Previous Paper (Solved)
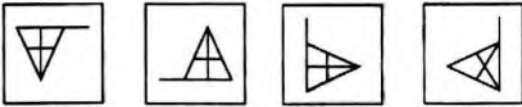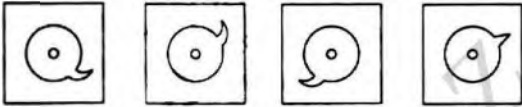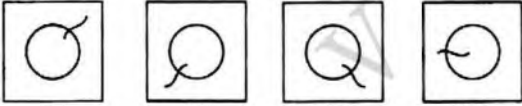
JAWAHAR NAVODAYA VIDYALAYA ENTRANCE EXAM, 2015*

CLASS VI

## SECTION-I: MENTAL ABILITY TEST

PART-I

Directions (Qs. 1-5) : *In the following four figures (A), (B), (C), and (D) are given, three are similar in a certain manner. However, one figure is not like the other three. Choose the figure which is different from the rest.*

1.
(A)   (B)   (C)   (D)

2.
(A)   (B)   (C)   (D)

3.
(A)   (B)   (C)   (D)

4.
(A)   (B)   (C)   (D)

5.
(A)   (B)   (C)   (D)

PART-II

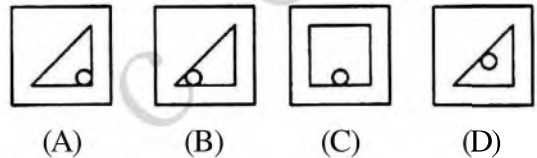**Directions (Qs. 6-10):** *In the given question figure followed by four alternatives (A), (B), (C) and (D). Select the figure from answer list which is exactly similar to question figure.*
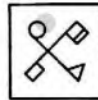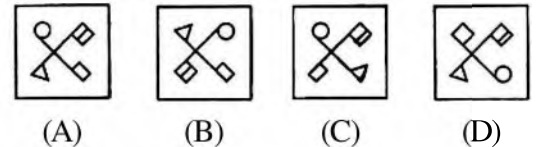
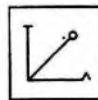6. **Question Figure**
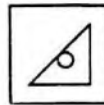
Answer Figures

(A)   (B)   (C)   (D)

7. **Question Figure**

Answer Figures

(A)   (B)   (C)   (D)

8. **Question Figure**

Answer Figures

(A)   (B)   (C)   (D)

9. **Question Figure**

Answer Figures

(A)   (B)   (C)   (D)
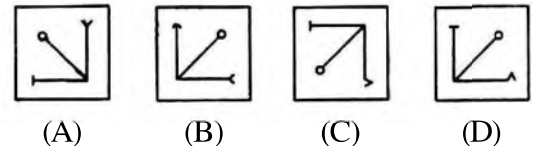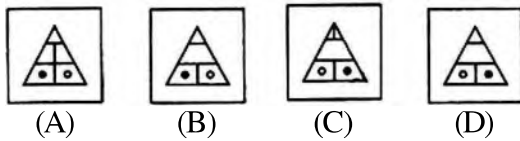
10. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
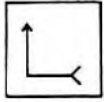
PART-III

Directions (Qs. 11-15) : *In question figure is given followed by four alternatives. Select a figure from the four alternatives, which when placed in the blank space of question figure would complete the pattern of question figure without altering the direction of answer figure.*

11. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
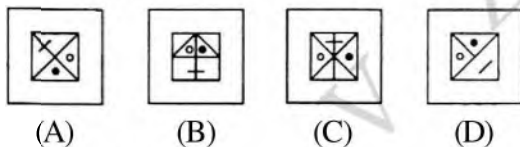
12. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
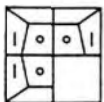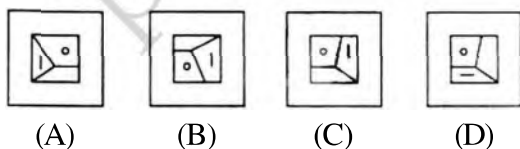
13. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
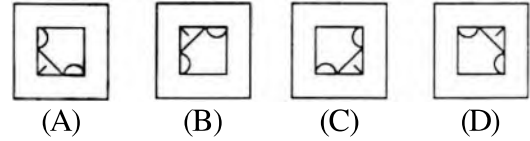
14. Question Figure

Answer Figures
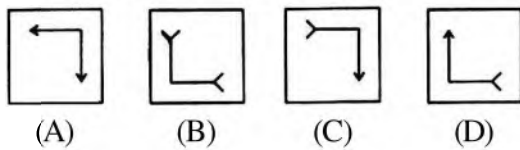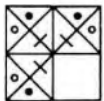

(A)   (B)   (C)   (D)
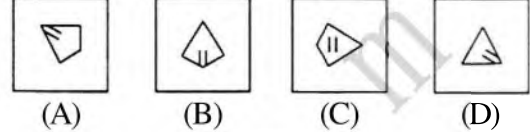
15. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
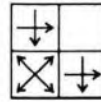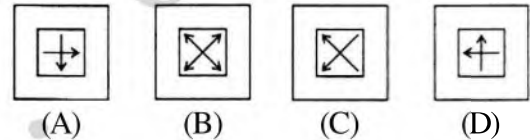
PART-IV

Directions (Qs. 16-20): *Three complete and fourth blank space is given, choose the set of figures which follows the rule and would replace the blank space given in question figure from the four alternatives given.*

16. Question Figures
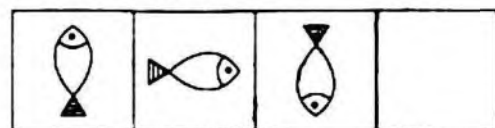
Answer Figures
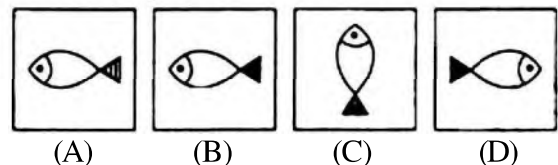
(A)   (B)   (C)   (D)

17. Question Figures
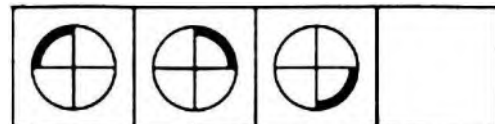
Answer Figures

(A)   (B)   (C)   (D)

18. Question Figures

Answer Figures

(A)   (B)   (C)   (D)

19. Question Figures

Answer Figures

(A)   (B)   (C)   (D)

20. Question Figures

Answer Figures

(A)   (B)   (C)   (D)

PART-V

Directions (Qs. 21-25): *There are two sets of figure given. There is a definite relationship between first two. Establish a similar relationship between third and fourth by selecting a suitable figure from answer that would replace the question mark.*

21. Question Figures

Answer Figures

(A)   (B)   (C)   (D)

22. Question Figures

Answer Figures

(A)   (B)   (C)   (D)

23. Question Figures

Answer Figures

(A)   (B)   (C)   (D)

24. Question Figures

Answer Figures

(A)   (B)   (C)   (D)

25. Question Figures

Answer Figures

(A)   (B)   (C)   (D)

PART-VI

Directions (Qs. 26-30): *There are four alternatives (A), (B), (C) and (D) given. You have to select the alternatives which completes squares given in the question figure.*

26. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
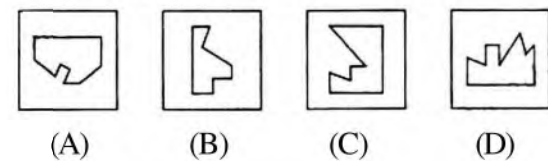
27. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
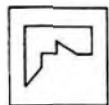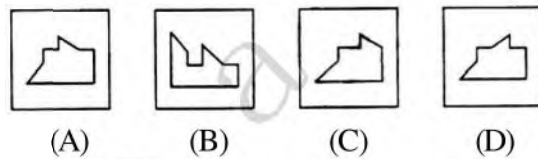
28. Question Figure

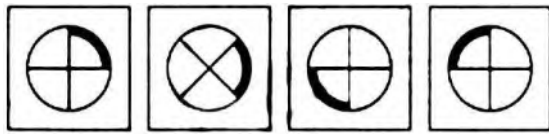**Answer Figures**

(A)   (B)   (C)   (D)
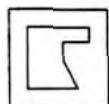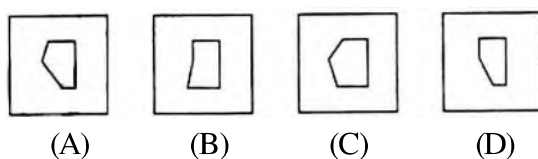
29. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
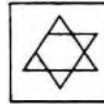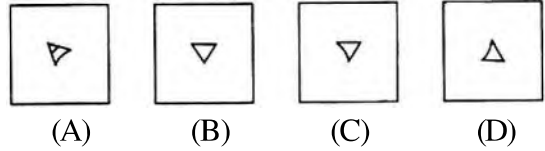
30. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
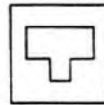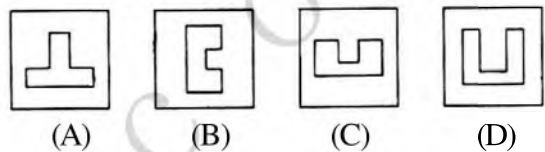
PART-VII

Directions (Qs. 31-35): *There are four alternatives (A), (B), (C) and (D) given. You have to choose the correct mirror image of the question figure, when the mirror held on the line XY.*
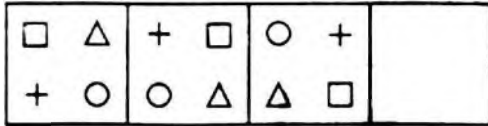
31. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
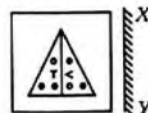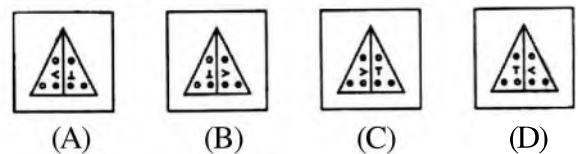
32. Question Figure

Answer Figures

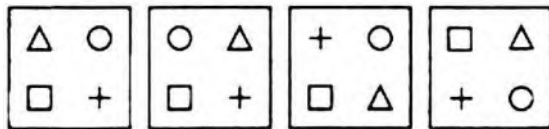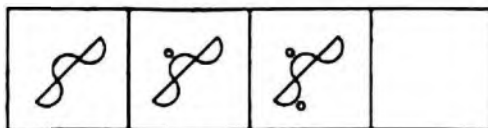
(A)   (B)   (C)   (D)
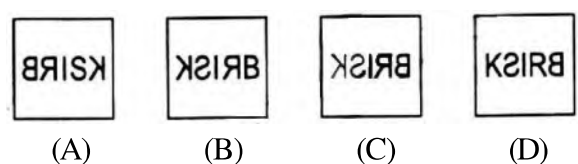
33. Question Figure

Answer Figures

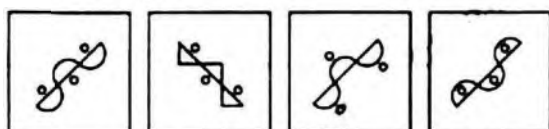(A)   (B)   (C)   (D)
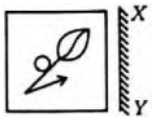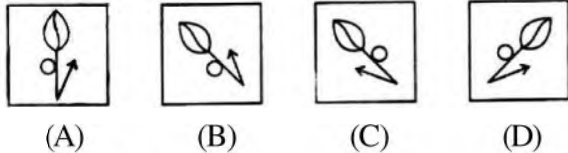
34. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
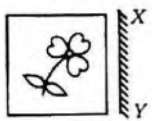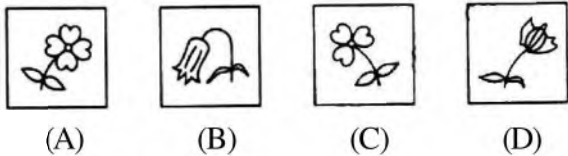
35. Question Figure

Answer Figures

(A)   (B)   (C)   (D)
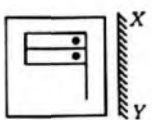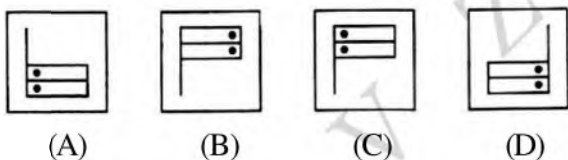
PART-VIII

Directions (Qs. 36-40): *Consist a set of three figures showing a sequence of folding a piece of paper third question figures shows to manner in which the folded paper has been punched. These three figures are followed by four answer figures from which you have to choose a figure which would most closely resemble the unfolded form of third figure of question.*

36. Question Figures

Answer Figures

(A)   (B)   (C)   (D)
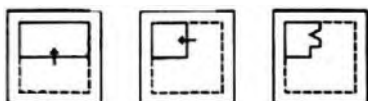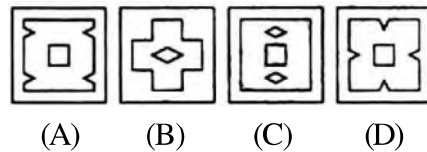
37. Question Figures

Answer Figures

(A)   (B)   (C)   (D)
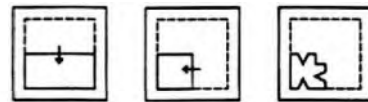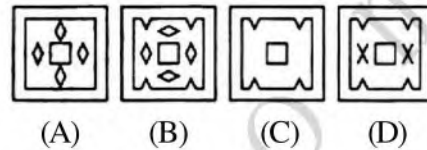
38. Question Figures

Answer Figures

(A)   (B)   (C)   (D)
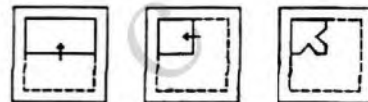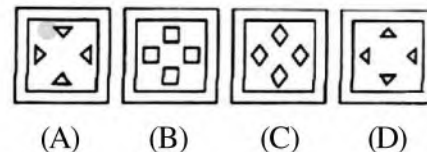
39. Question Figures

Answer Figures

(A)   (B)   (C)   (D)
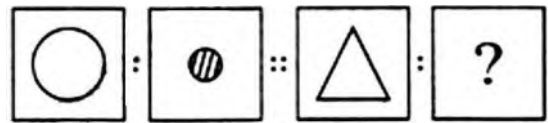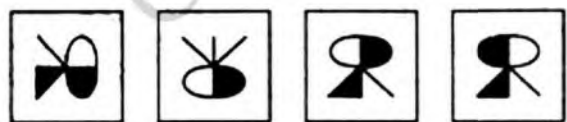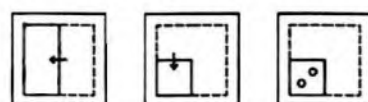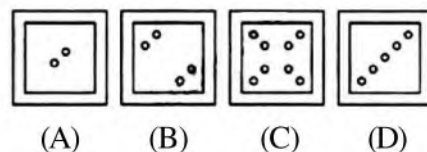
40. Question Figures
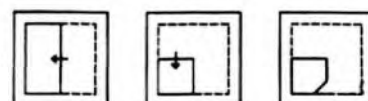
Answer Figures
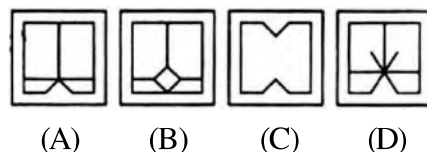
(A)   (B)   (C)   (D)

PART-IX

Directions (Qs. 41-45): *Question figure is followed by four alternatives, find out which of the figure from (A), (B), (C) and (D) can be formed from the pieces given in question figure.*

41. Question Figure
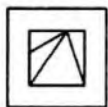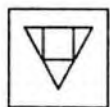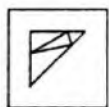
Answer Figures

(A)   (B)   (C)   (D)

42. Question Figure
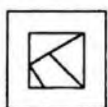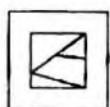
Answer Figures

(A)   (B)   (C)   (D)
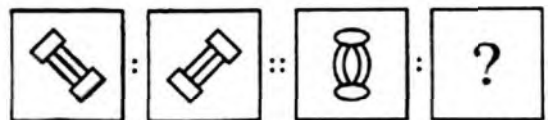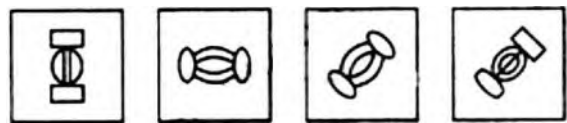
43. Question Figure
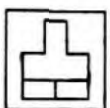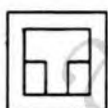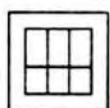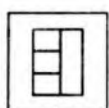
Answer Figures
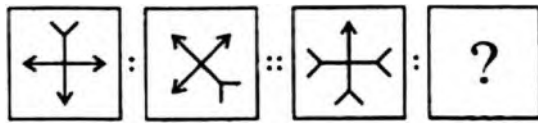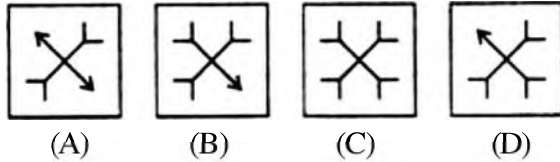

(A)   (B)   (C)   (D)

44. Question Figure
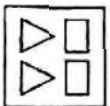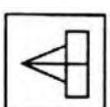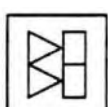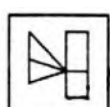
Answer Figures

(A)   (B)   (C)   (D)

45. Question Figure
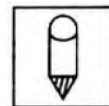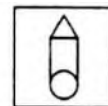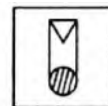
Answer Figures

(A)   (B)   (C)   (D)

PART-X

Directions (Qs. 46-50): *Question figure is followed by four Answer figures namely A, B, C and D. Find out the correct Answer figure from the given alternatives in which Question figure is hidden.*

46. Question Figure
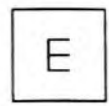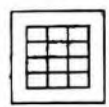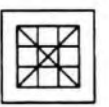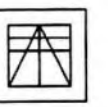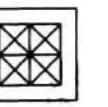
Answer Figures

(A)   (B)   (C)   (D)

47. Question Figure
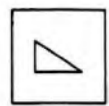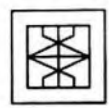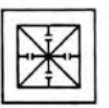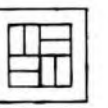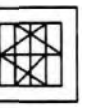
Answer Figures

(A)   (B)   (C)   (D)

48. Question Figure
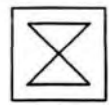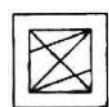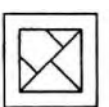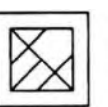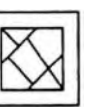
Answer Figures

(A)   (B)   (C)   (D)

49. Question Figure

Answer Figures

(A)   (B)   (C)   (D)

50. Question Figure

Answer Figures
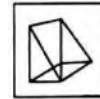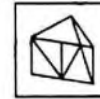
(A)   (B)   (C)   (D)

SECTION-II: MATHEMATICS

51. In how many years will a sum of money trebles itself at 25% per annum?
A. 4 years
B. 6 years
C. 8 years
D. 10 years

52. Cost of 12 kg of potatoes is ₹ 360. Find the cost of 8 kg of potatoes.
A. ₹ 180
B. ₹ 240
C. ₹ 300
D. ₹ 120

53. Cost price of a book ₹ 150 and selling price of that book is ₹ 180. Profit per cent of the book is:
A. 20%
B. 25%
C. 30%
D. 33%

54. What is the least number of square tiles of 1.2 m each side required to pave the floor of a hall is 4.8 m × 3.6 m?
A. 26
B. 12
C. 40
D. 20

55. A rectangular park is 100 m long and 60 m wide. There is a path 2 m wide out side the park. Find the area of the path?
A. 324 m²
B. 656 m²
C. 675 m²
D. 780 m²

56. The side of a square park is 100 m. Perimeter of the park is:
A. 1000 m
B. 400 m
C. 200 m
D. 800 m

57. Two person start walking at 7:30 am in opposite direction at the rate of 4 km/hr and 6 km/hr respectively. If the distance between them is 25 km, when will they meet together?

A. 8:30 a.m.
B. 9:30 a.m.
C. 10:00 a.m.
D. 10:30 a.m.

58. What is true for 11 and 21 of the following?
A. Both are composite numbers
B. Both are even numbers
C. Both are co-prime numbers
D. Both are multiple of 3

59. The greatest number of 5 digits formed with the digits 7, 2, 4, 8 and 0 is (use one digit only one time):
A. 80742
B. 87042
C. 87420
D. 87402

60. By how much is three-fourth of 144 greater than two-third of 96?
A. 20
B. 44
C. 54
D. 64

61. On simplification (641664 ÷ 16) is equal to:
A. 4104
B. 40104
C. 41404
D. 41004

62. The sum of first 5 multiples of 6 is:
A. 90
B. 54
C. 30
D. 84

63. Decimal of $\left[\dfrac{3}{4} + \dfrac{4}{5} + \dfrac{8}{25}\right]$ is equal to:
A. 1.870
B. 18.70
C. 187.0
D. 1870.0

64. If 3.65 × 0.5 = 1.825 then, find the value of 365 × 0.5:
A. 182.5
B. 18.25
C. 1.825
D. 365

65. The percentage of $\dfrac{17}{25}$ is equal to:

- A. 34%
- B. 68%
- C. 17%
- D. 25%

66. The difference of ten place and unit place of the sum of first 5 multiples of 6 is equal to:

- A. 6
- B. 7
- C. 8
- D. 9

67. Find the greatest number which divides 1277 and 1368 to give the remainder 3 in each case.

- A. 68
- B. 77
- C. 91
- D. 97

68. The L.C.M. of 114 and 95 is:

- A. 570
- B. 950
- C. 1140
- D. 5700

69. What is the value of $24 + [6 - \{5 - 2(4 - 3)\}]$?

- A. 22
- B. 23
- C. 24
- D. 27

70. The sum of 7 multiples of 13 is nearest to:

- A. 360
- B. 365
- C. 370
- D. 375

71. The next term of the series 1, 2, 4, 8, ... is:

- A. 12
- B. 16
- C. 10
- D. 11

72. The weight of Rajesh is 5 kg less than Ram's weight and weight of Neha is 3 kg more than Ram's weight. If the total weight of three is 103 kg, then weight of Ram is:

- A. 34 kg
- B. 38 kg
- C. 33 kg
- D. 35 kg

73. A bus travels 400 km in 8 hours. The average speed of the bus is:

- A. 30 km/hr
- B. 50 km/hr
- C. $50\dfrac{1}{2}$ km/hr
- D. 60 km/hr

74. The following bar graph shows the games played by the students. Study the graph carefully and answer the question given below:
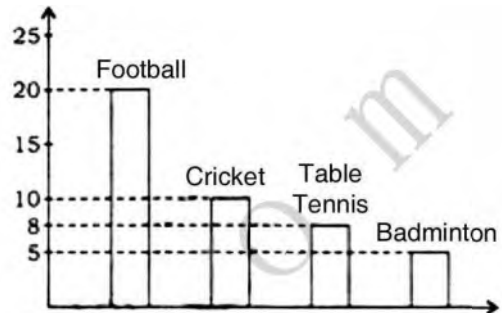
How many students play table tennis?

- A. 10
- B. 8
- C. 18
- D. 20

75. The following pictograph shows different using conveyance by the students of a school:

Conveyance	Number of Students
Cycle	● ●
Scooter	● ● ●
Car	● ● ● ●
School bus	● ● ● ● ● ●

(Here ● = 50 students)

What per cent of students used school bus?

- A. 6%
- B. 16%
- C. 40%
- D. 36%

SECTION-III: LANGUAGE

Directions (Qs. 76-100): *There are five passages. Each passage has 5 questions. Read the following passage carefully and answer the questions that follow.*

PASSAGE-1

We are tempted to assume that technological progress is real progress and that material success is the criterion of civilisation. If the Eastern people become fascinated by machines and techniques and use them, as Western nations do, to build huge industrial organisations and large military establishments, they will get involved in power politics and drift into the danger of death. Scientific and technological civilisation brings great opportunities and great rewards but also great risks

and temptations. Science and technology are neither good nor bad. They are not to be tabooed but tamed and assigned their proper place. They become dangerous only if they become idols.

76. According to the author, people think that real progress lies in
   A. material success and technological growth
   B. worshipping idols and having faith in them
   C. having large industries and political power
   D. taking risks and facing temptations

77. From the passage one gathers that the Eastern people must
   A. appreciate scientific achievements
   B. build huge industrial organisations
   C. avoid being controlled by machines and techniques of industrial production
   D. be fascinated by machines

78. According to the author, science and technology should be
   A. tabooed and eliminated from life
   B. used in a controlled and careful manner
   C. encouraged and liberally used
   D. made compulsory in education

79. According to the author, science and technology will bring benefits to
   A. only Western nations
   B. only Eastern countries
   C. nobody
   D. all, if tamed properly

80. According to the author, science and technology are
   A. totally harmless
   B. extremely dangerous
   C. to be treated as idols
   D. are useful, if they are not worshipped blindly

PASSAGE-2

We started pitching the highest camp that has ever been made. Everything took five times as long as it would have taken in a place where there was enough air to breathe; but at last we got the, tent up and

when we crawled in, it was not too bad. There was only a light wind, and inside it was not too cold for us to take off our gloves. At night most climbers take off their boots; but I prefer to keep them on. Hillary, on the other hand, took his off and laid them next to his sleeping bag.

81. The narrator of the story is
   A. an airline pilot
   B. a mountaineer
   C. a traveller
   D. a tourist

82. In this passage, 'we' refers to
   A. the author and his friends
   B. the author and his friend
   C. the author and his wife
   D. None of the above

83. They crawled into the tent because
   A. they must have been too tired to work
   B. the entrance to the tent must have been low
   C. they had heavy loads on their back
   D. they wanted to hide from enemies

84. They took a long time to finish the work because
   A. they were very tired
   B. it was very cold
   C. there was not enough air to breathe
   D. it was very dark

85. When they crawled into the tent
   A. they took off their gloves because it was not very cold
   B. they could not take off their gloves because it was very cold
   C. they took off their gloves though it was very cold
   D. they did not take off their gloves though it was not cold

PASSAGE-3

All sources of energy upon which industry depends are wasted when they are employed, and industry is expanding them at a continually increasing rate. Already coal has been largely replaced by oil and

oil is being used up so fast that the East and the West alike consider it to be necessary for their prosperity. And what is true of oil is equally true of other natural resources. Everyday, in fact, many miles of forests are turned into newspapers, but there is no known process by which newspapers can be turned into forests. You will say that this need not worry us, since newspapers will be replaced by radio, but radio requires electricity, electricity requires power and power requires raw materials.

86. The central contention of the passage is that
   A. industries should be closed down, since they expend all sources of energy
   B. newspapers should not be allowed to destroy forests
   C. an all-out effort is necessary for the preservation of natural resources that ultimately supply power
   D. power should be generated in abundance

87. The 'and' in the first sentence has the force of
   A. as well as   B. besides
   C. still   D. though

88. The statement 'many miles of forests are turned into newspapers' means
   A. many miles of forests have become as dry as newspapers
   B. devastation of vast areas of forests is a newsworthy item
   C. a good part of forests has been felled and converted into newsprint
   D. large numbers of trees in forests are concerted into raw materials to supply power for the machines that print newspapers

89. According to this passage, oil has become necessary for the prosperity of a nation because
   A. it is cheaper than coal
   B. it is more useful than coal
   C. the East and the West think so
   D. it is now the chief source of energy

90. According to this passage, the most indispensable item for an industrialised society is
   A. the radio
   B. raw materials
   C. power
   D. electricity

PASSAGE-4

Youth today do not realise that one is modern only when his thoughts and actions bring out something new, which can set an example to the rest of the world. Imitating only the Western outlook in life-style, leaving aside their values, is not what modernism is. Should we consider a youth modern if he opts for a dozen girlfriends and then pretends to be ignorant when dowry in marriage is concerned?

The family also plays a vital role in shaping one's life. If the urban population in India is divided into two broad divisions, the elite and the middle class, we will find that youths belonging to both these classes suffer from severe frustrations. The parents in the higher society are so busy with their work that their children are left neglected. Loneliness, tensions arising out of parent's unhappy relations and family feuds result in psychiatric depression in the youth.

The case is similar in the middle class families, though with a difference. Lack of attention at home ruins them. The situation is not so grave with the girls as they generally prefer to stay at home, whatever its conditions be. But young men, desperate to find some refuge; quite often come in contact with drugs, alcohol and other illegal activities. Neither are they happy with the society nor is the society happy with them.

91. The passage is concerned with
   A. the urban youth
   B. the elite class youth
   C. the middle class youth
   D. the modern girls

92. Youths in the elite class families are
   A. lonely and depressed
   B. prone to drug-addiction
   C. desperate for revenge
   D. angry and defiant

93. Being truly modern means
   A. imitating the West
   B. opting for a dozen girl-friend
   C. 'accepting dowry in marriage
   D. doing something exemplary

94. The situation in case of the girls is
   A. desperate
   B. menacing
   C. not so serious
   D. gloomy

95. Young men seek refuge in
   A. dozen girl-friends
   B. modernism
   C. drugs, alcohol, etc.
   D. dowry in marriage

PASSAGE-5

In the evening we decided to pitch camp as the weather was not encouraging. The wind was high and gathering storm clouds predicted a wild wet night. Moreover, we had arrived at a spot which looked promising for a camp. A level expanse in the lee of a high hill afforded some shelter from the wind; fresh water was near at hand in a stream which flowed across the plain; a copse of trees provided adequate supplies of fuel; and the dry grasses which abounded on the hillside would enhance the comfort of our beds.

Each member of the party was allotted a task. Some erected the tents; others prepared a scanty meal; yet others attended to the needs of the ponies that were now exhausted after a very strenuous day.

As the angry sun sank, the bustle of activity was hushed into silence and each man settled down to sleep.

96. As the weather was not encouraging we decided to
   A. set up the camp
   B. pack up the camp
   C. extend the camp
   D. shift the camp

97. The camp site looked encouraging because
   A. it was sheltered by some trees
   B. the dry grass would provide fuel
   C. we had been promised that spot
   D. it was level and sheltered

98. The day had been very
   A. exciting
   B. tiring
   C. boring
   D. comfortable

99. The task given to some members was to
   A. pitch the tents
   B. prepare a hot meal
   C. walk the ponies
   D. allot the tasks

100. This passage is about the selection of
   A. a suitable home
   B. a suitable place for animals
   C. a suitable place to camp
   D. a suitable route for trekking

ANSWERS

1	2	3	4	5	6	7	8	9	10
D	D	D	D	D	D	C	D	B	D
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A	C	B	A	B	A	C	A	C	A
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
B	D	C	B	B	A	A	D	B	C
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
C	C	C	C	C	C	B	C	C	C

41	42	43	44	45	46	47	48	49	50
C	B	B	B	D	D	D	A	B	B
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
C	B	A	B	B	B	C	C	C	B
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
B	A	A	A	B	D	C	A	D	B
71	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
B	D	B	B	C	A	C	B	D	D
81	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**
B	B	B	C	A	C	C	C	C	B
91	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**
A	A	D	C	C	A	D	B	A	C

SOME SELECTED EXPLANATORY ANSWERS

1. Figure 'D' has symbol of multiplication and dot, while others have dot with symbol of Addition.

2. In figure 'D' lines do not cross each other at right angle.

3. Figure 'D' has a straight beak like structure while others have bended.

4. A thread like structure comes out from the periphery of circles A, B and C while in figure 'D', it comes out from the centre.

5. Figure 'D' is double headed arrow. Except this all the figures have arrows with single head.

11. Answer figure 'A' completes the pattern of the given problem figure.

15. Answer figure 'B' completes the pattern of the given problem figures.

16. In given series of figures the fish turns 90° clockwise in a single step, in this way finally we get figure 'A'.

17. In the given series of figures darkened part of the circle moves clockwise, 90° in a single step in this way finally we get the figure 'C', which is the answer figure.

18. All the objects given in the problem figures are turning 90° clockwise together in a single step, in this way it appears finally like the answer figure 'A'.

19. In the given series of figures a point is increasing on the top of the semicircle in the last step it becomes like the answer figure 'A'.

20. In this series a line segment comes out from the rectangle step by step finally it becomes like the answer figure 'A'.

21. In the given sets of problem figures first image is reduced to get smaller one, then lines are drawned. In the same manner, after reducing and drawing the lines inside the figure looks like the answer figure 'B'.

22. In the given figure K is moved 90° anticlock wise then flipped up-side down. By the same process we get the figure 'D' as answer.

23. In the question figure is moved 90° clockwise as we do the same with the next set of figure it becomes like 'B'.

25. Figure is moved 135° clockwise when we apply this to the next set of figure we get figure 'B'.

32. Mirror image of word BRISK along XY line of reflection is ꓘSIꓤꓭ.

34. Mirror image of the given figure along XY line of reflection is figure 'C'.

51. Let principal = ₹ x

Amount = ₹ $3x$

Simple Interest = $3x - x = 2x$

Time = $\dfrac{\text{SI} \times 100}{\text{P} \times r} = \dfrac{2x \times 100}{x \times 25}$ = 8 years.

52. ∵ Cost of 12 kg of potatoes = ₹ 360

∴ Cost of 1 kg of potatoes = ₹ $\dfrac{360}{12}$

∴ Cost of 8 kg of potatoes = $\dfrac{360}{12} \times 8$ = ₹ 240.

53. CP = ₹ 150

SP = ₹ 180

Profit = 180 − 150 = ₹ 30

Profit % = $\dfrac{30}{150} \times 100$ = 20%

54. Required number of tiles = $\dfrac{4.8 \times 3.6}{1.2 \times 1.2}$

= $\dfrac{48 \times 36}{12 \times 12}$ = 12.

55. Area of the park without path = 100 × 60

= 6000 m²

Area of the park with path = 104 × 64

= 6656 m²

∴ Area of path = 6656 − 6000 = 656 m².

56. Perimeter of square = 4 × side

= 4 × 100 = 400 m.

57. Time taken = $\dfrac{25}{4+6}$ hrs.

= $\dfrac{25}{10} = \dfrac{5}{2} = 2\dfrac{1}{2}$ hrs.

Hence, they will meet at 10:00 a.m.

58. 11 and 21 both are co-primes.

59. The greatest number = 87420

60. $\dfrac{3}{4} \times 144 - \dfrac{2}{3} \times 96$

= 3 × 36 − 2 × 32

= 108 − 64 = 44.

61. 641664 ÷ 16 = 40104

```
16)  641664  (40104
      64
     ___
      16
      16
      ___
        64
        64
        ___
         X
```

62. First 5 multiples of 6 are

6, 12, 18, 24, 30

Sum = 6 + 12 + 18 + 24 + 30 = 90.

63. $\dfrac{3}{4} + \dfrac{4}{5} + \dfrac{8}{25} = \dfrac{75 + 80 + 32}{100}$

= $\dfrac{187}{100}$ = 1.87 = 1.870.

64. ∵ 3.65 × 0.5 = 1.825

∴ 365 × 0.5 = 182.5.

65. $\dfrac{17}{25} = \dfrac{17}{25} \times 100$ = 68%.

66. The sum of first-five multiples of 6 = 90

∴ The difference of ten's place and unit place

= 9 − 0 = 9.

67. 1277 − 3 = 1274

1368 − 3 = 1365

∴ HCF of 1274 and 1365 = 91.

68. LCM of 114 and 95

$$
\begin{array}{r|l}
19 & 114, 95 \\
\hline
 & 6, \quad 5 \\
\end{array}
$$

∴ LCM = 19 × 6 × 5 = 570.

69. 24 + [6 − {5 − 2(4 − 3)}]

= 24 + [6 − {5 − 2(1)}]

= 24 + [6 − {5 − 2}]

= 24 + [6 − 3]

= 24 + 3 = 27.

70. First seven multiples of 13 are

13, 26, 39, 52, 65, 78, 91

Sum = 13 + 26 + 39 + 52 + 65 + 78 + 91

= 13 [1 + 2 + 3 + 4 + 5 + 6 + 7]

$= 13 \times \dfrac{7 \times 8}{2}$

= 52 × 7 = 364

364 is nearest 365.

71. 1, 2, 4, 8, ...

Each term is doubled.

Hence, the next term of the series is 16.

72. Let Ram's weight = x kg

Rajesh's weight = $x - 5$ kg

Neha's weight = $x + 3$ kg

According to the question,

$x + x - 5 + x + 3 = 103$

⇒ $3x - 2 = 103$

⇒ $3x = 105$

⇒ $x = 35$

Hence, weight of Ram = 35 kg.

73. Average speed of the bus = $\dfrac{400}{8}$ = 50 km/hr.

74. There are 8 students who play table tennis.

75. Number of students who used school bus

= 50 × 6 = 300

∴ Required % = $\dfrac{300}{750} \times 100$ = 40%.