PRACTICE SET 4

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 (Qs. 1-5) : What should come in place of question mark (?) in the following number series?

1. 36 20 ? 8 6 5
(a) 10 (b) 12
(c) 14 (d) 16
(e) None of these

2. 668 656 632 584 ? 296
(a) 392 (b) 438
(c) 488 (d) 536
(e) None of these

3. 1 121 441 961 1681 ?
(a) 2701 (b) 2511
(c) 2611 (d) 2801
(e) None of these

4. 9 49 201 1009 ? 20209 80841
(a) 4054 (b) 4049
(c) 4050 (d) 4041
(e) None of these

5. 31 35 44 60 85 ?
(a) 121 (b) 111
(c) 109 (d) 97
(e) None of these

6. The average of five positive numbers is 308. The average of first two numbers is 482.5 and the average of last two numbers is 258.5. What is the third number?
(a) 224 (b) 58
(c) 121 (d) Cannot be determined
(e) None of these

7. Sophia invests 25% of her monthly salary in insurance policies. She spends 15% of her monthly salary in shopping and 35% of her salary on household expenses. She saves the remaining amount of ₹ 9,050. What is Sophia's annual income?
(a) ₹ 84,500 (b) ₹ 5, 30, 000
(c) ₹ 3, 25, 200 (d) ₹ 4, 34, 400
(e) None of these

8. The number of employees in companies A, B and C are in a ratio of 3 : 2 : 4 respectively. If the number of employees in the three companies is increased by 20%, 30% and 15% respectively, what will be the new ratio of employees working in companies A, B and C respectively ?
(a) 18 : 13 : 24 (b) 13 : 18 : 23
(c) 17 : 3 : 23 (d) 18 : 11 : 23
(e) None of these

9. The ages of Vaibhav and Jagat are in the ratio of 12 : 7 respectively, After 6 years the ratio of their ages will be 3 : 2. What is the difference in their ages?
(a) 8 years (b) 12 years
(c) 9 years (d) 10 years
(e) None of these

10. What is the least number to be added to 8008 to make it a perfect square?
(a) 273 (b) 87
(c) 264 (d) 92
(e) None of these

11. The product of two consecutive odd numbers is 6723, What is the square root of the smaller number?
(a) 9 (b) 729.
(c) 6561 (d) 81
(e) None of these

12. 60 per cent of first number is 40 per cent of the second number. What is the respective ratio of the first number to the second number?
(a) 2 : 3 (b) 21 : 31
(c) 7 : 10 (d) Cannot be determined
(e) None of these

13. The owner of a book shop charges his customer 28% more than the cost price. If a customer paid ₹ 1,408 for some books, then what was the cost price of the books ?
(a) ₹1,100 (b) ₹1,111
(c) ₹1,110 (d) ₹1,000
(e) None of these

14. The difference between 56% of a number and 39% of the same number is 425. What is 63% of that number?
(a) 1525 (b) 1650
(c) 1700 (d) 1575
(e) None of these

15. Find the average of the following set of scores:
456, 328, 489, 453, 511, 328, 222, 205
(a) 374 (b) 388
(c) 362 (d) 391
(e) None of these

DIRECTIONS (Qs. 16-20) : What approximate value should come in place of the question mark (?) in the following questions? (You are not expected to calculate the exact value.)

16. $[(1.3)^2 \times (4.2)^2] \div 2.7 = ?$
(a) 7 (b) 21
(c) 18 (d) 11
(e) 16

17. $746 \div 32 \times 15 = ?$
(a) 350 (b) 345
(c) 355 (d) 340
(e) 335

18. $\sqrt{834} \times \sqrt{349} = ?$
(a) 525 (b) 556
(c) 534 (d) 550
(e) 540

19. $(3986 + 2416 + 3897) \div 754 = ?$
(a) 18 (b) 14
(c) 11 (d) 9
(e) 21

20. $41.25 + 11.085 \times 2.75 = ?$
(a) 63 (b) 67
(c) 76 (d) 72
(e) 80

DIRECTIONS (Qs. 21-25) : In the following questions, two equations numbered I and II are given. You have to solve both the equations and give answers.

(a) if $x > y$
(b) if $x \geq y$
(c) if $x < y$
(d) if $x \leq y$
(e) if $x = y$ or the relationship cannot be established

21. I. $12x^2 + 11x + 12 = 10x^2 + 22x$
II. $13y^2 - 18y + 3 = 9y^2 - 10y$

22. I. $\frac{18}{x^2} + \frac{6}{x} - \frac{12}{x^2} = \frac{8}{x^2}$
II. $y^3 + 9.68 + 5.64 = 16.95$

23. I. $\sqrt{1225x} + \sqrt{4900} = 0$
II. $(81)^{1/4}\, y + (343)^{1/3} = 0$

24. I. I. $\frac{(2)^5 + (11)^3}{6} = x^3$
II. $4y^3 = -(589 \div 4) + 5y^3$

25. I. $(x^{7/5} \div 9) = 169 \div x^{3/5}$
II. $y^{1/4} \times y^{1/4} \times 7 = 273 \div y^{1/2}$

DIRECTIONS (Qs. 26-30) : What should come in place of the question mark (?) in the following questions?

26. $(84)^2 - (67)^2 + \sqrt{?} = 2588$
(a) 361 (b) 529
(c) 441 (d) 625
(e) None of these

27. $668 \div 167 \times 284 = ?$
(a) 1156 (b) 1136
(c) 1096 (d) 1116
(e) None of these

28. $\sqrt[3]{10648} \times \sqrt[3]{5832} = ?$
(a) 396 (b) 216
(c) 432 (d) 576
(e) None of these

29. 60% of 25% of $\frac{5}{6}$th of ? = 630
(a) 5060 (b) 5200
(c) 4880 (d) 4500
(e) None of these

30. $(85410 + 36885 + 24705) \div 1600 = ?$
(a) 90.25 (b) 94.386
(c) 95.50 (d) 91.875
(e) None of these

31. What amount of compound interest can be obtained on an amount of ₹ 8, 840 at the rate of 5% p.a at the end of 3 years?
(a) ₹1,393.405 (b) ₹1,326
(c) ₹1,384.50 (d) ₹1340
(e) None of these

32. A trader sells 150 metres of cloth for ₹ 6, 600 and he sells 300 metres of cloth for ₹ 12, 750. How much concession does the trader give per metre of cloth, when he sells 300 metres of cloth?
(a) ₹3 (b) ₹2.5
(c) ₹1.5 (d) ₹2
(e) None of these

33. When 3888 is divided by the square of a number and the answer so obtained is multiplied by 21, the final answer so obtained is 252. What is the number?
(a) 324 (b) 16
(c) 256 (d) 144
(e) None of these

34. The sum of the digits of a two digit number is 14. The difference between the first digit and the second digit of the two digit number is 4. What is the two digit number ?
(a) 86 (b) 95
(c) 68 (d) 77
(e) None of these

35. A car runs at the speed of 40 when not serviced and runs at 65 kmph. when serviced. After servicing, the car covers a certain distance in 5 hours. How much **approximate** time will the car take to cover the same distance when not serviced?
(a) 10 (b) 7
(c) 12 (d) 8
(e) 6

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

Number of literates in various cities over the years
M = Males, F = Females

Year	2012		2013		2014		2015		2016	
City	M	F	M	F	M	F	M	F	M	F
U	15000	25000	18550	20000	18590	25000	25000	25500	28000	28800
V	12500	9200	14680	10520	16000	11000	16850	13680	16920	14360
W	18660	17380	18950	18000	18980	19000	19500	19500	19250	19600
X	14200	14350	14820	14500	15250	15000	15390	15250	16000	16200
Y	9700	8320	9990	8540	9870	8820	10200	10000	10520	10300

36. What is the total number of male literates in City W over the years?
(a) 97650 (b) 95670
(c) 99280 (d) 96570
(e) None of these

37. What is the total number of literates across the cities in the year 2016 ?
(a) 180280 (b) 182000
(c) 188050 (d) 180500
(e) None of these

38. What is the difference between the total number of female literates across the cities in the year 2013 and the year 2015 ?
(a) 11850 (b) 12000
(c) 11500 (d) 12800
(e) None of these

39. What is the ratio of literates of City X in the year 2012 to the literates of the same city in the year 2014 ?
(a) 581 : 624 (b) 64 : 75
(c) 571 : 605 (d) 84 : 131
(e) None of these

40. What is the average number of female literates across the cities in the year 2012 ?
(a) 18725 (b) 15872
(c) 17582 (d) 17852
(e) None of these

REASONING ABILITY

41. 'Talk' is related to 'Speak' in a certain way. Similarly, 'Honest' is related to 'Truthful'. Following the same logic, 'Listen' is related to '.....'.
(a) Music (b) Ears
(c) Hear (d) Ignore
(e) Sound

42. Three of the following are alike in a certain way and form a group. Find the odd one out.
(a) Bird (b) Insect
(c) Aeroplane (d) Kite
(e) None of these

43. If the 1st half of the English alphabet is written in the backward order, then find the 15th letter to the left of 20th letter from left.
(a) H (b) I
(c) Y (d) X
(e) N

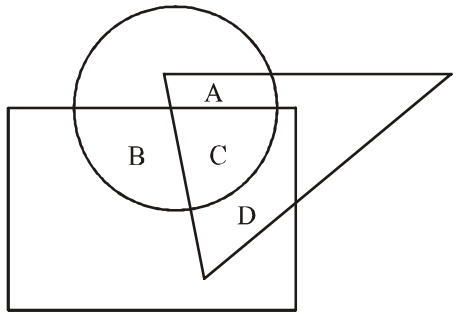
44. Select the combination of numbers so that letters arranged accordingly will form a meaningful word.
R A C E T
1 2 3 4 5
(a) 1, 2, 3, 4, 5 (b) 3, 2, 1, 4, 5
(c) 5, 2, 3, 4, 1 (d) 5, 1, 2, 3, 4
(e) None of these

45. 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

46. A, B, C, D and E each has different heights. D is only shorter than B. E is shorter than A and C. Who is the shortest of them?
(a) E (b) A
(c) C (d) Data inadequate
(e) None of these

47. ENGLAND is written as 1234526 and FRANCE as 785291. How will GREECE be written in this coding scheme ?
(a) 381191 (b) 381911
(c) 394132 (d) 562134
(e) None of these

48. In the following diagram, the triangle represents doctors, the circle represents players and the rectangle represents singers. Which region represents doctors who are singers but not players?



(a) A (b) B
(c) C (d) D
(e) None of these

49. Pointing to a photograph Arun said, 'She is the mother of my brother's son's wife's daughter.' How is Arun related to the lady's husband?
(a) Uncle (b) Daughter-in-law
(c) Cousin (d) Brother
(e) None of these

50. How many such pairs of letters are there in the word 'KINDNESS' each of which have as many letters between them in word as in the alphabets?
(a) Nil (b) One
(c) Two (d) Three
(d) None of these

DIRECTIONS (Qs. 51-55) : In each of the questions below are given three statements followed by three conclusions numbered I, III and III. You have to take the given statements to be true even, if they seems to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

51. **Statements** Some carrots are brinjals.
Some brinjals are apples.
All apples are bananas.
Conclusions I. Some apples are carrots.
II. Some bananas are brinjals.
III. Some bananas are carrots.
(a) Only I follows (b) Only II follows
(c) Only III follows (d) Either II or III follows
(e) None of these

52. **Statements** All keys are locks.
All locks are bangles.
All bangles are cars.
Conclusions I. Some cars are locks.
II. Some bangles are keys.
III. Some cars are keys.
(a) Only I follows (b) I and II follow
(c) I and III follow (d) II and III follow
(e) All I, II and III follow

53. **Statements** All fruits are leaves.
Some leaves are trees.
No tree is house.
Conclusions I. Some houses are fruits.
II. Some trees are fruits.
III. No house is a fruit.
(a) Only follows (b) Only II follows
(c) Only III follows (d) Either I or III follows
(e) None follows

54. **Statements** All tables are mirrors.
Some mirrors are chairs.
All chairs are glasses.
Conclusions I. Some glasses are mirrors.
II. Some chairs are tables.
III. Some mirrors are tables.
(a) I and II follow (b) II and III follow
(c) I and III follow (d) All I, II and III follow
(e) None of these

55. **Statements** All calculators are boxes.
All boxes are taps.
Some taps are machines.
Conclusions I. Some machines are boxes.
II. Some taps are calculators.
III. Some boxes are calculators.
(a) I and II follow (b) I and III follow
(c) II and III follow (d) All, II and III follow
(e) None of above

DIRECTIONS (Qs. 56-60) : Read the following information and answer the questions given below.

I. A, B, C, D, E, F, G and H are sitting in a row facing North
II. A is fourth to the right of E.
III. H is fourth to the left of D.
IV. C and F, who are not at the ends, are neighbours of B and E, respectively.
V. H is next to the left of A and A is the neighbour of B.

56. What is the position of F?
(a) Next to the right of E (b) Next to the right of G
(c) Sixth to the right of D (d) Between G and H
(e) None of these

57. Which of the following statements is not true?
(a) G is the neighbour of H and F
(b) B is next to the right of A
(c) E is at left end
(d) D is next to the right of B
(e) None of the above

58. Who is/are the neighbour/(s) of D?
(a) F alone (b) C alone
(c) B and C (d) Cannot be determined
(e) None of these

59. Which of the following statements is not true?
(a) H is second to the right of F
(b) E is fourth to the left of A
(c) D is fourth to the right of H
(d) All are true
(e) None of the above

60. Who are sitting at the ends?
(a) E and C (b) F and D.
(c) G and B (d) Data inadequate
(e) None of the above

DIRECTIONS (Qs. 61-65) : In each of the questions given below a group of digits is given followed by four combinations of letters/symbols. You have to find out which of the four combinations correctly represents the group of digits based on the letter/symbol codes and the conditions given below. If none of the four combinations represents the group of digits correctly, give (e) i.e. "None of these" as the answer.

Digit:	3	9	6	2	8	7	5	4	1
Symbol :	K	T	$	F	H	#	%	D	M

Conditions for the coding the group of digits:

1. If the first digit is odd and last digit is even, the codes for the first and the last digits are to be interchanged.
2. If the first as well as the last digit is even, both are to be coded by the code for last digit.
3. If the first as well as the last digit is odd, both are to be coded as 'X'.

61. 564923
(a) %$DTFK (b) K$DTFK
(c) X$DTFX (d) K$DTF%
(e) None of these

62. 658247
(a) $%HFD# (b) #%HFD$
(c) %$HFD# (d) %#HFD$
(e) None of these

63. 436958
(a) DK$T%D (b) DK$T%H
(c) HK$T%H (d) #%$HK#
(e) None of these

64. 756834
(a) #%$HKD (b) D%$HK#
(c) D%$HKD (d) #%$HK#
(e) None of these

65. 291378
(a) FTMK#H (b) XTMK#X
(c) HTMK#F (d) FTMK#F
(e) None of these

66. 128547
(a) XFH%DX (b) XFH#DX
(c) MFH%DX (d) XFH%D#
(e) None of these

DIRECTIONS (Qs. 67-70) : In each of these questions, relationship between different elements is shown in the statements. The statements are followed by two conclusions.

Give answer
(a) if only Conclusion I is true
(b) if only Conclusion II is true
(c) if either Conclusion I or II is true
(d) if neither Conclusion I nor II is true
(e) if both the Conclusions I and II are true

67. Statements $P > R, R < S \leq X, Y = X$
Conclusions I. $P < S$ II. $Y > R$

68. Statements $Z = C, B < A = N, C < B$
Conclusions I. $Z < B$ II. $N > Z$

69. Statements $T < V = W, X \geq Y, W > X$
Conclusions I. $V > Y$ II. $V < X$

70. Statements $J \geq K > P = R < N = S$
Conclusions I. $S \geq P$ II. $J < R$

DIRECTIONS (Qs. 71-72) : Study the following information carefully to answer the questions given below.

P, T, V, R, M, D, K and W are sitting around a circular table facing the centre. V is second to the left of T. T is fourth to the right of M. D and P are not immediate neighbours of T. D is third to the right of P. W is not an immediate neighbour of P. P is to the immediate left K.

71. Who is second to the left of K?
(a) P (b) R
(c) M (d) W
(e) Data inadequate

72. Who is to the immediate left of V?
(a) D (b) M
(c) W (d) Data inadequate
(e) None of these

73. Who is the third to the right of V?
(a) T (b) K
(c) P (d) M
(e) None of these

74. What is R's position with respect to V?
(a) Third to the right (b) Fifth to the right
(c) Third to the left (d) Second to the left
(e) Fourth to the left

75. Four of the following five are alike in a certain way based on their positions in the above sitting arrangement and so form a group. Which of the following does not belong to that group?
(a) DW (b) TP
(c) VM (d) RD
(e) KR

DIRECTIONS (Qs. 76-80): Read the following information carefully to answer the question:

P × Q means "P is sister of Q"
P ÷ Q means " P is mother of Q"
P + Q means " P is brother of Q"
P – Q means " P is father of Q"

76. Which of the following represent W is grandfather of H?
(a) W + T - H (b) W ÷ T – H
(c) W × T + H (d) W ÷ T + H
(e) None of these

77. Which of the following represent "M is nephew of R"?
(a) M ÷ T – R (b) R ÷ T – M
(c) R × T ÷ M × J (d) R ÷ T – M + J
(e) None of these

78. How T is related to S "W ÷ T – H + V – S"?
(a) sister (b) mother
(c) aunt (d) uncle
(e) None of these

79. The expression means "S ÷ T – H × V – N"?
(a) S is grandmother of N
(b) S is great grandmother of N
(c) S is mother of V
(d) N is grand son of S
(e) None of these

80. In a group of 6 students P, Q, R, S, T and U each one having different height. P is taller than T but not as tall as U. Q and U are not the tallest and also R is the shortest. Who is the tallest among them.
(a) P (b) S
(c) Q (d) U
(e) None of these

HINTS & EXPLANATIONS

1. (b) 36 20 12 8 6 5
÷2+2 ÷2+2 ÷2+2 ÷2+2 ÷2+2

2. (c) 668 656 632 584 488 296
−12 −24 −48 −96 −192
×2 ×2 ×2 ×2

3. (e) 1 121 441 961 1681 2601
1^2 11^2 21^2 31^2 41^2 51^2

4. (d) 9 49 201 1009 4041 20209 80841
×5+4 ×4+5 ×5+4 ×4+5 ×5+4 ×4+5

5. (a) 31 35 44 60 85 121
$+2^2$ $+3^2$ $+4^2$ $+5^2$ $+6^2$

6. (b) Third number
$= 5 \times 308 - 2 \times 482.5 - 2 \times 258.5$
$= 1540 - 965 - 517 = 58$

7. (d) Let Sophia's monthly salary = ₹. x.
ATQ,
Sophia's % monthly expenditure
$= (25 + 15 + 35)\% = 75\%$
Saving % $= 100 - 75 = 25\%$
$\therefore$ 25% of $x = 9050$
$\Rightarrow x = 9050 \times 4 = ₹36200$
$\therefore$ Sophia's annual income
$= ₹(12 \times 36200) = ₹434400$

8. (e) Let the number of employees in the companies A, B and C be $3x$, $2x$ and $4x$ respectively.
Required ratio
$$= \frac{3x \times 120}{100} : \frac{2x \times 130}{100} : \frac{4x \times 115}{100}$$
$= 18 : 13 : 23$

9. (d) Let the present ages of Vaibhav and Jagat be 12x and 7x years respectively.
According to the question,
$$\frac{12x + 6}{7x + 6} = \frac{3}{2}$$
$\Rightarrow 24x + 12 = 21x + 18$
$\Rightarrow 24x - 21x$
$= 18 - 12$
$\Rightarrow 3x = 6$
$$\Rightarrow x = \frac{6}{3} = 2$$
$\therefore$ Required difference $= 12x - 7x = 5x = 5 \times 2$
$= 10$ years

10. (d) $\sqrt{8008} \equiv 89.5$
$89^2 = 7921; 90^2 = 8100$
$\therefore$ Required number
$= 8100 - 8008 = 92$

11. (a) $81 \times 83 = 6723$
$\therefore$ Smaller number $= 81$
Now, $\sqrt{81} = 9$

12. (a) Let the first number be x and the second number be y.
According to the question,
$$x \times \frac{60}{100} = y \times \frac{40}{100}$$
$$\Rightarrow \frac{3x}{5} = \frac{2y}{5}$$
$$\Rightarrow \frac{x}{y} = \frac{2}{3}$$

13. (a) CP of the books
$$= ₹\left(\frac{100}{128} \times 1408\right)$$
$= ₹1100$

14. (d) Let the number be x.
According to the question,
$(56 - 39)\%$ of $x = 425$
$$\Rightarrow \frac{x \times 17}{100} = 425$$
$$\Rightarrow x = \frac{425 \times 100}{17} = \frac{42500}{17}$$
$\therefore$ 63 % of x
$$= \frac{42500}{17} \times \frac{63}{100} = 1575$$

15. (a) Required average
$$= \frac{456 + 328 + 489 + 453 + 511 + 328 + 222 + 205}{8}$$
$$= \frac{2992}{8} = 374$$

16. (d) $? = \frac{1.69 \times 17.64}{2.7} = 11.04 \approx 11$

17. (a) $? = 23.31 \times 15 = 350$

18. (e) $? = 28.88 \times 18.68 = 539.52 \approx 540$

19. (b) $? = \frac{10299}{754} \approx \frac{10300}{750} \approx 14$

20. (d) $? = 41.25 + 30.48$

$= 71.5 \approx 72$

21. (b) I. $12x^2 + 11x + 12 = 10x^2 + 22x$

$2x^2 - 11x + 12 = 0$

$2x^2 - 8x - 3x + 12 = 0$

$(x-4)(2x-3) = 0$

$x = 4, x = 3/2$

II. $13y^2 - 18y + 3 = 9y^2 - 10y$

$4y^2 - 8y + 3 = 0$

$4y^2 - 6y - 2y + 3 = 0$

$(2y-3)(2y-1) = 0$

$y = \frac{3}{2}, \frac{1}{2}$

$\therefore x \geq y$

22. (c) $\frac{18}{x^2} + \frac{6}{x} - \frac{12}{x^2} = \frac{8}{x^2}$

$\Rightarrow \frac{18 + 6x - 12}{x^2} = \frac{8}{x^2} \Rightarrow 6x + 6 = 8$

$\therefore x = \frac{2}{6} = 0.33$

II. $y^3 + 9.68 + 5.64 = 16.95$

$\Rightarrow y^3 = 16.95 - 15.32$

$\Rightarrow y^3 = 1.63 = y = \sqrt[3]{1.63}$

23. (a) I. $35x + 70 = 0$

$\therefore x = \frac{-70}{35} = -2$

II. $(81)^{1/4} y + (343)^{1/3} = 0$

$\Rightarrow 3y + 7 = 0 \Rightarrow 3y = -7$

$\therefore y = -\frac{7}{3} = -233 \therefore x > y$

24. (a) I. $\frac{(2)^5 + (11)^3}{6} = x^3$

$\Rightarrow \frac{32 + 1331}{6} = x^3 \Rightarrow \frac{1363}{6} = x^3$

$\therefore x^3 = 227.167$

II. $4y^3 = \frac{-589}{4} + 5y^3 \Rightarrow \frac{589}{4} = y^3$

$\therefore y^3 = 147.25 \therefore x > y$

25. (d) I. $x^{7/5} \div 9 = 169 \text{ I } x^{3/5}$

$\frac{x^{7/5}}{9} = \frac{169}{x^{3/5}}$

$\Rightarrow x^{10/5} = 9 \times 169 \Rightarrow x^2 = 9 \times 169$

$x = \pm(3 \times 13) = \pm 39$

II. $y^{1/4} \times y^{1/4} \times 7 = \frac{273}{y^{1/2}}$

$y = \frac{273}{7} = 39$

$x \leq y$

26. (c) $\Rightarrow (84 + 67)(84 - 67) + \sqrt{?} = 2588$

$\Rightarrow 151 \times 17 + \sqrt{?} = 2588$

$\Rightarrow \sqrt{?} = 2588 - 2567 = 21$

$\therefore ? = 21 \times 21 = 441$

27. (b) $? = 4 \times 284 = 1136$

28. (a) $? = \sqrt[3]{10648} \times \sqrt[3]{5832} = 22 \times 18 = 396$

29. (e) $\frac{60}{100} \times \frac{25}{100} \times \frac{5}{6} \times ? = 630$

$\therefore ? = 8 \times 630 = 5040$

30. (d) $? = 147000 \div 1600 = 91.875$

31. (a) $\text{C.I.} = P\left[\left(1 + \frac{r}{100}\right)^t - 1\right]$

$= 8840\left[\left(1 + \frac{5}{100}\right)^3 - 1\right] = 8840\left[\left(\frac{21}{20}\right)^3 - 1\right]$

$= 8840\left[\frac{9261}{8000} - 1\right] = \frac{8840 \times 1261}{8000} = ₹ 1393.405$

32. (c) SP of 150 metres of clothes = ₹ 6600

$\therefore$ SP of 1 m cloth = $₹\left[\frac{6600}{150}\right] = ₹ 44$

SP of 300 metres of cloth = ₹ 12750

$\therefore$ SP of 1 m cloth = $₹\left[\frac{12750}{300}\right] = ₹ 42.5$

$\therefore$ Concession = ₹ (44 – 42.5) = ₹ 1.5

33. (e) Let the number = *x*.

ATQ,

$\frac{3888}{x^2} \times 21 = 252$

$\Rightarrow x^2 = \frac{3888}{252} \times 21 = 324$

$\therefore x = \sqrt{324} = 18$

34. (b) Let two digit number = $10x + y$

ATQ,

$x + y = 14$ ..... (i)

$x - y = 4$ ..... (ii)

From equation (i) & (ii), we get

$y = 5$

Now, $x + y = 14$

$\therefore \quad x = 14 - 5 = 9$

Thus, required two-digit number

$= 10x + y = 10 \times 9 + 5$

$= 90 + 5 = 95$

35. (d) After servicing, the distance covered in 5 hours $= 65 \times 5 = 325$ km.

Without servicing, speed = 40 km/h

$$\therefore \quad \text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{325}{40} = 8 \text{ hours}$$

36. (e) 37. (e)

38. (e) Female literates in 2013 = 71560

Female literates in 2015 = 83930

Required difference

$= 83930 - 71560 = 12370$

39. (c) No. of literates of city X in 2012

$= 14200 + 14350 = 28550$

No. of literates of city X in 2014

$= 15250 + 15000 = 30250$

$\therefore$ Required ratio = 28550 : 30250

= 571 : 605

40. (d) Required average

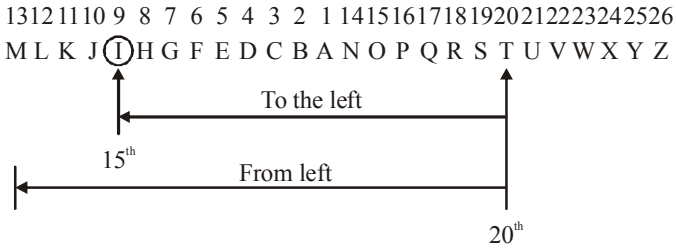
$$= \frac{28800 + 14360 + 19600 + 16200 + 10300}{5}$$

$$= \frac{89260}{5} = 17852$$

41. (c) As, talk is related to speak and honest to truthful. Similarly, listen is to hear.

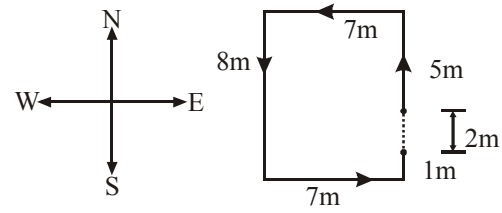
42. (b) All except the insect fly in the sky.

43. (b) I is the letter



44. (d) Clearly, the given letters, when arranged in the order 5, 1, 2, 3, 4 from the word 'TRACE' will form.

45. (d) The direction movement is as shown below:



So, the required distance = 8 – (5 + 1) = 8 – 6 ⇒ 2m

46. (a) According to the question,

B > D

A/C > E

$\therefore$ B > D > A/C > (E)

Clearly, shortest = E

47. (a) Going through information provided, we get codes for G → 3, R → 8, E → 1, C → 9.

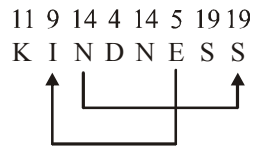
Therefore, Greece will be coded as 381191.

48. (d) Letter D represents those people who are doctors and singers but not players as it is common to triangle and rectangle but not circle.

49. (a) One's brother's son's wife's daughter implies paternal grand-daughter of one's brother. Now, the mother of paternal grand-daughter of one's brother implies wife of one's nephew.

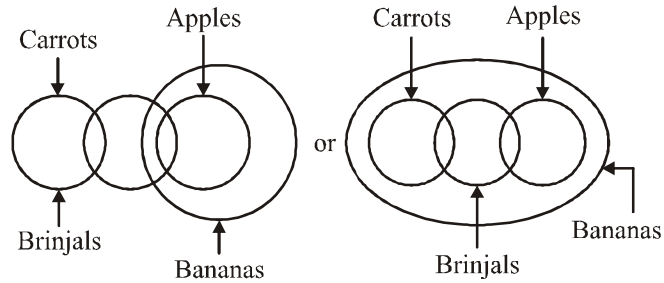
Thus, we can conclude that Arun is the paternal uncle of the female's husband.

50. (c)



$\therefore$ Letter pairs = EI, NS ⇒ Two

51. (b)

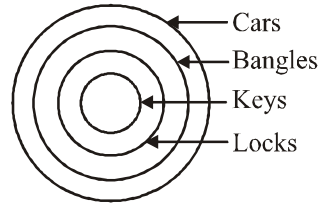


Conclusions I. Some apples are carrots. (×)

II. Some bananas are brinjals (√)

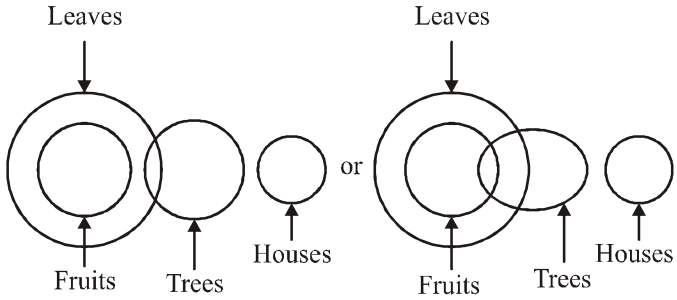
III. Some bananas are carrots (×)

52. (e)

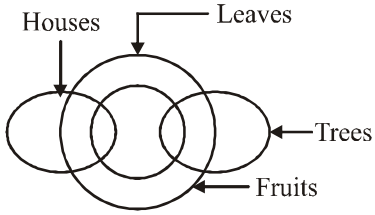


Conclusions I. Some cars are locks. (√)
II. Some bangles are keys. (√)
III. Some cars are keys. (√)

53. (d)

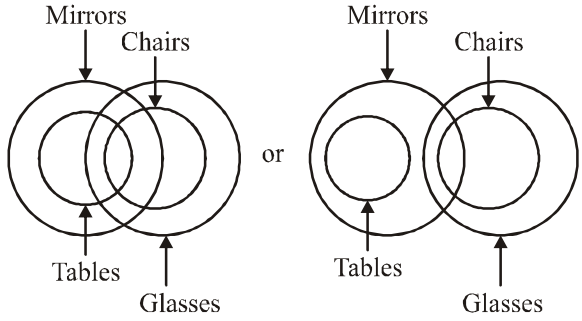


Or



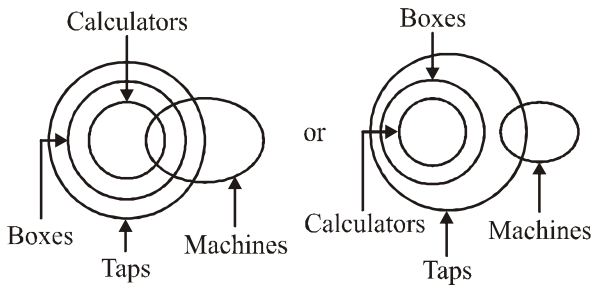
Conclusions I. Some houses are fruits. (×)
II. Some trees are fruits. (×)
III. No house is a fruit. (×)
Complementary pair (I-E)

54. (c)

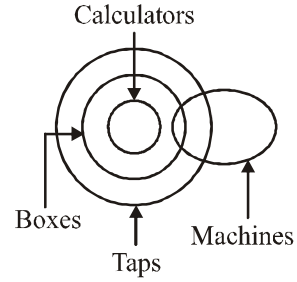


Conclusions I. Some glasses are mirrors. (√)
II. Some chairs are tables. (×)
III. Some mirrors are tables. (√)

55. (c)

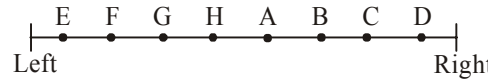


or



Conclusions I. Some machines are boxes. (×)
II. Some taps are calculators. (√)
III. Some boxes are calculators (√)

(56-60) :



56. (a) F is next to the right of E.
57. (d) D is 2nd to the right of B. Hence, statement (d) is not true.
58. (b) C alone is the neighbour of D.
59. (d) All the given statements are correct.
60. (d) E and D are sitting at the ends.

For (61-65): Simply follow the rules of the codes and do these sums.

61. (c) X$DTFX (Because 1st and last digits are odd.)
62. (a) $%HFD# (No any condition.)
63. (c) HK$T%H (Because 1st and the last digits are even.)
64. (b) D%$HK# (Because 1st digit is odd and the last digit is even.)
65. (e) HTMK#H (Because Ist and the last digits are even.)
66. (a) XFH% D X (Because Ist and last digits are odd)
67. (b) According to the question,

$P > R$ ...(i)
$R < S \leq X$ ...(ii)
$Y = X$ ...(iii)

On the combining statements (i), (ii) and (iii), we get

$P > R < S \leq X = Y$

Conclusions I. $P < S$ (false)
II. $Y > R$ (true)

So, it is clear that only Conclusion II is true.

68. (e) According to the question,

$Z = C$ ...(i)
$B < A = N$ ...(ii)
$C = B$ ...(iii)

On combining the statements (i), (ii) and (iii), we get

$Z = C < B < A = N$

Conclusions I. $Z < B$ (true)
II. $N > Z$ (true)

So, it is clear that both Conclusion I and II are true.

69. (a) According to the question,

$T < V = W$ ...(i)

$X \geq Y$ ...(ii)

$W = X$ ...(iii)

On combining statements (i), (ii) and (iii), we get

$T < V = W > X \geq Y$

Conclusions I. $V > Y$ (true)

II. $V < X$ (false)

So, it is clear that only Conclusion I is true.

70. (b) According to the question,

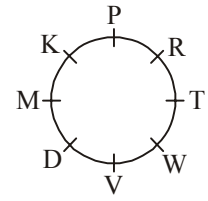
$J \geq K > P = R < N = S$

Conclusions I. $S \geq P$ (false)

II. $J > R$ (true)

So, it is clear that only Conclusion I is true.

(71-75) :



71. (b) Clearly, R is second to the left of K.

72. (a) Clearly, D is to the immediate left of V.

73. (e) Clearly, R is third to the right of V. So, none of the given options is correct.

74. (a) Clearly, R is the third to the right of V.

75. (d) In all the others, there is only one individual between the two. But, R and D are opposite to each other.

76. (e) 77. (e)

78. (e) T is grandfather.

79. (b)

80. (b) $S > (Q, U) > P > T > R$