PRACTICE SET 8

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

1. $\frac{3}{5}$ of $\frac{4}{7}$ of $\frac{5}{12}$ of $1015 = ?$

(a) 220 (b) 340
(c) 240 (d) 145
(e) None of these

2. $1.5 \times 0.025 + (?)^2 = 0.1$

(a) 0.28 (b) 0.27
(c) 0.25 (d) 0.235
(e) None of these

3. $1.5^2 \times \sqrt{0.0225} = ?$

(a) 0.3375 (b) 3.275
(c) 32.75 (d) 0.0375
(e) None of these

4. $\sqrt{0.0289} \times 12 \div 1.5 = ?$

(a) 1.36 (b) 2.06
(c) 13.90 (d) 14.80
(e) None of these

5. 125% of 260 + ?% of 700 = 500

(a) 32 (b) 56
(c) 23 (d) 46
(e) None of these

6. 45% of 750 – 25% of 480 = ?

(a) 216 (b) 217.50
(c) 245 (d) 236.50
(e) None of these

7. $75^{8.5} \div 75^{3.8} = 75^{?}$

(a) 4.9 (b) 3.6
(c) 3.3 (d) 4.7
(e) None of these

8. 5431 + 10500 – 4371 – 1357 = ?

(a) 9203 (b) 10003
(c) 10203 (d) 11203
(e) None of these

9. $3\frac{7}{11} + 7\frac{3}{11} \times 1\frac{1}{2} = ?$

(a) $13\frac{10}{11}$ (b) $14\frac{6}{11}$
(c) $14\frac{9}{11}$ (d) $10\frac{17}{22}$
(e) None of these

10. $1080 \div 12 \div 10 = ?$

(a) 900 (b) 90
(c) 120 (d) 12
(e) None of these

11. The number zero (0) is surrounded by the same 2-digit number on both (left and right) the sides; for example, 25025, 67067, etc. The largest number that always divides such a number is

(a) 7 (b) 11
(c) 13 (d) 1001
(e) None of these

12. If a certain sum of money becomes double at simple interest in 12 years, what would be the rate of interest per annum ?

(a) $8\frac{1}{3}$ (b) 10
(c) 12 (d) 14
(e) None of these

13. Three successive discounts of 10%, 12% and 15% amount to a single discount of
(a) 36.28 % (b) 34.68%
(c) 37% (d) 32.68%
(e) None of these

14. The ratio of the prices of two houses A and B was 4 : 5 last year. This year, the price of A is increased by 25% and that of B by ₹ 50000. If their prices are now in the ratio 9 : 10, the price of A last year was
(a) ₹3,60,000 (b) ₹4,50,000
(c) ₹4,80,000 (d) ₹5,00,000
(e) None of these

15. The number of 3-digit number exactly divisible by 5 is
(a) 181 (b) 180
(c) 179 (d) 199
(e) None of these

DIRECTIONS (Qs. 16-20) : Find the *next term* in the given series in each of the questions below.

16. 198, 194, 185, 169, (?)
(a) 136 (b) 144
(c) 9 (d) 92
(e) None of these

17. 6, 9, 7, 10, 8, 11, (?)
(a) 12 (b) 13
(c) 9 (d) 14
(e) None of these

18. 7 , 11, 19, 35, 67, (?)
(a) 121 (b) 153
(c) 141 (d) 133
(e) None of these

19. 5, 6, 10, 19, 35, (?)
(a) 55 (b) 65
(c) 60 (d) 70
(e) None of these

20. 1, 3, 8, 18, 35, (?)
(a) 61 (b) 72
(c) 67 (d) 52
(e) 71

21. The average age of A, B and C is 26 years. If the average age of A and C is 29 years, what is the age of B in years ?
(a) 26 (b) 20
(c) 29 (d) 23
(e) None of these

22. A man walks at the speed of 5 km/hr and runs at the speed of 10 km/hr. How much time will the man require to cover the distance of 28 km, if he covers half (first 14 km) of his journey walking and half of his journey running ?
(a) 8.4 hrs (b) 6 hrs
(c) 5 hrs (d) 4.2 hrs
(e) None of these

23. a, b, c and d are four consecutive numbers. If the sum of a and d is 103, what is the product of b and c ?
(a) 2652 (b) 2562
(c) 2970 (d) 2550
(e) None of these

24. The letters of the word SOCIETY are placed at random in a row. The probability that the three vowels come together is
(a) $\frac{1}{6}$ (b) $\frac{1}{7}$
(c) $\frac{2}{7}$ (d) $\frac{5}{6}$
(e) None of these

25. A man can swim 72 km upstream and 54 km downstream in 9 hours. Also, he can swim 84 km upstream and 90 km downstream in 12 hours. What is the speed of the man in still water?
(a) 9 kmph (b) 12 kmph
(c) 15 kmph (d) 18kmph
(e) 21 kmph

DIRECTIONS (Qs. 26-30) : In each of these questions an equation is given with a question mark (?) in place of a correct symbol. Based on the values on the right hand side and the left hand side of the question mark. you have to decide which of the following symbols will correct in place of the question mark.

Give answer If in place of question mark (?) following will come
(a) > (greater than),
(b) = (equal to)
(c) < (lesser than)
(d) ≥ (either greater than or equal to)
(e) ≤ (either lesser than or equal to)

26. $[(7 \times 3) + 12] \,?\, [\sqrt{225} + 15]$

27. $[(\sqrt{324} - \sqrt{49})] ? (\sqrt{121})$

28. $[(34 - (2)^2 \times 5]) \,?\, [42 \times 8 + (4 \times 4)]$

29. $[133 - (88 - 72)] \,?\, [(7)_2 \times 3]$

30. $21 \div 3 + (54 \div 9) \,?\, [(160 - 60) \div 4)$

DIRECTIONS (Qs. 31-35): 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).

31. $|\sqrt{10609}| \times |\sqrt{7938.81}| = ?$
(a) 9200 (b) 81973.
(c) 8553.3 (d) 8682.7
(e) None of these

32. $\left[\left[(13)^2\right]^3\right]^{?} = 2197$
(a) –3 (b) $\frac{1}{3}$
(c) 0.5 (d) – 4
(e) None of these

33. 18.4% of 656 + 12.7% of 864 = ?
(a) 253 (b) 231
(c) 211 (d) 241
(e) None of these

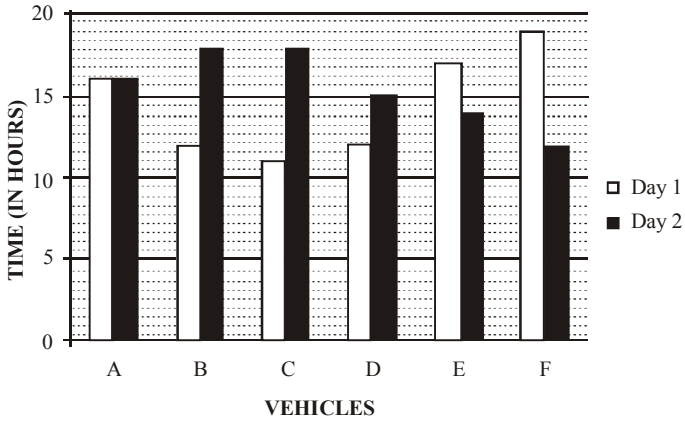
34. $(98.4)^2 + (33.6)^2 = ?$
(a) 10812 (b) 18012
(c) 10910 (d) 18102
(e) None of these

35. $8787 \div 343 \times \sqrt{50} = ?$

(a) 250 (b) 140
(c) 180 (d) 100
(e) 280

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

TIME TAKEN TO TRAVEL (IN HOURS) BY SIX VEHICLES ON TWO DIFFERENT DAYS



DISTANCE COVERED (IN KILOMETERS) BY SIX VEHICLES ON EACH DAY

Vehicle	Day 1	Day 2
A	832	864
B	516	774
C	693	810
D	552	765
E	935	546
F	703	636

36. Which of the following vehicles travelled at the same speed on both the days ?

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

37. What was the difference between the speed of vehicle A on day 1 and the speed of vehicle C on the same day ?

(a) 7 km/hr. (b) 12 km/hr.
(c) 11 km/hr. (d) 8 km/hr.
(e) None of these

38. What was the speed of vehicle C on day 2 in terms of meters per second ?

(a) 15.3 (b) 12.8
(c) 11.5 (d) 13.8
(e) None of these

39. The distance travelled by vehicle F on day 2 was approximately what percent of the distance travelled by it on day 1 ?

(a) 80 (b) 65
(c) 85 (d) 95
(e) 90

40. What is the respective ratio between the speeds of vehicle D and vehicle E on day 2 ?

(a) 15:13 (b) 17:13
(c) 13:11 (d) 17:14
(e) None of these

REASONING ABILITY

DIRECTIONS (Qs. 41-45) : In the following questions, the symbols #, %, @, © and δ are used with the following meanings illustrated.

'P % Q' means 'P is not greater than Q'.
'P δ Q' means 'P is not smaller than Q'.
'P # Q' means 'P is neither equal to nor smaller than Q'.
'P © Q' means 'P is neither equal to nor greater than Q'.
'P @ Q' means 'P is neither smaller than nor greater than Q'.
In each question, three statements showing relationships have been given, which are followed by three conclusions I, II and III. Assuming that the given statements are true, find out which conclusion(s) is/are **definitely true**.

41. **Statements :** M © K, K δ T, T © J
Conclusions :
I. J # K II. T # M
III. M # J
(a) None is true (b) Only I is true
(c) Only II is true (d) Only III is true
(e) II and III are true

42. **Statements :** F @ T, T % M, M # R
Conclusions :
I. R © T II. F @ M
III. F © M
(a) Only I is true (b) Only II is true
(c) Only III is true (d) either II or III is true
(e) II and III are true

43. **Statements :** J δ H, H @ B, B % N
Conclusions :
I. N δ H II. N @ J
III. J δ B
(a) I and II are true (b) II and III are true
(c) I and III are true (d) All I, II and III are true
(e) None of the above

44. **Statements :** B # T, T © K, K % M
Conclusions :
I. K # B
II. M # T
III. B # M
(a) Only I is true
(b) Only II is true
(c) Only III is true
(d) II and III are true
(e) None of the above

45. **Statements :** D % F, F δ K, K @ R
Conclusions :
I. R % F
II. R % D
III. R@D
(a) Only I is true (b) Only II is true
(c) Only III is true (d) I and II are true
(e) None of the above

DIRECTIONS (Q. 46-50) : Study the following arrangement carefully and answer the questions given below

D 5 δ R @ A K © 3 9 B J E F $ M P I 4 H 1 W 6 2 # U Q 8 T N

46. How many such numbers are there in the above arrangement each of which is immediately preceded by a symbol and immediately followed by a letter?
(a) None (b) One
(c) Two (d) Three
(e) More than three

47. Which of the following is the ninth to the right of the twenty second from the right end of the above arrangement ?
(a) E (b) I
(c) D (d) N
(e) None of these

48. How many such symbols are there in the above arrangement each of which is immediately preceded by a number and immediately followed by a letter?
(a) None (b) One
(c) Two (d) Three
(e) More than three

49. If all the numbers are dropped from the above arrangement, which of the following will be the eleventh from the left end?
(a) B (b) H
(c) $ (d)
(e) None of these

50. How many such consonants are there in the above arrangement each of which is immediately preceded by a number and immediately followed by another consonant ?
(a) None (b) One
(c) Two (d) Three
(e) More than three

DIRECTIONS (Q. 51-55) : Study the following arrangement carefully and answer the questions given below

M, D, K, R, T, H, W and A are sitting around a circle facing at the centre. D is second to the right of M who is fifth to the left of T. K is third to the right of R who is second to the right of D. H is second to the right of W.

51. Who is second to the right of A ?
(a) M (b) D
(c) K (d) Data inadequate
(e) None of the above

52. Who is third to the left of M ?
(a) A (b) T
(c) H (d) D
(e) Data inadequate

53. Who is fourth to the right of H ?
(a) A (b) T
(c) R (d) K
(e) None of these

54. In which of the following combinations is the first person sitting between the second and the third person ?
(a) KMW
(b) MWD
(c) RHT
(d) TAK
(e) None of the above

55. If A and W interchange their positions who will be third to the left of R ?
(a) M (b) D
(c) A (d) K
(e) None of these

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

In a certain code language :
"only in serial order" is written as "ve pu na to".
"order in the state" is written as "li ve su pu".
"the logical idea only" is written as "su na ri jo".
"in idea or theory" is written as "zt jo bk pu".

56. Which of the following is code of 'theory' ?
(a) zt (b) bk
(c) jo (d) pu
(e) Either 'zt' or 'bk'

57. The code 'li ri to ve' may represent
(a) serial order theory only
(b) only idea state order
(c) state logical serial order
(d) serial theory state the
(e) only the idea logical

58. Which of the following represent "logical idea is only order"?
(a) jo na ri ge ve (b) ve na ri jo pu
(c) ri ve na zt bk (d) bk to pu jo ve
(e) na ve su li pu

59. Which of the following is code of "logical" ?
(a) su (b) jo
(c) na (d) ri
(e) None of these

60. Which of the following is code of "serial" ?
(a) pu (b) to
(c) ve (d) su
(e) Cannot be determined

DIRECTIONS (Q. 61-65) : In each question below are three statements followed by three conclusions numbered I, II and III. You have to take the three 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 from the three given statements disregarding commonly known facts. Then decide which of the answers (a), (b), (c), (d) and (e) is the correct answer and indicate it on the answer sheet.

61. **Statements :** Some desks are chairs. All chairs are tables. Some tables are mats.
Conclusions : I. Some mats are desks.
II. Some tables are desks.
III. Some mats are chairs.
(a) Only I follows (b) Only II follows
(c) Only III follows (d) II and III follow
(e) None of the above

62. **Statements :** All sweets are fruits. No fruit is pencil. Some pencils are glasses.
Conclusions : I. Some glasses are sweets.
II. Some pencils are sweets.
III. No glass is sweet.
(a) Only I follows (b) Only II follows
(c) Only III follows (d) either I or III follows
(e) None of the above

63. **Statements :** Some books are flowers. Some flowers are chains. Some chains are hammers.
Conclusions : I. Some hammers are flowers.
II. Some chairs are books.
III. Some hammers are books.
(a) None follows (b) Only I follows
(c) Only II follows (d) Only III follows
(e) II and III follow

64. **Statements :** All roofs are cameras. Some cameras are photographs.
Some photographs are stores.
Conclusions : I. Some stores are cameras.
II. Some stores are roofs.
III. Some cameras are roofs.
(a) Only I follows (b) Only II follows
(c) Only III follows (d) II and III follow
(e) None of the above

65. **Statements :** Some nails are horses. All horses are tablets. All tablets are crows.
Conclusions : I. Some crows are nails.
II. Some tablets are nails.
III. Some crows are horses.
(a) Only I follows (b) I and II follows
(c) I and III follow (d) II and III follow
(e) All I, II and III follow

66. How many meaningful English words can be made with the letters ATLE using each letter only once in each word ?
(a) None (b) One
(c) Two (d) Three
(e) More than three

67. In a certain code GROWN is written as 7 @ % 36 and NAME is written as 64 $. How is GEAR written in that code?
(a) 74$@ (b) 7$4@
(c) 7%4@ (d) 7@$4
(e) None of these

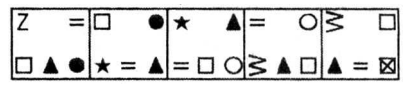
68. What should come next in the following letter series?
B D F H J L N A C E G I K M B D F H J L A C E G I K B D F H J
(a) B (b) L
(c) M (d) F
(e) None of these

69. In a certain code DISPLAY is written as RHCQZBM. How is GROUPED written in that code?
(a) PSHTEFQ (b) NQFVCDO
(c) NQFVEFQ (d) PSHTCDO
(e) None of these

70. Among P, Q, R, T and W each having different weight, T is heavier than W and lighter than only P. Q is not the lightest. Who among them is definitely the lightest ?
(a) R (b) W
(c) R or W (d) Data inadequate
(e) None of these

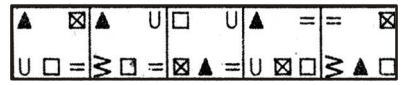
DIRECTIONS (71-75) : In each of the questions given below which one of the five answer figures should come after the problem figures if the sequence were continued ?

71. **Problem Figures**



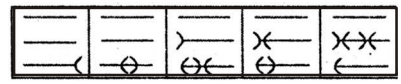
(a) (b) (c) (d) (e)

Answer Figures



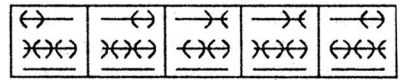
(a) (b) (c) (d) (e)

72. **Problem Figures**



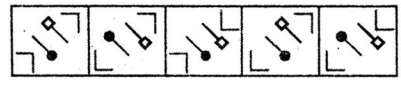
(a) (b) (c) (d) (e)

Answer Figures



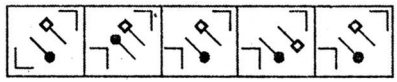
(a) (b) (c) (d) (e)

73. **Problem Figures**



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

Answer Figures



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

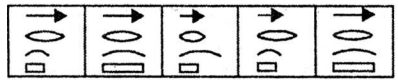
74. Problem Figures

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

Answer Figures

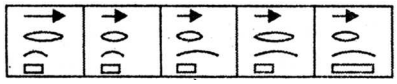
(a) (b) (c) (d) (e)

75. Problem Figures



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

Answer Figures



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

DIRECTIONS (Qs. 76-80): Study the given information carefully and answer the given questions:

Auditions for a show were held in seven different cities of India Chennai, Bangalore, Cochin, Mumbai, Delhi, Bhopal and Kolkata, not necessarily in the same order, during the first seven months of the year 2011 (starting in January and ending" in July). The auditions were held only in one city during a month. Auditions in only four cities were held between the Kolkata audition and the Cochin audition. The Kolkata audition was not held in June. Only one audition was held between the Kolkata audition and the Bangalore audition. The Chennai audition was held immediately after the Kolkata audition. The Delhi audition was held immediately before the Bhopal audition. The Bhopal audition was not held in May.

76. How many auditions were held between the Mumbai audition and the Chennai audition?
(a) One (b) Two
(c) Three (d) None
(e) More than three

77. Which of the following statements is **true** according to the given sequence?
(a) Mumbai audition was held in July
(b) Delhi audition was held in April
(c) Cochin audition was held before May
(d) Kolkata audition was held in January
(e) None is true

78. Four of the following five are alike in a certain way based on the given sequence and hence form a group.
Which one does **not** belong to the group?
(a) January-Kolkata (b) March-Bangalore
(c) June-Cochin (d) May-Delhi
(e) February-Chennai

79. During March, the audition was held in which of the following cities?
(a) Bangalore (b) Kolkata
(c) Mumbai (d) Chennai
(e) None of these

80. The audition in Mumbai was held in which of the following months?
(a) July (b) May
(c) February (d) March
(e) None of these

HINTS & EXPLANATIONS

1. (d) $\frac{3}{5}$ of $\frac{4}{7}$ of $\frac{5}{12}$ of $1015 = \frac{3}{5}\times\frac{4}{7}\times\frac{5}{12}\times 1015 = \frac{1015}{7} = 145$

2. (c) $1.5\times 0.025 + (?)^2 = 0.1 \Rightarrow (?)^2 = 0.1 - 1.5\times 0.025$

$\Rightarrow (?)^2 = 0.1 - 0.0375 \Rightarrow ? = \sqrt{.0625} = 0.25$

3. (a) $1.5^2 \times \sqrt{0.0375} = 2.25\times 0.15 = 0.3375$

4. (a) $\sqrt{0.0289}\times 12 \div 1.5$

$0.17\times 8 \Rightarrow 1.36$

5. (e) 125% of 260 + ?% of 700 = 500

$\Rightarrow$?% of 700 = 500 – 125% of 260

$\Rightarrow$?% of 700 = 175

$\therefore \quad ? = \frac{175\times 100}{700} = 25$

6. (b) 45% of 750 – 25% of 480

$= \frac{45\times 750}{100} - \frac{25\times 480}{100} = 337.5 - 120 = 217.5$

7. (d) $75^{8.5} \div 75^{3.8} = 75^{(8.5-3.8)} = 75^{4.7}$

9. (b) $3\frac{7}{11} + 7\frac{3}{11}\times 1\frac{1}{2} = \frac{40}{11} + \frac{80}{11}\times\frac{3}{2} = \frac{160}{11} = 14\frac{6}{11}$

10. (e) $1080 \div 12 \div 10 = \frac{1080}{12\times 10} = 9$

11. (d) First start with the option (d).

$1001\times 25 = 25025$

$1001\times 67 = 67067$ etc.

Thus 1001 is the largest number which divides the numbers of the type 25025, 67067 etc.

12. (a) Let the principal be P, then amount after 12 years = 2P

$\Rightarrow$ SI = (2P – P) = P

Now, $I = \frac{P\times r\times t}{100} \Rightarrow P = \frac{P\times r\times 12}{100}$

or $r = \frac{100}{12} = \frac{25}{3} = 8\frac{1}{3}\%$

13. (d) Applying successive discounts of 10%, 12% and 15% on 100, we get $100\times 0.9\times 0.88\times 0.85 = 67.32$

$\Rightarrow$ Single discount = 100 – 67.32=32.68

14. (a) Let the prices of two houses A and B be Rs $4x$ and Rs $5x$, respectively for the last year.

Then, the prices of A this year = Rs $(1.25\times 4x)$ and that of B = Rs $(5x + 50{,}000)$

This year, Ratio of their prices = 9 : 10

$\therefore \quad \frac{1.25\times 4x}{5x + 50{,}000} = \frac{9}{10}$

$\Rightarrow \quad 50x - 45x = 450000 \Rightarrow 5x = 4{,}50{,}000$

$\Rightarrow \quad x = 90{,}000$

Hence, the price of A last year was

$4x$ = Rs 3,60,000

15. (b) A three digit number to be exactly divisible by 5 must have either 0 or 5 at its units place.

Such numbers will be 100, 105, 110, ..., 995.

First term = 100, last term = 995

Let the required number be n.

To find the value of n, we may use the following formula of arithmetic progression,

$T_n = a + (n-1)\,d$..... (1)

Where d = common difference = 5

$T_n = 995$

a = 100

Hence from (1)

$995 = 100 + (n-1)\,5$

$\Rightarrow 5n = 900$

n = 180

Digits to be used = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

16. (b) 198 $\xrightarrow{-2^2}$ 194 $\xrightarrow{-3^2}$ 185 $\xrightarrow{-4^2}$ 169 $\xrightarrow{-5^2}$ 144

17. (c) The first, third, fifth .... and second, fourth .... terms are groups of consecutive natural numbers.

18. (e) The pattern of the number series is:

$7\times 2 - 3 = 11$

$11\times 2 - 3 = 19$

$19\times 2 - 3 = 35$

$35\times 2 - 3 = 67$

$67\times 2 - 3 = 134 - 3 = \boxed{131}$

19. (c) The pattern of the number series is:

$5 + 1^2 = 6$

$6 + 2^2 = 10$

$10 + 3^2 = 19$

$19 + 4^2 = 35$

$35 + 5^2 = 35 + 25 = \boxed{60}$

20. (a) The pattern of the number series is:

$1+2=3$

$3+(2+3)=8$

$8+(2+3+5)=18$

$18+(2+3+5+7)=35$

$35+(2+3+5+7+9)=61$

21. (b) Age of B = Age of (A + B + C) – Age of (A + C) = 26 × 3 – 29 × 2 = 78 – 58 = 20 years.

22. (d) Total time required $= \frac{14}{5}+\frac{14}{10}$

$= \frac{28+14}{10} = 4.2$ hrs

23. (a) Here $d = a + 3$

$a + a + 3 = 103$

$2a = 100$

$a = 50$

So, numbers are 50, 51, 52 and 53

$\therefore b \times c = 51 \times 52 = 2652$

24. (b) The word 'SOCIETY' contains seven distinct letters and they can be arranged at random in a row in $^7P_7$ ways, i.e. in 7! = 5040 ways.

Let us now consider those arrangements in which all the three vowels come together. So in this case we have to arrange four letters. S,C,T,Y and a pack of three vowels in a row which can be done in $^5P_5$ i.e. 5! = 120 ways.

Also, the three vowels in their pack can be arranged in $^3P_3$ i.e. 3! = 6 ways.

Hence, the number of arrangements in which the three vowels come together is 120 × 6 = 720

$\therefore$ The probability that the vowels come together $= \frac{720}{5040} = \frac{1}{7}$

25. (c) Let the speed of the man upstream be x kmph and that downstream be y kmph.

$\therefore \frac{72}{x}+\frac{54}{y} = 9 \quad \therefore \frac{8}{x}+\frac{6}{y} = 1$

$\therefore 8u + 6v = 1$ ...(i)

where $u = \frac{1}{x}$ and $v = \frac{1}{y}$

$\frac{84}{x}+\frac{90}{y} = 12 \qquad \therefore \frac{14}{x}+\frac{15}{y} = 2$

$\therefore 14u + 15v = 2$ ...(ii)

From equations (i) and (ii),

$u = \frac{1}{12}$ and $v = \frac{1}{18}$ $\therefore x = 12, y = 18$

$\therefore$ speed of the man in still water

$= \frac{12+18}{2}$ kmph = 15kmph

26. (a) LHS = 21 + 12 = 33

RHS = 15 + 15 = 30

LHS > RHS

27. (b) LHS = ± (18 – 7) = ± 11

RHS = $\sqrt{121} = \pm 11$

28. (a) LHS = (34 – 4) × 5 = 150

RHS = (16 × 8 + 16) = 16 (8 + 1) = 144

LHS > RHS

29. (c) LHS = 133 – 16 = 117

RHS = 49 × 3 = 147

LHS < RHS

30. (c) LHS = 7 + 6 = 13

RHS = 100 ÷ 4 = 25

LHS < RHS

31. (a) $|\sqrt{10609}| \times |\sqrt{7938.81}|$

$\sqrt{10609} = 103$, by long division method, as below:

```
       103
  10 | 10609
     | 100
 203 |   609
     |   609
         0
```

Also, $\sqrt{7938.81} = 89.1$, by long division method, as below:

```
         89.1
    8 | 79388.81
      | 64
  169 | 1538
      | 1521
 1781 |   1781
      |   1781
          0
```

Hence 103 × 89.1 = 9177.3 ≈ 9200

32. (c) Let x be there in place of question mark.

So, $\left[\left[(13)^2\right]^3\right]^x = 2197 \Rightarrow \left[(169)^3\right]^x = 2197$

$4826809^x = 2197$, taking $\log_{10}$ on both the sides

$x \log_{10}(4826809) = \log_{10} 2197$

$\Rightarrow x \times 6.68366 = 3.34183 \Rightarrow x = \frac{1}{2} \approx 0.5$

33. (b) 18.4% of 656 + 12.7% of 864 = 0.184 × 656 + 0.127 × 864 = 120.704 + 109.728 = 230.432 ≈ 231

34. (a) $(98.4)^2 + (33.6)^2 = 9682.56 + 1128.96 = 10811.52 \approx 10812$

35. (c) $8787 \div 343 \times \sqrt{50} = 25 \times 7 = 175 \approx 180$

36-40.

Vehicle	Day 1 Time in hr	Day 1 Distance in km	Day 1 Speed in km / hr	Day 2 Time in hr	Day 2 Distance in km	Day 2 Speed in km/hr
A	16	832	52	16	864	54
B	12	516	43	18	774	43
C	11	693	63	18	810	45
D	12	552	46	15	765	51
E	16	935	58.4	14	546	39
F	19	703	37	12	636	53

36. (d) Vehicle B.
37. (c) Speed of vehicle A on day 1 = 52 km/hr
Speed of vehicle C on day 1 = 63 km/hr
Difference = 63 – 52 = 11 km / hr
38. (e) Speed of vehicle can day 2 = 45 km/hr

$$\Rightarrow \left(45 \times \frac{5}{18}\right) \text{m/sec} = 12.5 \text{m/sec}$$

39. (e) Percentage

$$= \frac{\text{Distance travelled by vehicle F on day 2}}{\text{Distance travelled by vehicle F on day 1}} \times 100$$

$$= \frac{636}{703} \times 100 \approx \frac{630}{700} \times 100 \approx 90\%$$

40. (b) Speed of vehicle D on day 2 = 51
Speed of vehicle E on day 2 = 39

$$\text{Required ratio} = \frac{51}{39} = \frac{17}{13} \text{ or } 17:13$$

41. (a) 42. (d) 43. (a)
44. (a) 45. (b) 46. (a)
47. (b) 48. (c) 49. (d)
50. (c) 51. (c) 52. (b)
53. (a) 54. (a) 55. (b)

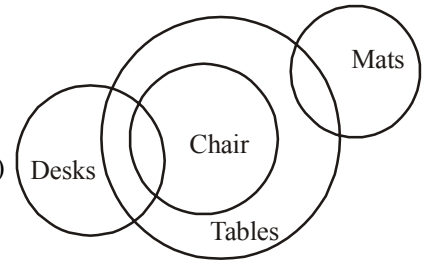
56-60.

only in serial order → ve pu na to
order in the state → li ve su pu
the logical idea only → su na ri jo
in idea or theory → zt jo bk pu

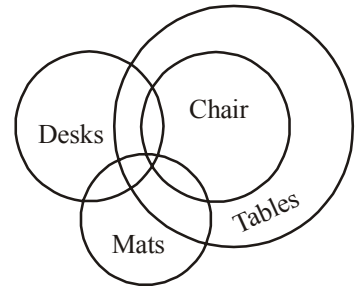
Codes are :
only ⇒ na the ⇒ su or ⇒ zt or bk
in ⇒ pu state ⇒ li theory ⇒ zt or bk
serial ⇒ to logical ⇒ ri
order ⇒ ve idea ⇒ jo

56. (e) The code of 'theory' is either 'zt' or 'bk',
57. (c) li ⇒ state
ri ⇒ logical
to ⇒ serial
ve ⇒ order
58. (a) logical ⇒ ri
idea ⇒ jo
only ⇒ na
order ⇒ ve
The code for 'is' may be 'ge'
59. (d) logical ⇒ ri
60. (b) serial ⇒ to

61. (b)

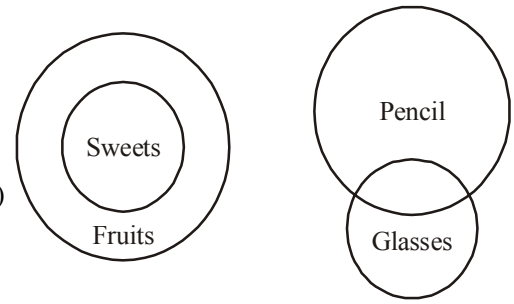


or

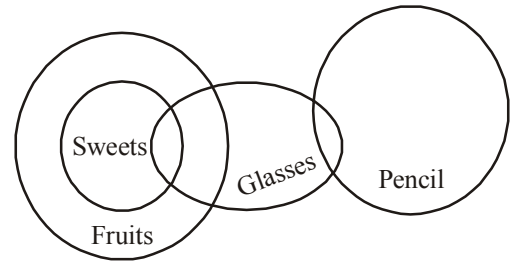


I. False II. True III. False

62. (d)

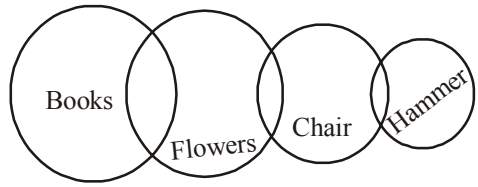


or

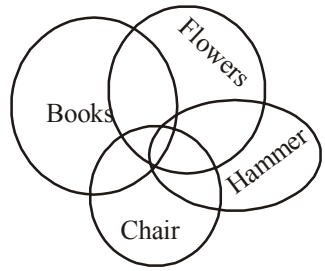


II. False. From both figures it is clear that either I or III follows.

63. (a)

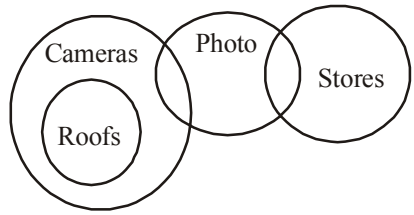


or

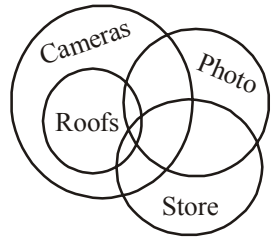


I. False II. False III. False

64. (c)

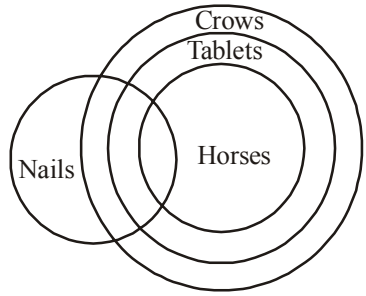


or



I. False II. False III. True

65. (e)

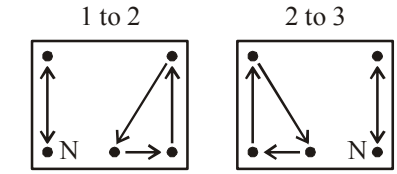


I. True II. True III. True

66. (a) 67. (b) 68. (e)

69. (c) 70. (c)

71. (a) The movement and other changes in designs can be shown as :



These two steps are repeated alternately.

72. (d) In the subsequent figures respectively one, two zero..... curve(s) is/are added and curves move along the line segment and get reversed in each subsequent figure.

73. (c) In the subsequent figures one design is left intact while other three designs are inverted.

74. (d) In the subsequent figures the star moves three steps in clockwise direction inside the hexagon after every two figures. The equal sign moves respectively one and two step(s) in clockwise direction along the sides of the hexagon. The design C moves in and out the hexagon in the subsequent figures and moves respectively two and one step(s) in clockwise direction. In other words, this problem is based on the rule (1) = (5) and hence (2) = (6).

75. (e) In the subsequent figures respectively two and three designs change size alternately in a set order.

(Qs. 76-80).

From the information given we can draw the following table

S.No.	Month	City
1.	January	Mumbai
2.	February	Kolkata
3.	March	Channai
4.	April	Bangalore
5.	May	Delhi
6.	June	Bhopal
7.	July	Cochin

76. (a) Only one audition held in Kolkata.

78. (d) (May-Delhi) is correct sequence rest are in Month (+ 1) city manner.

79. (d) In March audition held in Channai.

80. (e) Audition in Mumbai held in January.