PRACTICE SET 14

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. 1-15) : What should come in place of the question mark (?) in the following questions?

1. 16% of $450 \div ?\%$ of $250 = 4.8$

(a) 12 (b) 6
(c) 4 (d) 10
(e) None of these

2. 19.5% of $524 = ?$

(a) 102.18 (b) 122.81
(c) 120.18 (d) 112.81
(e) None of these

3. $\sqrt{?} - 11 = \sqrt{1521}$

(a) $\sqrt{2500}$ (b) $(28)^2$
(c) $\sqrt{28}$ (d) 50
(e) None of these

4. $700 \div 70 \div 0.5 = ?$

(a) 10 (b) 2.5
(c) 1.5 (d) 20
(e) None of these

5. $12.8 \times 4.5 \times 2.2 = ?$

(a) 168.72 (b) 126.72
(c) 128.27 (d) 162.72
(e) None of these

6. $55 \div 5.5 - 0.5 = ?$

(a) 11 (b) 10
(c) 8.5 (d) 10.5
(e) None of these

7. $(5 \times 5 \times 5 \times 5 \times 5 \times 5)^4 \times (5 \times 5)^6 \div (5)^2 = (25)^?$

(a) 10 (b) 17
(c) 19 (d) 12
(e) None of these

8. $8059 - 7263 = ? \times 40$

(a) 19.9 (b) 18.7
(c) 15.9 (d) 17.7
(e) None of these

9. $4 \times ? = 4062 \div 5$

(a) 203.1 (b) 213.1
(c) 205.1 (d) 215.1
(e) None of these

10. $3.5 \times (80 \div 2.5) = ?$

(a) 122 (b) 111
(c) 222 (d) 212
(e) None of these

11. $5\frac{1}{5}+2\frac{3}{5}+1\frac{2}{5}=?$

(a) $7\frac{4}{5}$ (b) $8\frac{3}{5}$

(c) $6\frac{2}{5}$ (d) $9\frac{1}{5}$

(e) None of these

12. 13% of 258 – ? = 10

(a) 23.45 (b) 24.53

(c) 23.54 (d) 24.35

(e) None of these

13. $\frac{4}{5}\times 2\frac{3}{4}\div\frac{5}{8}=?$

(a) $4\frac{12}{35}$ (b) $1\frac{12}{35}$

(c) $2\frac{11}{35}$ (d) $3\frac{13}{25}$

(e) None of these

14. 623.15 – 218.82 – 321.43 = ?

(a) 89.2 (b) 82.2

(c) 89.9 (d) 79.2

(e) None of these

15. 5437 – 3153 + 2284 = ? × 50

(a) 96.66 (b) 91.36

(c) 96.13 (d) 93. 16

(e) None of these

DIRECTIONS (Qs. 16-20) : What should come in place of the question mark (?) in the following number series?

16. 2 16 112 672 3360 13440 ?

(a) 3430 (b) 3340

(c) 40320 (d) 43240

(e) None of these

17. 4 9 19 ? 79 159 319

(a) 59 (b) 39

(c) 49 (d) 29

(e) None of these

18. 4000 2000 1000 500 250 125 ?

(a) 80 (b) 65

(c) 62.5 (d) 83.5

(e) None of these

19. 588 563 540 519 ? 483 468

(a) 500 (b) 496

(c) 494 (d) 490

(e) None of these

20. 121 ? 81 64 49 36 25

(a) 92 (b) 114

(c) 98 (d) 100

(e) None of these

21. The sum of 15% of a positive number and 10% of the same number is 70. What is twice of that number?

(a) 440 (b) 280

(c) 560 (d) 140

(e) None of these

22. Vikram scored 72 per cent marks in five subjects together, viz; Hindi, Science, Maths, English and Sanskrit together, where in the maximum marks of each subject were 100. How many marks did Vikram score in Science if he scored 80 marks in Hindi, 70 marks in Sanskrit, 76 marks in Maths and 65 marks in English?

(a) 72 (b) 69

(c) 59 (d) 71

(e) None of these

23. The respective ratio between Pooja's, Prarthana's and Falguni's monthly income is 53:70: 57. If Prarthana's annual income is ₹4,20,000, what is the sum of Pooja's and Falguni's annual incomes? (In some cases monthly income and in some cases annual income is used.)

(a) ₹ 5,92,500 (b) ₹ 6,83,500

(c) ₹ 6,60,000 (d) ₹ 7,79,200

(e) None of these

24. Manhar sold an item for ₹ 8,400 and incurred a loss of 25%. At what price should he have sold the item to have gained a profit of 40%?

(a) ₹ 15,680

(b) ₹ 16,220

(c) ₹ 14,540

(d) Cannot be determined

(e) None of these

25. What will come in place of both the question marks (?) in the following question?

$$\frac{(?)^{2.3}}{8}=\frac{2}{(?)^{1.7}}$$

(a) 8 (b) 1

(c) 4 (d) 16

(e) 2

26. What would be the simple interest accrued in 4 years on a principal of ₹16,500 at the rate of 16 p.c.p.a.?

(a) ₹ 11,560 (b) ₹ 10,250

(c) ₹ 12,500 (d) ₹ 9,980

(e) None of these

27. A truck covers a distance of 360 km in 8 hours. A car covers the same distance in 6 hours. What is the respective ratio between the speed of the truck and the car?

(a) 3 : 5 (b) 3 : 4
(c) 1 : 2 (d) 4 : 5
(e) None of these

28. In order to pass in an exam a student is required to get 975 marks out of the aggregate marks. Priya got 870 marks and was declared failed by 7 per cent. What are the maximum aggregate marks a student can get in the examination?

(a) 1500
(b) 1000
(c) 1200
(d) Cannot be determined
(e) None of these

29. The average of four consecutive numbers A, B, C and D respectively is 56.5. What is the product of A and C?

(a) 3363 (b) 3306
(c) 3192 (d) 3080
(e) None of these

30. Parag walks 226 metres everyday. How many kilometres will he walk in five weeks?

(a) 6.57 (b) 7.91
(c) 8.23 (d) 9.41
(e) None of these

31. On children's day sweets were to be equally distributed amongst 200 children. But on that particular day 40 children remained absent; hence each child got 2 sweets extra. How many sweets were distributed?

(a) 3000 (b) 1500
(c) 2000 (d) 1600
(e) Cannot be determined

32. The perimeter of a square is one-fourth the perimeter of a rectangle. If the perimeter of the square is 44 cm and the length of the rectangle is 51 cm, what is the difference between the breadth of the rectangle and the side of the square?

(a) 30 cm (b) 18 cm
(c) 26 cm (d) 32 cm
(e) None of these

33. What is the difference between the compound interest and simple interest accrued on an amount of ₹12,000 at the end of three years at the rate of 12%?

(a) ₹ 539.136 (b) ₹ 602.242
(c) ₹ 495.248 (d) ₹ 488.322
(e) None of these

34. The area of a rectangle is equal to the area of a circle with circumference equal to 220 metres. What is the length of the rectangle if its breadth is 50 metres?

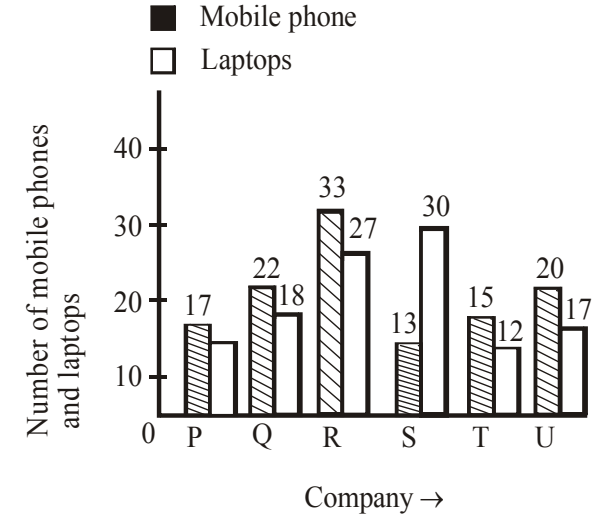
(a) 56 metres (b) 83 metres
(c) 77 metres (d) 69 metres
(e) None of these

35. Prashant incurred a loss of 75 per cent on selling an article for ₹ 6,800. What was the cost price of the article?

(a) ₹ 27,700 (b) ₹ 25,600
(c) ₹ 21,250 (d) ₹ 29,000
(e) None of these

DIRECTIONS (Qs. 36-40) : In the following bar diagram, the number of mobile phones and laptops (in thousands) sold by 6 different companies in a certain month has been given. Study the bar diagram carefully to answer the questions.

Number of mobile phones and laptops (in thousands) sold by 6 different companies in a month.



36. What is the average number of mobile phones sold by all companies taken together in a month ?

(a) 18 thousands (b) 20 thousands
(c) 17 thousands (d) 19 thousands
(e) None of these

37. By what percent the number of mobile phones sold by company U is more than that of company T ?

(a) $33\frac{1}{3}\%$ (b) 22%
(c) 20% (d) $23\frac{2}{3}\%$
(e) None of these

38. What is the average of the number of laptops sold by companies P, R and T ?

(a) 17 thousands (b) 17.3 thousands
(c) 18 thousands (d) 16 thousands
(e) None of these

39. What is the respective ratio between the number of mobile phones sold by company T and that of laptops sold by company Q ?

(a) 3 : 5 (b) 6 : 5
(c) 5 : 3 (d) 5 : 6
(e) None of these

40. What is the respective ratio of the numbers of laptops sold by company Q and company R?
(a) 2 : 5 (b) 4 : 3
(c) 3 : 4 (d) 3 : 2
(e) 2 : 3

REASONING ABILITY

41. In a certain code, a number 13479 is written as AQFJL and 2568 is written as DMPN. How is 396824 written in that code ?
(a) QLPNMJ (b) QLPNMF
(c) QLPMNF (d) QLPNDF
(e) None of these

42. In the following sequence or instructions, 1 stands for Run, 2 stands for Stop, 3 stands for Go, 4 stands for Sit and 5 stands for Wait. If the sequence is continued, which instruction will come next ?
4 4 5 4 5 3 4 5 3 1 4 5 3 1 2 4 5 4 5 3 4 5 3
(a) Wait (b) Sit
(c) Stop (d) Run
(e) None of these

43. If the first and second letters in the word DEPRESSION were interchanged, also the third and the fourth letters, the fifth and the sixth letters and so on, which of the following would be the seventh letter from the right ?
(a) R (b) O
(c) S (d) P
(e) None of these

44. In a certain code '*na pa ka so*' means 'birds fly very high', '*ri so la pa*' means 'birds are very beautiful' and '*ti me ka bo*' means 'the parrots could fly'. Which of the following is the code for 'high' in that language ?
(a) *na* (b) *ka*
(c) *bo* (d) *so*
(e) None of these

45. If 'P' denotes '–'; 'Q' denotes ' ÷ ', 'R' de notes '×' and 'W' denotes '+' then-
48 Q 12 R 10 P 8 W 4=?
(a) 56 (b) 40
(c) 52 (d) 44
(e) None of these

46. Laxman went 15 km to the west from my house, then turned left and walked 20 km. He then turned East and walked 25 km and finally turning left covered 20 km. How far was he from my house ?
(a) 5 km (b) 10 km
(c) 40 km (d) 80 km
(e) None of these

47. If 'yellow' means 'green', 'green' means 'white', white means 'red', 'red' means 'black', 'black' means 'blue' and 'blue' means 'violet', which of the following represents the colour of human blood ?
(a) black (b) violet
(c) red (d) blue
(e) None of these

48. A trader in order to code the prices of article used the letters of PSICHOLAZY in the form of '0 to 9' respectively. Which of the following code stands for ₹ 875.50 ?
(a) AIL.HP (b) AIL.HS
(c) ZYA.HO (d) ZCA.OP
(e) None of these

DIRECTIONS (Qs. 49-53) : In each of the following questions there are three items. These three items may or may not be related with one another. Each group of items may fit into one of the diagrams (a), (b), (c), (d) and (e). You have to decide in which of the following diagrams and groups of items may fit. The number of that diagram is the answer.

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

49. **Statements:**
All leaders are good team workers.
All good team workers are good orators.
Conclusions:
I. Some good team workers are leaders.
II. All good orators are leaders.

50. **Statements:**
All terrorists are human.
All humans are bad.
Conclusions:
I. All terrorists are bad.
II. No human can be a terrorist.

51. **Statements:**
Some teachers are followers.
Some followers are famous.
Conclusions:
I. Some teachers are famous.
II. Some followers are teachers.

52. **Statements:**
Some books are pens.
No pen is pencil.
Conclusions:
I. Some books are pencils.
II. No book is pencil.

53. **Statements:**
Some dedicated sourls are angles
All social workers are angles.
Conclusions:
I. Some dedicated souls are social workers
II. Some social workers are dedicated souls

DIRECTIONS (Qs. 54-55) : Study the information given below and answer the questions following it:

Mohan is son of Arun's father's sister. Prakash is son of Reva, who is mother of Vikash and grandmother of Arun. Pranab is father of Neela and grandfather of Mohan. Reva is wife of Pranab.

54. How is Mohan related to Reva ?
(a) Grandson (b) Son
(c) Nephew (d) Data inadaequate
(e) None of these

55. How is Vikash's wife related to Neela ?
(a) Sister (b) Niece
(c) Sister-in-law (d) Data inadaequate
(e) None of these

DIRECTIONS (Qs. 56-60) : Read the following information carefully to answer the questions that follow.

There are six teachers A, B, C, D, E and F in a school. Each of the teachers teaches two subjects, one compulsory subject and the other optional subject. D's optional subject is History while three others have it as compulsory subject. E and F have Physics as one of their subjects. F's compulsory subject is Mathematics which is an optional subject of both C and E. History and English are A's subjects but in terms of compulsory and optional subjects, they are reverse of those of D's. Chemistry is an optional subject of any one of them. There is only one female teacher in the school who has English as her compulsory subject.

56. What is C's compulsory subject ?
(a) History (b) Physics
(c) Chemistry (d) English
(e) None of these

57. Who is a female member in the group ?
(a) A (b) B
(c) C (d) D
(e) None of these

58. Who among the following has same optional subjects as that of the compulsory subject of F ?
(a) D (b) B
(c) A (d) C
(e) None of these

59. Disregarding which is compulsory and which is the optional subject, who has the same two subjects combination as F ?
(a) A (b) B
(c) E (d) D
(e) None of these

60. Which of the following groups of teachers has History as the compulsory subject ?
(a) A, C and D (b) B, C and D
(c) C and D (d) A, B and C
(e) None of these

DIRECTIONS (Qs. 61-65) : In each of the questions below a group of letters are given followed by four groups of digits/symbol combinations numbered (a) (b), (c) and (d). Letters are to be coded as per the codes and conditions given below. You have to find out which of the combinations (a), (b) , (c) and (d) is correct and indicate your answer accordingly. If none of the four represents the correct code, mark (e) i.e. 'None of these' as your answer.

Letter	B	H	S	N	T	O	A	K	R	I	E	U	G
Digit/ Symbol Code	6	8	1	#	5	2	$	3	9	@	4	7	%

Conditions :
(i) If the first as well as last letter is vowel, both are to be coded as 'O'.
(ii) If the first letter is a vowel and the last letter is consonant, both are to be coded as 'Z'.
(iii) If the first letter is a consonant and the last letter is vowel, both are to be coded as '*'.

61. **ONSIRT**
(a) 2#1@95 (b) Z#@195
(c) Z#1@9Z (d) Z#1@95
(e) None of these

62. **KIUBSR**
(a) O@76129 (b) O@7610
(c) 3@7691 (d) 3@6719
(e) None of these

63. **BKAEUG**
(a) 03$470 (b) 63$470
(c) 03$47% (d) 63$47%
(e) None of these

64. **STOKGA**
(a) 1523%$ (b) 1523%*
(c) *523%* (d) *523%$
(e) None of these

65. **ORHSNU**
(a) O98#17 (b) O981#O
(c) 298#10 (d) 2981#7
(e) None of these

DIRECTIONS (Qs. 66-70) : In the following questions, the symbols @, #, $, % and © are used with the following meaning as illustrated below :

'P $ Q' means 'P is not greater than Q'
'P @ Q' means 'P is neither smaller than nor equal to Q'.
'P % Q' means 'P is neither greater than nor equal to Q'.
'P © Q' means 'P is not smaller than Q'.
'P # Q' means 'P is neither greater than nor smaller than Q'.

Now in each of the following questions assuming the given statements to be true, find which of the three conclusions I, II and III given below them is/are definitely true.

66. **Statements :** M @ R, R © K, J % K
Conclusions : I. M @ J
II. J % R
III. K % M
(a) Only I follows (b) Only I and II follow
(c) Only II and III follow (d) All follow
(e) None of these

67. **Statements :** D © N, N # V, W $ V
Conclusions : I. D # W
II. W % D
III. V # D
(a) Only III follows
(b) Only either I or II follows
(c) Only either II or III follows
(d) Only either I or III follows
(e) None of these

68. **Statements :** H % B, M © B, K # M
Conclusions : I. K @ H
II. B # K
III. K @ B
(a) All follow
(b) Only I follows
(c) Only either II or III follows
(d) Only either II or III and I follow
(e) None of these

69. **Statement :** V © M, N $ V, J @ N
Conclusions : I. J @ M
II. M @ N
III. V @ J
(a) Only II follows
(b) Only I follows
(c) Only either I or II follows
(d) Only III follows
(e) None of these

70. **Statements :** A @ B, B © E, F % E
Conclusions : I. A @ F
II. F % B
III. E % A
(a) Only I follows
(b) Only I and II follow
(c) Only I and III follow
(d) I, II and III follow
(e) None of these

DIRECTIONS (Qs. 71-75): Study the following information carefully and answer the given questions.

In a certain code language- '**economics is not money**' is written as, '**ka la ho ga**' '**demand and supply economics**' is written as, '**mo ta pa ka**' money makes only part' is written as, '**zi la ne ki**' demand makes supply economics' is written as, '**zi mo ka ta**'

71. What is the code for 'money' in the given code language?
(a) ga (b) mo
(c) pa (d) ta
(e) la

72. What is the code for 'supply' in the given code language?
(a) only ta (b) only mo
(c) either pa or mo (d) only pa
(e) either mo or ta

73. What may be the possible code for 'demand only more' in the given code language?
(a) xi ne mo (b) mo zi ne
(c) ki ne mo (d) mo zi ki
(e) xi ka ta

74. What may be the possible code for 'work and money' in the given code language?
(a) pa ga la (b) pa la tu
(c) mo la pa (d) tu la ga
(e) pa la ne

75. What is the code for 'makes' in the given code language?
(a) mo (b) pa
(c) ne (d) zi
(e) ho

DIRECTIONS (Qs. 76-80) : 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

76. 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 ÷

77. 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

78. 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

79. Which among the following expression is true if Y is the son of X is **definitely false**?
(a) W % L × T × Y ÷ X (b) W + L × T × Y ÷ X
(c) X + L × T × Y ÷ W (d) W $ X + L + Y + T
(e) W % X + T × Y ÷ L

80. What should come in place of the question mark, to establish that T is the sister-in-law of Q in the expression?
R % T × P ? Q + V
(a) ÷ (b) %
(c) × (d) $
(e) Either $ or ×

HINTS & EXPLANATIONS

1. (b) $16\%\text{ of }450 \div ?\%\text{ of }250 = 4.8$

$\Rightarrow \quad 450 \times \frac{16}{100} \div 250 \times \frac{?}{100} = 4.8$

$\Rightarrow \quad 72 \div 2.5 \times ? = 4.8$

$\Rightarrow \quad 2.5 \times ? = \frac{72}{4.8}$

$\therefore \quad ? = \frac{72}{4.8 \times 2.5} = 6$

2. (a) $? = 19.5\%\text{ of }524 = 524 \times \frac{19.5}{100} = 102.18$

3. (e) $\sqrt{?} - 11 = \sqrt{1521}$

$\Rightarrow \sqrt{?} - 11 = 39$

$\Rightarrow \quad \sqrt{?} = 39 + 11 = 50$

$\therefore \quad ? = (50)^2 = 2500$

4. (d) $? = 700 \div 70 \div 0.5 = 700 \times \frac{1}{70} \times \frac{1}{0.5} = 20$

5. (b) $? = 12.8 \times 4.5 \times 2.2 = 126.72$

6. (e) $? = 55 \div 5.5 - 0.5 = 55 \times \frac{1}{5.5} - 0.5$

$= 10 - 0.5 = 9.5$

7. (b) $(25)^? = (5 \times 5 \times 5 \times 5 \times 5 \times 5)^4 \times (5 \times 5)^6 \div (5)^2$

$= (25 \times 25 \times 25)^4 \times (25)^6 \div (25)^1$

$= (25^3)^4 \times (25)^6 \div 25^1 = (25)^{12} \times (25)^6 \div (25)^1$

$= (25)^{12+6-1} = (25)^{17}$

$\therefore \quad ? = 17$

8. (a) $? \times 40 = 8059 - 7263 = 796$

$\therefore \quad ? = \frac{796}{40} = 19.9$

9. (a) $4 \times ? = 4062 \div 5 = 4062 \times \frac{1}{5} = 812.4$

$\therefore \quad ? = \frac{812.4}{4} = 203.1$

10. (e) $? = 3.5 \times (80 \div 2.5) = 3.5 \times \left(80 \times \frac{1}{2.5}\right) = 3.5 \times 32 = 112$

11. (d) $? = 5\frac{1}{5} + 2\frac{3}{5} + 1\frac{2}{5} = \frac{26}{5} + \frac{13}{5} + \frac{7}{5}$

$= \frac{26+13+7}{5} = \frac{46}{5} = 9\frac{1}{5}$

12. (c) $13\%\text{ of }258 - ? = 10$

$\therefore \quad ? = 13\%\text{ of }258 - 10$

$= 258 \times \frac{13}{100} - 10 = 33.54 - 10 = 23.54$

13. (d) $? = \frac{4}{5} \times 2\frac{3}{4} \div \frac{5}{8} = \frac{4}{5} \times \frac{11}{4} \div \frac{5}{8}$

$= \frac{4}{5} \times \frac{11}{4} \times \frac{8}{5} = \frac{88}{25} = 3\frac{13}{25}$

14. (e) $? = 623.15 - 218.82 - 321.43 = 623.15 - 540.25 = 82.9$

15. (b) $? \times 50 = 5437 - 3153 + 2284 = 7721 - 3153 = 4568$

$\therefore \quad ? = \frac{4568}{50} = 91.36$

16. (c) Given series.

2 16 112 672 3360 13440 **40320**

×8 ×7 ×6 ×5 ×4 ×3

$\therefore \quad ? = 40320$

17. (b) Given series.

4 9 19 **39** 79 159 319

×2+1 ×2+1 ×2+1 ×2+1 ×2+1 ×2+1

$\therefore \quad ? = 39$

18. (c) Given series

4000 2000 1000 500 250 125 **62.5**

÷ 2 ÷ 2 ÷ 2 ÷ 2 ÷ 2 ÷ 2

$\therefore \quad ? = 62.5$

19. (a) Given series.

588 563 540 519 **500** 483 468

− 25 − 23 − 21 − 19 − 17 − 15

$\therefore \quad ? = 500$

20. (d) Given series.

121 **100** 81 64 49 36 25

$(11)^2$ $(10)^2$ $(9)^2$ $(8)^2$ $(7)^2$ $(6)^2$ $(5)^2$

$\therefore \quad ? = 100$

21. (c) Let the positive no. be x.

According to question. 15% of x + 10% of x = 70

$\Rightarrow \quad x \times \frac{15}{100} + \frac{x \times 10}{100} = 70$

$\Rightarrow \quad \frac{15x}{100} + \frac{10x}{100} = 70$

$\Rightarrow \quad \frac{25x}{100} = 70$

$\therefore \quad x = \frac{70 \times 100}{25} = 280$

$\therefore$ Double of given no. = 280 × 2 = 560

22. (b) Total number obtained by Vikram

$= (100 \times 5) \times \frac{72}{100} = 500 \times \frac{72}{100} = 360$

$\therefore$ Number in science

$= 360 - (80 + 70 + 76 + 65) = 360 - 291 = 69$

23. (c) Monthly income of Prarthana's $= \frac{4,20,000}{12} = ₹\ 35,000$

Monthly income of Pooja and Falgunis

$= 35,000 \times \frac{53+57}{70} = 35,000 \times \frac{110}{70} = ₹\ 55,000$

$\therefore$ Annual income of Pooja and Falgunis

$= 55,000 \times 12 = ₹\ 6,60,000$

24. (a) Cost price of item.

$= 8400 \times \frac{100}{100-25} = 8400 \times \frac{100}{75} = ₹\ 11200$

SP of item

$= 11200 \times \frac{100+40}{100} = 11200 \times \frac{140}{100} = ₹\ 15680$

25. (e) $\frac{(?)^{2.3}}{8} = \frac{2}{(?)^{1.7}}$

$\Rightarrow (?)^{2.3+1.7} = 16 \Rightarrow (?)^4 = 16 = (2)^4$

$\therefore ? = 2$

26. (e) Simple interest

$= \frac{\text{principle} \times \text{time} \times \text{rate}}{100} = \frac{16500 \times 4 \times 16}{100} = ₹10560$

27. (b) Speed of truck $= \frac{\text{distance}}{\text{time}} = \frac{360}{8} = 45\,\text{km/hr}$

Speed of car $= \frac{\text{distance}}{\text{time}} = \frac{360}{6} = 60\,\text{km/hr}$

$\therefore$ Ratio $= 45 : 60 = 3 : 4$

28. (a) Minimum marks to pass = 975

Priya failed by $975 - 870 = 105$ marks

$\therefore$ Maximum mark $= \frac{105}{7} \times 100 = 1500$

29. (e) Let four consecutive numbers are

$A = (x), B = (x+1), C = (x+2)$ and $D = (x+3)$

According to question

$$\text{Average} = \frac{(x) + (x+1) + (x+2) + (x+3)}{4}$$

$\Rightarrow \quad 56.5 = \frac{4x+6}{4}$

$\Rightarrow \quad 226 = 4x + 6$

$\Rightarrow \quad 4x = 226 - 6 = 220 \qquad \therefore \ x = \frac{220}{4} = 55$

$\therefore$ Product of A and C

$= (x) \times (x+2) = (55) \times (55+2) = 55 \times 57 = 3135$

30. (b) Required distance

$= 226 \times (5 \times 7) = 226 \times 35 = 7910\ \text{m} = 7.91\,\text{km}$

31. (d) Let x sweets is distributed to each children

According to question $(200 - 40) \times (x + 2) = 200 \times x$

$\Rightarrow \quad (160) \times (x+2) = 200x \ \Rightarrow \ 160x + 320 = 200x$

$\Rightarrow \quad 200x - 160x = 320 \ \Rightarrow \ 40x = 320$

$\therefore \quad x = \frac{320}{40} = 8$

$\therefore$ Total no. of sweets $= 200 \times x = 200 \times 8 = 1600$

32. (c) One side of square $= \frac{\text{circumference}}{4} = \frac{44}{4} = 11\,\text{cm}$

Circumference of rectangle = 4 × perimeter of square

$= 4 \times 44 = 176\,\text{cm}$

width of rectangle

$= \frac{\text{circumference of rectangle}}{2} - \text{length}$

$= \frac{176}{2} - 51 = 88 - 51 = 37\ \text{cm}.$

$\therefore$ Required difference = width – side = 37 – 11 = 26 cm.

33. (a) S.I. $= \frac{\text{principal} \times \text{time} \times \text{rate}}{100}$

$= \frac{12000 \times 3 \times 12}{100} = ₹4320$

$\text{C.I.} = P\left[\left(1 + \frac{\text{rate}}{100}\right)^{\text{time}} - 1\right]$

$= 12000\left[\left(1 + \frac{12}{100}\right)^3 - 1\right]$

$= 12000\left[\left(\frac{28}{25}\right)^3 - 1\right]$

$= 12000\left[\frac{21952}{15625} - 1\right] = 12000 \times \frac{6327}{15625}$

$= ₹4859.136$

$\therefore$ Required difference = 4859.136 – 4320 = ₹539.136

34. (c) Radius of circle (r) $= \frac{\text{circumference}}{2\pi} = \frac{220 \times 7}{2 \times 22} = 35\,\text{m}.$

Area of circle $= \pi r^2 = \frac{22}{7} \times (35)^2 = \frac{22}{7} \times 35 \times 35$

$= 3850\ \text{m}^2 = \text{area of rectangle}$

$\therefore$ Length of rectangle $= \frac{\text{area of rectangle}}{\text{width}}$

$= \frac{3850}{50} = 77\,\text{m}.$

35. (e) CP of article

$= 6800 \times \frac{100}{100-75} = 6800 \times \frac{100}{25} = ₹\ 27200$

36. (b) Required average $= \frac{17 + 22 + 33 + 13 + 15 + 20}{6}$

$= \frac{120}{6} = 20$ thousand

37. (a) Required per cent $= \frac{20-15}{15} \times 100 = \frac{100}{3} = 33\frac{1}{3}\%$

38. (b) Required average $= \frac{13+27+12}{3}$

$= \frac{52}{3} = 17\frac{1}{3}$ thousands

39. (d) Required ratio = 15 : 18 = 5 : 6

40. (e) Required ratio = 18 : 27 = 2 : 3

41. (d)

1	3	4	7	9	2	5	6	8
A	Q	F	J	L	D	M	P	N

Thus,

3	9	6	8	2	4
Q	L	P	N	D	F

42. (d) 4, 45, 453, 4531, 45312, 45, 453, 4531
The next coded digit will be 1. Hence, the instruction Run will come next.

43. (d) The new letter sequence is EDRPSEISNO.
The seventh letter from the right is P.

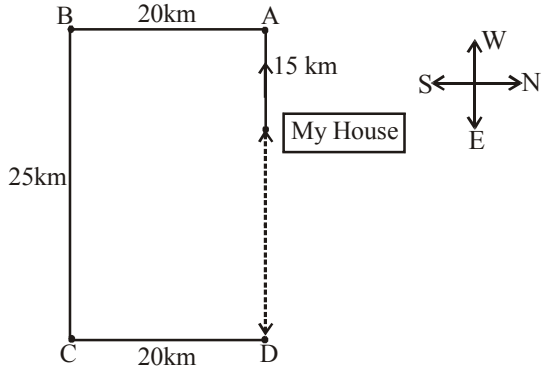
D E P R E S S I O N

1 2 3 4 5 6 7 8 9 10

44. (a) na *pa* ka *so* → *birds* fly *very* high
ri *so* la *pa* → *birds* are *very* beautiful
ti me *ka* bo → the parrots could fly
Thus *high* is coded as *na*.

45. (e) 48 Q 12 R 10 P 8 W 4 = ?
⇒ ? = 48 ÷ 12 × 10 – 8 + 4
⇒ ? = 4 × 10 – 8 + 4
⇒ ? = 40 – 8 + 4 = 36

46. (b)



From the above diagram required distance
= 25 – 15 = 10 km.

47. (e) The colour of human blood is red. Here *white* means *red*. Therefore *white* is our answer.
Do not opt for *black* because *red* means *black* implies that black is called red.

48. (e) P S I C H O L A Z Y
0 1 2 3 4 5 6 7 8 9
875.50 = ZAO.OP

49. (a) Conclusion I is the conversion of first statement, hence I follows. But II does not follow because A + A = A i.e. All leaders are good orators but not *vice versa*.

50. (a) A + A = A; i.e. All terrorists are human.

51. (b) I does not follow. But II follows because it is conversion of the first statement.

52. (c) 53. (d)

(54-55) : Pranab ⇔ Reva
(+) (–)
↓ ↓ ↓
Neela (–) Prakash (+) Vikash
↓
Mohan (+) Arun

54. (a) 55. (c)

For (Qs. 56 to 60)
The given information is summarised in a table as follows :

Teachers	Subjects	
	Compulsory	**Optional**
A	History	English
B	History	Chemistry
C	History	Mathematics
D	(Female) English	History
E	Physics	Mathematics
F	Mathematics	Physics

56. (a) History is the compulsory subject of C.

57. (d) D is a female member in the group.

58. (d) The compulsory subject of F (Mathematics) is the optional subject of C.

59. (c) E has physics and Mathematics as his two subjects.

60. (d) A, B and C all have History as the compulsory subjects.

61. (c)

Letter	O	N	S	I	R	T
Code	Z	#	1	@	9	Z

Condition (ii) is applied.

62. (e)

Letter	K	I	U	B	S	R
Code	3	@	7	6	1	9

63. (d)

Letter	B	K	A	E	U	G
Code	6	3	$	4	7	%

64. (c)

Letter	S	T	O	K	G	A
Code	*	5	2	3	%	*

Condition (iii) is applied.

65. (b)

Letter	O	R	H	S	N	U
Code	O	9	8	1	#	O

Condition (i) is applied.

66. (d) M > R ...(i)
R ≥ K ...(ii)
J < K ...(iii)
Combining (i), (ii) and (iii), we get
M > R ≥ K > J ⇒ M > J (conclusion I)
R > J (conclusion II)
M > K (conclusion III)
Hence, conclusion I (M > J), conclusion II (J < R) and conclusion III (K < M) are true.

67. (b) $D \geq N$ ...(i)
$N = V$ ...(ii)
$W \leq V$ ...(iii)
Combining (i) and (ii), we get
$D \geq N = V \Rightarrow D \geq V$. Hence, conclusion III ($V = D$) is not necessary true.
Again, combining all (i), (ii) and (iii), we get
$D \geq N = V \geq W \Rightarrow D \geq W$. Hence, neither conclusion I ($D = W$) nor conclusion II ($W < D$) is true. But both conclusion I ($D = W$) and conclusion II ($W < D$) together make a complementary pair. Hence, either conclusion I or conclusion II is true.

68. (d) $H < B$ ...(i)
$M \geq B$ ...(ii)
$K = M$ ...(iii)
Combining (ii) and (iii), we get
$K = M \geq B \Rightarrow K \geq B$. Hence, neither conclusion II ($B = K$) nor conclusion III ($K > B$) is true. But, both conclusion I and conclusion II together make a complementary pair. Hence, either conclusion II ($B = K$) or conclusion III ($K > B$) is true.
Again, combining all (i), (ii) and (iii), we get
$K = M \geq B > H \Rightarrow K > H$ (conclusion I). Hence, conclusion I ($K > H$) is true.

69. (e) $V \geq M$ ...(i)
$N < V$ ...(ii)
$J > N$ ...(iii)
From (i) and (ii), no specific relation between M and N can be established. Hence, conclusion II ($M > N$) is not necessarily true.
Again, from all (i), (ii) and (iii), no specific relation between J and M can be established. Hence, conclusion I ($J > M$) is not necessarily true. Again, from (ii) and (iii), no specific relation between V and J can be established. Hence, conclusion III ($V > J$) is not necessarily true.

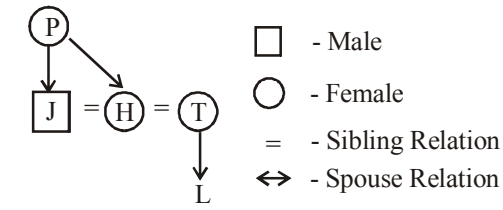
70. (d) $A > B$ ....(i)
$B \geq E$ ....(ii)
$F < E$ ....(iii)
Combining (i), (ii) and (iii), we get
$A > B \geq E > F$
Hence, Conclusion I ($A > F$)
Conclusion II ($F < B$)
and Conclusion III ($E < A$) are true.

(71-75)
Economics is not money - ka la ho ga .....(i)
demand and supply economics - mo ta pa ka ..... (ii)
money makes only part - zi la ne ki ..... (iii)
demand makes supply economics - zi mo ka ta ... (iv)
From (i) & (iii)
money → 'la'
From (iii) & (iv)
makes → 'zi'
From (i) & (iv)
economics – 'ka'
Also, and - 'pa'
demand - 'mo' or 'ta'
supply - 'mo' or 'ta'
only - 'ne' or 'ki'
part - 'ne' or 'ki'
is - 'ho' or 'ga'
not - 'ho' or 'ga;

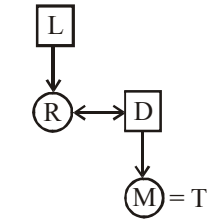
71. (e) 72. (e) 73. (a) 74. (b) 75. (d)

(76-80)
$A + B \Rightarrow$ A is the father of B.
$A \times B \Rightarrow$ A is the sister of B.
$A \$ B \Rightarrow$ A is the wife of B.
$A \% B \Rightarrow$ A is the mother of B.
$A \div B \Rightarrow$ A is the son of B.

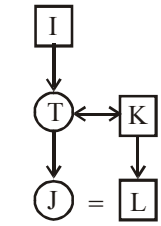
76. (a) $J \div P \% H \times T \% L$ can be represented in diagram. As follows.



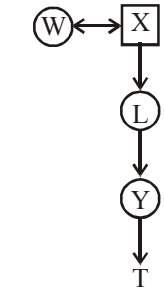
77. (b) $L + R \$ D + M \times T$



78. (b) $I + T \% J \times L \div K$



79. (d) $W \$ X + L + Y + T$



80. (d) $R \% T \times P \$ Q + V$