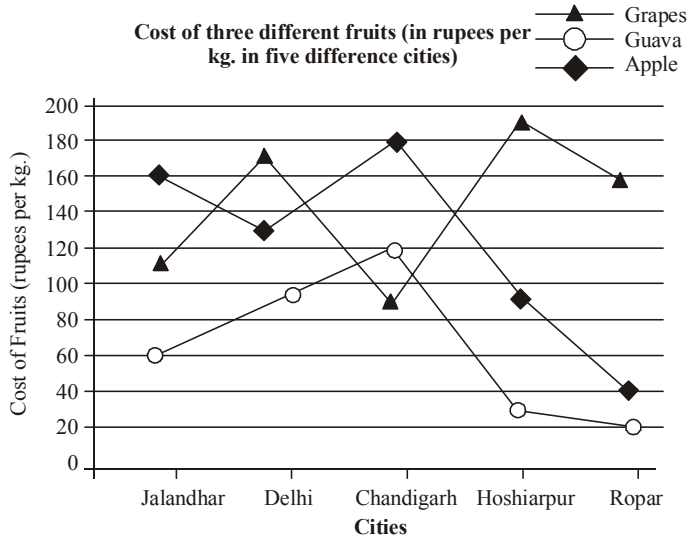
33. The probability that the 13th day of a randomly chosen month is a Friday, is
(a) $\frac{1}{12}$ (b) $\frac{1}{7}$
(c) $\frac{1}{84}$ (d) $\frac{1}{13}$
(e) $\frac{2}{17}$

34. 4 men can complete a piece of work in 2 days. 4 women can complete the same piece of work in 4 days whereas 5 children can complete the same piece of work in 4 days. If, 2 men, 4 women and 10 children work together, in how many days can the work be completed ?
(a) 1 day (b) 3 days
(c) 2 days (d) 4 days
(e) None of these

35. A boat takes 6 hours to travel from place M to N downstream and back from N to M upstream. If the speed of the boat in still water is 4 km./hr., what is the distance between the two places?
(a) 8 kms. (b) 12 kms.
(c) 6 kms. (d) Data inadeqate
(e) None of these

DIRECTIONS (Qs. 36-40): Study the following information carefully and answer the given questions.

Cost of three different fruits (in rupees per kg. in five different cities)



36. In which city is the difference between the cost of one kg of apple and cost of one kg of guava second lowest?
(a) Jalandhar (b) Delhi
(c) Chandigarh (d) Hoshiarpur
(e) Ropar

37. Cost of one kg of guava in Jalandhar is approximately what percent of the cost of two kgs of grapes in Chandigarh?
(a) 66 (b) 24
(c) 28 (d) 34
(e) 58

38. What total amount will Ram pay to the shopkeeper for purchasing 3 kgs of apples and 2 kgs of guavas in Delhi?
(a) ₹530/- (b) ₹450/-
(c) ₹570/- (b) ₹620/-
(e) ₹490/-

39. Ravinder had to purchase 45 kgs of grapes from Hoshiarpur. Shopkeeper gave him discount of 4% per kg. What amount did he pay to the shopkeeper after the discount?
(a) ₹8,280/- (b) ₹8,104/-
(c) ₹8,340/- (b) ₹8,550/-
(e) ₹8,410/-

40. What is the respective ratio between the cost of one kg of apples from Ropar and the cost of one kg of grapes from Chandigarh?
(a) 3 : 2 (b) 2 : 3
(c) $2^2 : 3^2$ (d) $4^2 : 9^2$
(e) $9^2 : 4^2$

REASONING ABILITY

DIRECTIONS (Qs. 41-45): In these questions, relationships between different elements is shown in the statements. These statements are followed by two conclusion.

Give answer (a) if **only** conclusion **I** follows
Give answer (b) if **only** conclusion **II** follows
Give answer (c) if **either** conclusion **I** or conlcusion **II** follows
Give answer (d) if **neither** conclusions **I** nor conlcusion **II** follows
Give answer (e) if **both** conclusions **I and II** follows

41. **Statement:** $R \geq S \geq T > U > X; T < V < W$
Conclusions: **I.** $R > X$
II. $X < W$

42. **Statement:** $E = F < G < H; G \geq I$
Conclusions: **I.** $H > I$
II. $E \geq I$

43. **Statement:** $A > B > F > C; D > E > C$
Conclusions: **I.** $C < A$
II. $B > D$

44. **Statement:** $K \leq L \leq M = N; P \geq O \geq N$
Conclusions: **I.** $K < P$
II. $K = P$

45. **Statement:** $D < E < F < G; K > F$
Conclusions: **I.** $K \leq G$
II. $K > D$

46. Which of the following will come next in the following series?
0 9 0 1 9 0 1 2 9 0 1 2 3 9 0 1 2 3 4 9 0 1 2 3 4 5 9 0 1 2 3 4 5
(a) 0 (b) 6
(c) 9 (d) 7
(e) 4

DIRECTIONS (Qs. 47-49): Study the following information carefully and answer the given questions.

If A + B means A is the father of B
If A × B means A is the sister of B
If A $ B means A is the wife of B
If A % B means A is the mother of B
If A ÷ B means A is the son of B

47. What should come in place of the question mark, to establish that J is the brother of T in the expression?
J ÷ P % H ? T % L
(a) × (b) ÷
(c) $ (d) Either ÷ or ×
(e) Either + or ÷

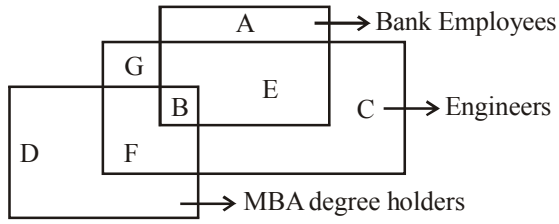
48. Which among the given expressions indicate that M is the daughter of D?
(a) L % R $ D + T × M (b) L + R $ D + M × T
(c) L % R % D + T ÷ M (d) D + L $ R + M × T
(e) L $ D ÷ R % M ÷ T

49. Which among the following options is true if the expresssion 'I + T % J × L ÷ K' is **definitely true**?
(a) L is the daughter of T (b) K is the son-in-law of I
(c) I is the grandmother of L (d) T is the father of L
(e) J is the brother of L

50. Veena walked 5m towards north, took a left turn and walked 7 m. She took a left turn again and walked 8m before taking a left turn and walking 7 m. She then took a final left turn and walked 1 m before stopping. How far is Veena from the starting point ?
(a) 3m (b) 6m
(c) 4m (d) 2m
(e) 7m

51. In a certain code IDEAS is written as HEDBR and WOULD is written as VPTMC. How will RIGHT be written in the same code ?
(a) QJHIS (b) QJFGS
(c) SHHGU (d) QJFIU
(e) QJFIS

DIRECTIONS (Qs. 52-55) : Each of the questions given below is based on the given diagram. The diagram shows three figures each representing Engineers, MBA degree holders and Bank employees.



52. Which of the following does the group B represent in the above diagram ?
(a) All such engineers who are not MBA degree holders
(b) Such bank employees who are engineers but not MBA degree holders
(c) All such engineers who are MBA degree holders but are not bank employees
(d) All such MBA degree holders who are not bank employees
(e) All such bank employees who are engineers as well MBA degree holders

53. Which of the following groups represents all such persons who are MBA degree holders but are neither engineers nor bank employees ?
(a) Only G (b) Only D
(c) D and G (d) Only C
(e) Not represented in the diagram

54. Which of the following represents such engineers who are MBA degree holders but not bank employees ?
(a) G and B
(b) Only F
(c) D
(d) G
(e) None of these

55. Which of the following correctly represents such engineers who are neither bank employees nor MBA degree holders?
(a) Only G (b) C and B
(c) A and D (d) C and G
(e) Only C

DIRECTIONS (Qs. 56-60): Study the given information carefully and answer the given questions.

Eight people - J, K, L, M, N, O, P and Q are sitting around a circular table facing the centre, not necessarily in the same order. O is sitting third to the right of M. There is only one person sitting between M and J. There are only three people between J and K. P is an immediate neighbour of J. There are only three people between P and L. N is second to the right of P.

56. Which of the following is **true** regarding the given arrangement?
(a) M is an immediate neighbour of K
(b) N is an immediate neighbour of J
(c) P is second to the left of O
(d) There are four people between N and O.
(e) None is true

57. Who is sitting second to the left of the one who is sitting second to the left of Q?
(a) M (b) K
(c) N (d) L
(e) J

58. 'Four of the following five are alike in a certain way based on their seating positions in the above arrangement and so form a group. Which one does **not** belong to the group?
(a) PQ (b) KL
(c) MN (d) QO
(e) KO

59. What is N's position with respect to K?
(a) Second to the left (b) Second to the right
(c) Third to the left (d) Third to the right
(e) Fourth to the left

60. How many people are sitting between K and P when counted from the right side of K?
(a) One (b) Two
(c) Three (d) None
(e) More than three

DIRECTIONS (Qs. 61-65): In each of the questions below, two statements are given followed by two conclusions numbered I and II. You have to take the two statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given conclusions logically follows from the given statement disregarding the commonly known facts.

Give answer (a) if **only** concluion **I** follows
Give answer (b) if **only** concluion **II** follows
Give answer (c) if **either** concluion **I** or conclusion **II** follows
Give answer (d) if **neither** conclusion **I** nor conclusion **II** follows
Give answer (e) if **both** conclusions **I and II** follows

61. Statements : Some rings are circles.
No circle is a square.
Conclusions : I. No ring is a square.
II. All rings are squares.

62. Statements : All rows are lines.
All lines are queues.
Conclusions: I. All rows are queues.
II. Atleast some queues are lines.

63. Statements : All laptops are computers.
Some laptops are notebooks.
Conclusions: I. Some notebooks are computers
II. All notebooks are computers.

64. Statements : Some participants are students.
Some students are boys.
Conclusions: I. No boy is a participant.
II. All boys are participants.

65. Statements : All sparrows are birds.
No birds is a reptile.
Conclusions: I. No sparrow is a reptile.
II. Some reptiles are sparrows.

DIRECTIONS (Qs. 66-70) : Study they following information carefully to answer the questions given below it.

Seven professionals A, B, C, D, E, F and G are practising their professions in different cities Chennai, Bangalore, Hyderabad, Mumbai, Ahmedabad, Jaipur and Bhubaneshwar, not necessarily in the same order. Each has a different profession-Doctor, Engineer, Pharmacist, Lawyer, Counsellor, Professor and Artist, not necessarily in the same order.

A is a Pharmacist and practises in Bhubaneshwar. D practises in Bangalore but is not a Doctor or an Artist. The one who practises in Hyderabad is a Professor. G is a Counsellor and does not practise in Mumbai or Chennai. E is a Lawyer and practises in Ahmedabad. F practises in Chennai but is not an artist. C practises in Mumbai.

66. What is D's profession?
(a) Doctor (b) Professor
(c) Engineer (d) Cannot be determined
(e) None of these

67. Who is the Professor?
(a) B (b) C
(c) D (d) E
(e) None of these

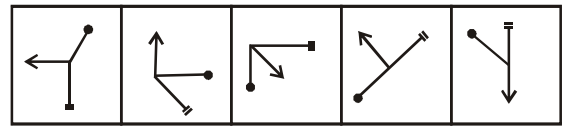
68. Which of the following combinations of profession and place is **correct**?
(a) Pharmacist-Jaipur (b) Engineer-Chennai
(c) Doctor-Bangalore (d) Artist-Mumbai
(e) None of these

69. Which of the following persons works in Jaipur?
(a) B (b) G
(c) C (d) B or G
(e) None of these

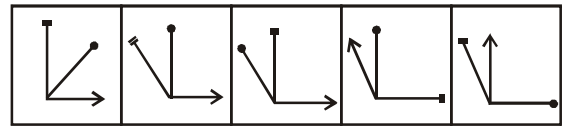
70. Who is the Doctor?
(a) D (b) B
(c) C (d) B or C
(e) None of these

DIRECTIONS (Qs. 71-75): In each of the questions given below which one of the five answer figures on the top should come after the problem figures on the bottom, if the sequence were continued?

71. Problem Figures



Answer Figures



(a) (b) (c) (d) (e)

72. Problem Figures

S	Δ	R	S	*	R	*	R	A	*	=	A	=	A	⅂
T	O	4	Δ	4	A	S	Δ	3	R	3	⅂	*	R	T
3	⅂	A	T	3	⅂	T	9	⅂	S	T	9	S	□	9

Answer Figures

A	⅂	T	⅂	K	=	=	O	⅂	=	K	⅂	=	K	⅂
=	*	□	A	T	9	A	T	9	S	*	A	A	T	9
S	K	9	*	S	□	*	S	□	□	9	T	*	S	□

(a) (b) (c) (d) (e)

73. Problem Figures

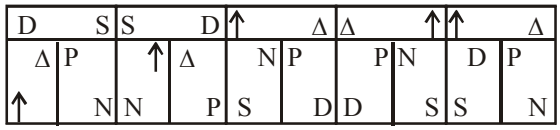
3	⊗	K / S R	⊗	3	R / 2 A	S	⊗	A / R 2	⊗	K	2 / A 3	K	⊗	3 / S R
2		A	S		K	K		3	S		R	A		2

Answer Figures

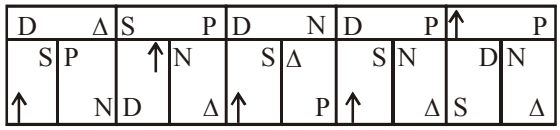
⊗	2	R / 3 S	A	K	R / 3 S	⊗	2	R / 3 S	A	K	S / R 3	A	K	3 / S R
K		A	2		⊗	K		A	2		⊗	2		⊗

(a) (b) (c) (d) (e)

74. Problem Figures

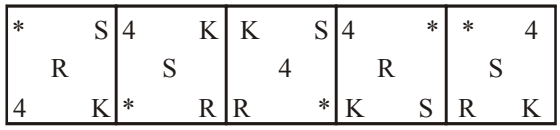


Answer Figures

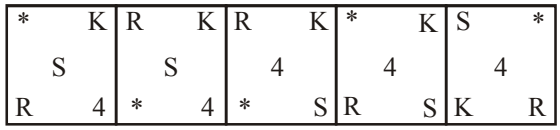


(a) (b) (c) (d) (e)

75. Problem Figures



Answer Figures



(a) (b) (c) (d) (e)

DIRECTIONS (Qs. 76-80) : Following questions are based on five words given below :

WIT BAR URN ELF TOP

(The new words formed after performing the mentioned operations may or may not necessarily be meaningful English words)

76. If in each of the words, all the alphabets are arranged in English alphabetical order within the word, how many words will NOT begin with a vowel ?
(a) None (b) One
(c) Two (d) Three
(e) More than three

77. How many letters are there in the English alphabetical series between second letter of the word which is second from the right and the third letter of the word which is third from the left of the given words?
(a) One (b) Two
(c) Three (d) Four
(e) Five

78. If in each of the given words, each of the consonants is changed to previous letter and each vowel is changed to next letter in the English alphabetical series, in how many words thus formed will no vowels appear ?
(a) None (b) One
(c) Two (d) Three
(e) More than three

79. If the last alphabet in each of the words is changed to the next alphabet in the English alphabetical order, how many words having two vowels (same or different vowels) will be formed ?
(a) None (b) One
(c) Two (d) Three
(e) Four

80. If the given words are arranged in the order as they would appear in a dictionary from left to right, which of the following will be fourth from the left ?
(a) WIT (b) BAR
(c) URN (d) ELF
(e) TOP

HINTS & EXPLANATIONS

1. (e) $\sqrt{?} = \pm 75$
Squaring on both the sides, we get
$? = 75 \times 75 = 5625$

2. (d) $\frac{21}{8} \div \frac{7}{72} \times \frac{1}{171} = ?$

or $? = \frac{21}{8} \div \frac{7}{72} \times \frac{1}{171} = \frac{3}{19}$

3. (c) $? = 4\frac{1}{2} + 6\frac{2}{3} + 5\frac{1}{3}$

$= (4+6+5) + \frac{3+4+2}{6} = 15 + \frac{9}{6} = 16\frac{1}{2}$

4. (d) $? = 792.02 + 101.32 - 306.76 = 586.58$

5. (a) 300% of 150 = ? % of 600
or , ? of 600 = 45000 or, ? = 75

6. (d) $34.95 + 240.016 + 23.9800 = 298.946$

7. (b) $48.95 - 32.006 = ?$
or, $? = 48.95 - 32.006 = 16.944$

8. (a) $3889 + 12.952 - ? = 3854.002$
or $? = 3889 + 12.952 - 3854.002 = 47.95$

9. (e) $? + 72.64 = 74.64$ or $? = 74.64 - 72.64 = 2.00$

10. (d) $6.25 \div 0.0025 = ?$ or $? = 6.25 \times \frac{1}{0.0025} = 2500$

11. (d) Clearly, $\frac{1}{7} < \frac{1}{\sqrt{7}} = \frac{\sqrt{7}}{7} < \sqrt{7}$

$\Rightarrow \frac{1}{7}$ is the smallest number.

12. (b) Let the sum be ₹ x

Now, $56 = \frac{x \times 8 \times (3-2)}{100} \Rightarrow x = ₹ 700$

13. (b) Let the cost price of the machine be ₹ x.

Then, selling price at a profit of 10% = ₹ $\frac{11x}{10}$

And the selling price at a loss of 10% = ₹ $\frac{9x}{10}$

Consequently, we find that

$$\left(\frac{11x}{10}-\frac{9x}{10}\right) = 80$$

$$\Rightarrow \frac{x}{5} = 80 \Rightarrow x = ₹400$$

14. (d) Let the capacity of the jar be of x bottles.
since 6 bottles were taken out from jar and 4 bottles of oil poured into it $\therefore$ 2 bottles were taken out
Therefore, we have

$$\Rightarrow \frac{4}{5}x - 2 = \frac{3}{4}x$$

$$\Rightarrow \frac{4}{5}x - \frac{3}{4}x = 2 \Rightarrow x = 40$$

15. (b) Average speed = $\frac{\text{Total distance}}{\text{Total time}}$

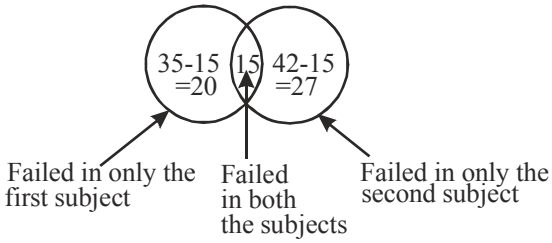
$$= \frac{80}{\frac{60}{40}+\frac{20}{20}} = \frac{80}{2.5} = 32\,\text{km/h}$$

16. (b) Let the usual speed of the aeroplane be x km/h.

Then, $\frac{1500}{x} - \frac{1}{2} = \frac{1500}{(x+250)}$

Solving, we get x = 750 km/h

17. (b) Using Venn Diagram



Thus, percentage of students who passed in both subjects
$= 100 - [(35-15)+(42-15)+15] = 100-(35+42-15)$
$= 100-(62) = 38\%$
and percentage of students who failed in both subject = 15%
Therefore, the percentage of students who passed in either subject = 100 – (38 + 15) = 100 – 53 = 47%
Hence, required no. of students who passed in either subject but not in both = $2500 \times \frac{47}{100} = 1175$

18. (d) Let the length and breadth of the rectangle be x and y cm, respectively.
Then, $(x-4)(y+3) = xy \Rightarrow 3x - 4y = 12$ ... (i)
Also, $(x-4) = (y+3)$ [sides of square]
$\Rightarrow x - y = 7$ ...(ii)
From (i) and (ii),
$x = 16$ and $y = 9$
Perimeter of the original rectangle = $2(x+y) = 50$ cm

19. (b) Raju's age at the time of marriage
$= 17 + 3 + 2 + 1 + 3 = 26$ years

20. (e) $5x + 6x + 7x = 180°$
$\Rightarrow 18x = 180°$

$\Rightarrow x = \frac{180}{18} = 10$

$\therefore$ Sum of the smallest and the largest angles
$= 12x = 12 \times 10 = 120°$

21. (b) $\sqrt{1000} + \frac{3.001}{4.987}$ of 1891.992 = ?

or ? = $100 + \frac{3}{5}$ of $1900 = 100 + 1140 = 1230$

22. (c) $? = 0.0004 \div 0.0001 \times 36.000009 = 4 \times 36.000009 \approx 154$

23. (a) ? = 137% of 12345 = (100+ 37)% of 12345
$\approx 12345 + 4570 \approx 17000$

24. (d) $\because$ $12.25 \times ? \times 21.6 = 3545.64$

$\because$ $? = \frac{3545.64}{264.6} = 13.4 \approx 13$

25. (a) $? = \sqrt[3]{4096} = \sqrt[3]{16 \times 16 \times 16} = 16$

26. (d) The series is $\times 1 + 1 \times 7, \times 2 + 2 \times 6, \times 3 + 3 \times 5$...

27. (e) The series is $\times 1 + 1^2, \times 2 + 2^2, \times 3 + 3^2$.., ...

28. (c) The series is $\times 1 + 2, \times 2 + 3, \times 3 + 4$, ...

29. (b) The series is $\times 0.5 + 0.5, \times 1 + 1, + 1.5 + 1.5$, ...

30. (a) The series is $\times 2, \times 4, + 5$, ...

31. (b) Interest earned in 1st half of a year

$$= 20,000 \times \frac{1}{2} \times \frac{20}{100} = 2000$$

Similarly,
During second half, interest earned = 2200
During second year, interest earned = 4840
(**Note :** Interest is calculated as compound)

32. (a) Required no. of ways = ${}^2P_2 \times {}^4P_4 = 48$

33. (c) Probability of selecting a month = $\frac{1}{12}$

13^{th} day of the month is Friday if its first day is Sunday and the probability of this = $\frac{1}{7}$

$\therefore$ Required probability = $\frac{1}{12} \cdot \frac{1}{7} = \frac{1}{84}$

34. (a) 4×2 men = 4×4 women = 5×4 children
$\Rightarrow 2$ men = 4 women = 5 children
$\therefore$ 2 men + 4 women + 10 children
= 20 children
$\therefore$ $M_1D_1 = M_2D_2$
$\Rightarrow 5 \times 4 = 20 \times D_2 \Rightarrow D_2 = 1$ day

35. (d) Total Time = 6 hours
Speed of the boat in still water = 4 km/hr.
Let the distance between M and N be D.
and the speed of the stream be x.

$$D\left[\frac{1}{4+x}+\frac{1}{4-x}\right] = 6 \text{ or } D\left[\frac{4-x+4-x}{(x+x)(4-x)}\right] = 6$$

$$D\left[\frac{8}{4^2-x^2}\right] = 6 \text{ or } \frac{8D}{16-x^2} = 6$$

$D = \frac{6}{8}\left(16 - x^2\right) = \frac{3}{4}\left(16 - x^2\right)$

Since the speed of the stream (x) is not given, the distance D cannot be determined.

36. (b) Difference between cost of 1 kg apple and cost of 1 kg guava in 5 cities.
J 160 – 60 = 100
D 130 – 90 = 40
C 180 – 120 = 60
H 90 – 30 = 60
R 40 – 20 = 20
∴ Cost is second lowest in Delhi.

37. (d) Cost of 1 kg guava in Jalandhar = ₹ 60
Cost of 2 kg grapes in chandigarh = ₹ 90 × 2 = ₹ 180

$\% = \frac{60}{180} \times 100 = 33.3 \approx 34\%$

38. (c) Cost of 3 kgs apples for Ram = 3 × 130 = ₹ 390
Cost of 2 kgs guavas for Ram = 2 × 90 = ₹ 180
Total cost that Ram pay = 390 + 180 = ₹ 570

39. (a) Total cost of 45 kgs grapes from Hoshiarpur = 45 × 190 = ₹ 8550

After discount 4% Ravinder paid = $8550 - \frac{8550 \times 4}{100}$

= ₹ 8208

40. (c) Cost of 1 kg apples from Ropar :
Cost of 1kg grapes from chandigarh
40 : 90
4 : 9 or $2^2 : 3^2$

41. (e) As (i) U > X (ii) T > U
Hence T > X
As R ≥ T So R > X I[st] follows
As (i) W > T (ii) T > X
Combining, we get W > X II[nd] follows.

42. (a) As (i) H > G (ii) G ≥ I
Combining, we get H > I I[st] follows.
As (i) G ≥ I (ii) G > E
Combining, we get E = I but E > I not possible.

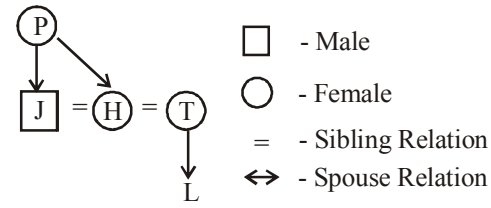
43. (a) As (i) A > F (ii) F > C
So A > C I[st] follows

44. (c) As (i) P ≥ O (ii) O ≥ N
So (i) P = N or (ii) P > N
(i) P = N
As (a) N = M (b) M ≥ L (c) L ≥ K
Combining, we get
(i) N = K (ii) N > K
If N = K then P = K II[nd] follow
If N > K then P > K I[st] follow
(ii) Similarly if P > N
then also both conclusion can be establish.

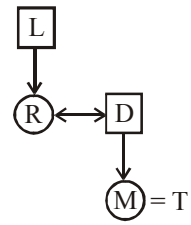
45. (b) As (i) K > F (ii) F > D
So K > D II[nd] follow
As (i) K > F (ii) G > F
So K ≤ G can't be establish.

46. (b) Series is :
09 / 019 / 0129 / 01239 / 012349 / 0123459 / 012345⑥9

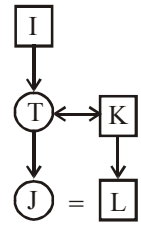
47. (a) J ÷ P % H × T % L can be represented in diagram. As follows.



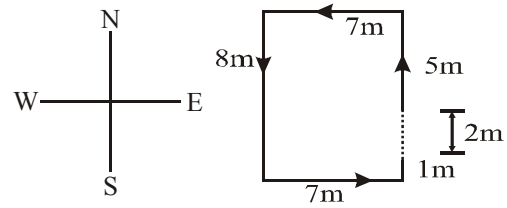
48. (b) L + R $ D + M × T



49. (b) I + T % J × L ÷ K



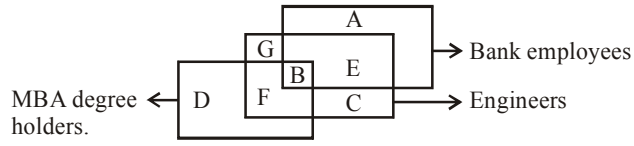
50. (d)



51. (e)

Coding for:	I	D	E	A	S
	–1↓	+1↓	–1↓	+1↓	–1↓
	H	E	D	B	R
Coding for:	W	O	U	L	D
	–1↓	+1↓	–1↓	+1↓	–1↓
	V	P	T	M	C
Similarly,	R	I	G	H	T
	–1↓	+1↓	–1↓	+1↓	–1↓
	Q	J	F	I	S

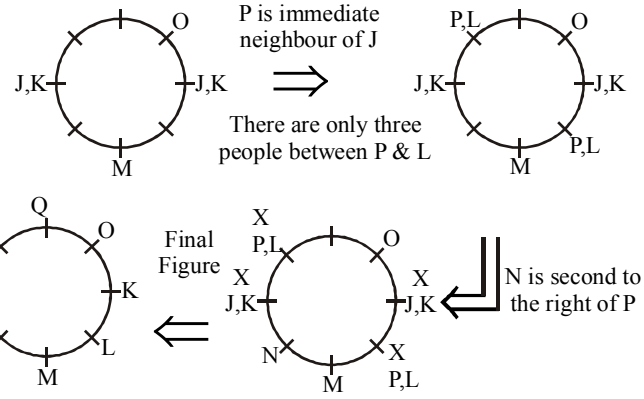
52-55.



52. (e) B is common to all diagram
53. (b) Letter D represents only MBA degree holders.
54. (b) Letter F represents such engineers who are MBA degree holders but not bank employees.
55. (e) Letter C represents only engineers (neither MBA nor bank employees).

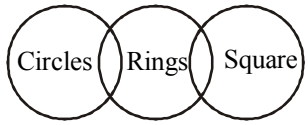
(Qs. 56-60).

Formation of fig according to information given

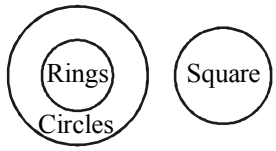


56. (b) N is immediate neighbour of J.
57. (a) 'K' is second to the left of 'Q' and 'M' is second to the left of 'K'.
58. (e) PQ, KL, MN, QO are in clockwise way and KO in anticlockwise way.
59. (c) Third to the left.
60. (b) Only two persons are sitting i.e. 'O' and 'Q'.

61. (d)

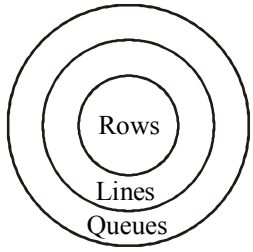


OR



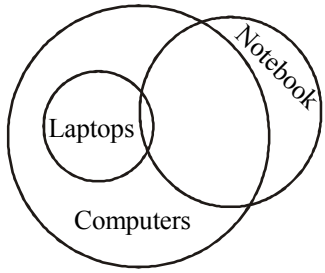
Conclusion-I : False
Conclusion-II : False

62. (e)

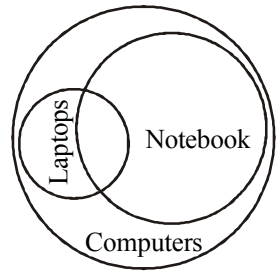


Conclusion-I : True
Conclusion-II : True

63. (a)

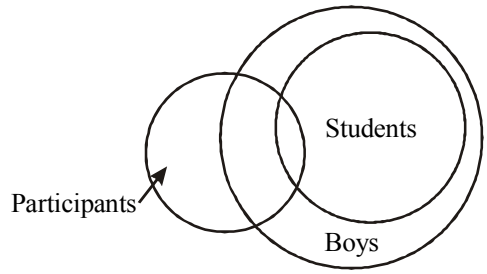


OR

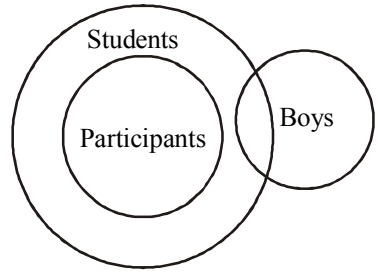


Conclusion-I : True
Conclusion-II : False

64. (d)

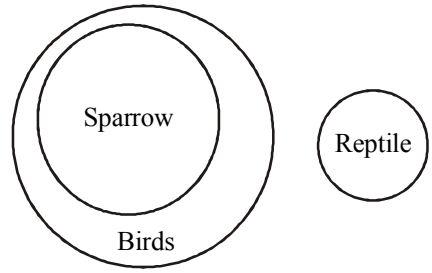


OR



Conclusion-I False
Conclusion-II False

65. (a)



Conclusion-I True
Conclusion-II False

(66-70):

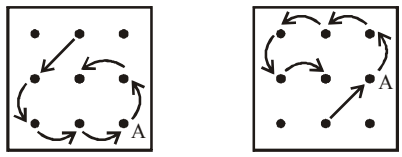
Professional	City	Profession
A	Bhubaneshwar	Pharmacist
B	Hyderabad	Professor
C	Mumbai	Artist
D	Bangalore	Engineer
E	Ahmedabad	Lawyer
F	Chennai	Doctor
G	Jaipur	Counsellor

66. (c) 67. (a) 68. (d) 69. (b) 70. (e)

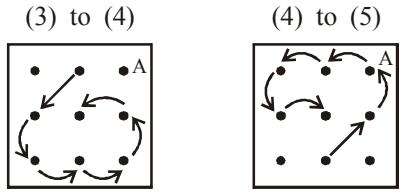
71. (b) In each subsequent figure, → design rotates through +90°, + 135°, + 180°, + 225° and so on clock wise. —●— design rotate + 45°, + 90° and so on in the same pair clockwise direction and ——■ design rotates ——■ 45° in each step anticlockwise.

72. (c) The movement of designs and other changes in designs can be shown as follows:

(1) to (2) (2) to (3)



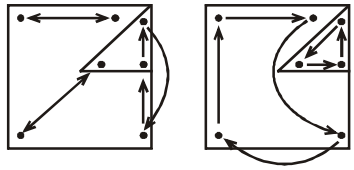
(3) to (4) (4) to (5)



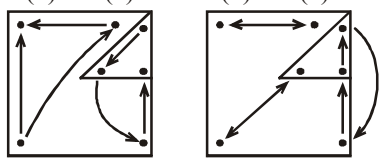
Therefore, similar changes would occur from problem figure(s) to answer figure as that have been occured from problem figure (1) to (2).

73. (b) The movement of designs and other changes in designs can be shown as follows :

(1) to (2) (2) to (3)



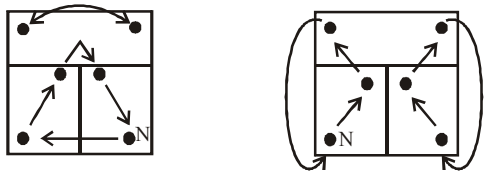
(3) to (4) (4) to (5)



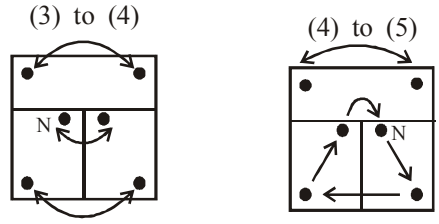
Therefore, similar changes would occur from problem figure (5) to Answer figure as that have been occured from problem figure (2) to (3).

74. (d) The movement of designs and other changes in designs can be shown as follows :

(1) to (2) (2) to (3)



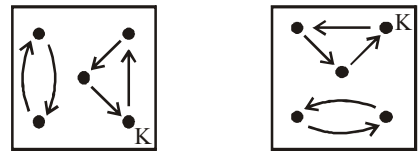
(3) to (4) (4) to (5)



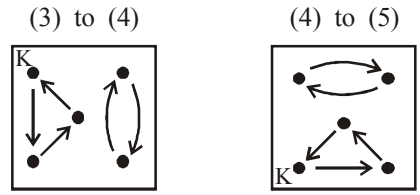
Therefore, similar changes would occur from problem figure (5) to answer figure as that have been occured from problem figure (2) to (3).

75. (c) The movement of designs and other changes in designs can be shown as follows:

(1) to (2) (2) to (3)



(3) to (4) (4) to (5)



Therefore, similar changes would occur from problem figure (5) to Answer figure as that have been occured from problem figure (1) to (2).

76. (b) After arranging –

ITW, ABR [NRU] EFL OPT

77. (e) 78. (c)

W	I	T	B	A	R	U	R	N	E	L	F	T	O	P
–1	+1	–1	–1	+1	–1	+1	–1	–1	+1	–1	–1	–1	+1	–1
V	J	S	A	B	Q	V	Q	M	F	K	E	S	P	O

79. (a)

	W	I	T	B	A	R	U	R	N	E	L	F	T	O	P
+1	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
	X	J	U	C	B	S	V	S	O	F	M	G	U	P	Q

80. (c) Dictionary oder is–

1	2	3	4	5
BAR	ELF	TOP	[URN]	WIT