Intelligence Test (Non-Verbal)

On day 1 candidates are given Intelligence Test (Verbal and Non-Verbal), then there is a picture perception test. In non-verbal intelligence test, a series of patterns and figures are provided. The candidate has to identify the relation between figures and pick the correct alternative from the given choices.

You will usually find questions on the following:

Analogy

- Series
- Classification
- Completion of incomplete pattern
- · Spotting out the embedded figure
- Mirror and water image
- · Cube and Dice

Some sample tests are provided with answers for practice.

Analogy

In these type of questions, a pair of related figures is provided and a similar relationship is to be established between two other figures, by selecting one of them from a set of alternatives.

These type of questions can be better understood with the help of examples given below :

Directions (Example Nos. 1-2) Figures (i) and (ii) are related in a particular manner. Establish the same relationship between figures (iii) and (iv) by choosing a figure from amongst the five alternatives, which should replace the question mark in figure (iv).

Problem figures

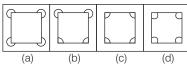








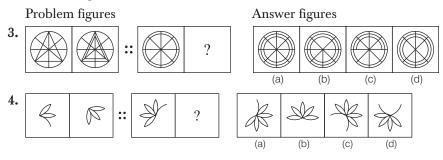
Answer figures



Problem figures Answer figures ? (a) (b) (c) (d)

- ✓ 1. (a) In first pair of problem figures, one more arm/side is added to the first figure to arrive at the second figure and the half-circle at the corner of the sides, which were at the outside, comes in. Similarly, in second pair of problem figures, one more side is added to the first figure and the half-circle at the corner of the sides, which were at the inside, comes outside.
 - **2.** (c) First design of first pair of problem figures is rotated by 90° and then it is placed on the original to get the second figure of the pair. Similar concept is used in second pair to get the right answer.

Directions (Examples Nos. 3-4) In the following questions, select the figure from the answer figures which comes next in the series.



- 3. (a) In the second figure, a figure is generated similar to the first figure inside the circle.
 - (b) Half of the petals is added to the right side and figure is rotated by 45° clockwise.

Series

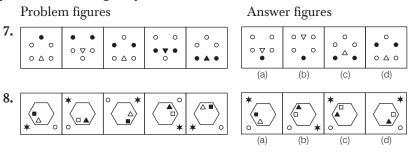
In these type of questions, there are two sets of figures. One set is called 'Problem figures' while the other as 'Answer figures'. These problems are based upon the continuation of figures. There are various types of problems on series. However, the basic concept for each type is the same. There is a sequence of figures depicting a change step-by-step. A candidate has to select a figure from the given set of figures, which would continue the series.

These type of questions can be better understood with the help of examples given below :

Directions (Example Nos. 5-6) In each of the questions given below which one from the four/five answer figures should come at the right of the problem figures to complete the series logically.

- ✓ 5. (c) The main figure rotates 90°, 45°, 90°, 45° and 90° anit-clockwise in each step. The shaded square become circle and circle repeat twice and square comes after circle. The shaded portion in the main figure shift on the sides of line attached to square and circle.
 - **6.** (a) One and two parts of the line diappear and appear alternately and the disappearance of line is anti-clockwise.

Directions (Example Nos. 7-8) In each of the questions given below which one from the four/five answer figures should come at the right of the problem figures to complete the series logically.

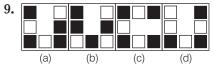


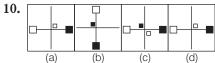
- - **8.** (c) In the next figure of hexagon, two designs "' and ' ' are moving one step in clockwise direction. Also, two designs ' ' and ' Δ ' are moving one step in anti-clockwise direction and are alternately shaded.

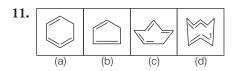
Classification

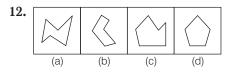
In such problems, we are given a set of figures, such that all, except one have similar characteristics. We are required to select the figure which differs from all other figures in the given set. These type of questions can be better understood with the help of examples given below:

Directions (Example Nos. 9-12) In the following questions trace out the alternative figure which contains problem figure as its part.







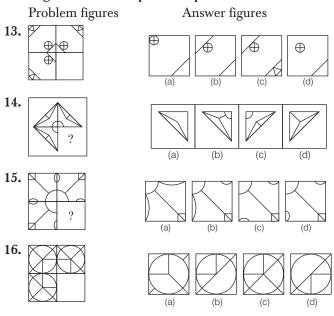


- - **10.** (c) Except figure (c), all other figures have common features of having a single square either shaded or unshaded at the intersections of lines.
 - **11.** (*d*) Only in figure (d), the difference of lines of the figure and lines in it is two whereas in others the difference is three.
 - **12.** (*d*) Except figure (d), all other figures are made up of six line segments while figure (d) is made up of five line segments.

Completion of Incomplete Pattern

In such type of problems, a figure is given which has a definite pattern. But nearly a quarter of that pattern is left blank. The candidate has to select that answer figure which best fits into the blank so as to complete the pattern of the figure.

Directions (Example Nos. 13-16) In each of the following problems, select a figure from the given four alternatives, which when placed in the blank space of problem figure would complete the pattern.



✓ 13. (c) The missing figure which will complete the figure pattern is given by option (c), i.e.



14. (c) The missing figure which will complete the figure pattern is given by option (c), i.e.



15. (*d*) The missing figure which will complete the figure pattern is given by option (d), i.e.



16. (c) The missing figure which will complete the figure pattern is give by option (c), i.e.



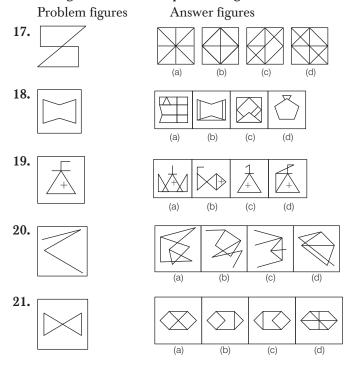
Spotting Out Embedded Figure

A figure (X) is said to be embedded in a figure (A), if figure (A) contains figure (X) as its part.

In such type of problems, a figure (X) is given, followed by four figures in such a way that figure (X) is embedded in one of them. A candidate has to select such figure in which figure (X) is embedded.

These type of questions can be better understood with the help of examples given below :

Directions (Example Nos. 17-21) In each of the following problems, choose the answer figure in which the problem figure is embedded.



✓ 17. (a) On close observation, we find that the problem figure is embedded in figure (a) as shown adjacent



18. (b) On close observation, we find that the problem figure is embedded in figure (b) as shown adjacent



19. (*d*) On close observation, we find that the problem figure is embedded in figure (d) as shown adjacent



20. (*d*) On close observation, we find that problem figure is embedded in figure (d) as shown adjacent



21. (a) On close observation, we find that the problem figure is embedded in figure (a) as shown adjacent



Mirror and Water Image

When a mirror is placed in front of an object then the left hand side (LHS) and Right hand side (RHS) of the object interchange their places while top and bottom remain same.

The water image of a figure or an object looks like the mirror image of the figure, when the mirror is placed horizontally at the bottom of the figure. In the image the left hand side (LHS) and Right hand side (RHS) remains unchanged but the top and bottom of the figure gets interchanged.

Directions (Example Nos. 22-23) In each of the following questions, you are given a combination of alphabets and/or numbers followed by four alternatives (a), (b), (c) and (d). Choose the alternative which most closely resembles the mirror image of the given combination.

Ex. 22 TRIUMPHS

(a) SHPMUIRT

(b) SPMIURT

(c) STRIUMPH

TRIUMPHS (b)

Sol. (d) If we put a mirror in front of the word, we will get the image like TRIUMPHS | ZHYMUIST

Ex. 23 73AP4OD8

8DO4PA37 (a)

73AP4OD8 (d)

8GO4PA37 (2)

73A94OD8 (b)

Sol. (b) If we put a mirror in front of the number, we will get the image like 73AP4OD8 | 8GO49A87

Ex. 24 Choose the alternative which shows the correct water image of the word given.

FROG

(a) FROG

(b) GORF

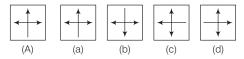
EKOC (a)

(q) FROG

Sol. (a) The water image of given word will be

FROG

Ex. 25 Choose the correct water image of the figure (A) from the given four alternatives (a), (b), (c) and (d).



Sol. (b) The water image of figure (A) will be



Cube and Dice

Cube

In such type of problems, a large cube is painted and the candidates are required to cut and count the blocks of selected sides of cube.

Ex. 26 A cube whose two adjacent faces are coloured is cut into 64 identical small cubes. How many of these small cubes are not coloured at all?

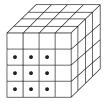
(a) 60

(b) 48

(c) 24

(d) 36

Sol. (d) As shown in the figure, let the upper face and the Right Hand Side (RHS) face of the cube be coloured. Then, it is evident from the figure that the row of smaller cubes (formed by cutting the large cube into 64 parts) which are indicated by dots, have none of their sides coloured.



Since, there are 9 such rows and each row consists of 4 cubes, so that there are $9 \times 4 = 36$ cubes which are not coloured. Hence, the answer is (d).

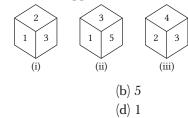
(a) 6

(c) 4

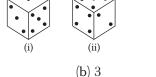
Dice

In such type of problems we are given figures showing the same dice (in the form of a cube or cuboid) in various positions. After observing these figures, we have to find the number opposite to a given number on the dice.

Ex. 27 A dice is thrown three times and its different positions are given below. Find the number on the face opposite the face showing 3.



- **Sol.** (a) The number 3 occurs in all the given figures. It is clear that 1, 2, 4 and 5 lie adjacent to 3. Clearly, 6 lies opposite the face showing 3.
- **Ex. 28** Two different positions of a dice are given below. What will be the number of dots on the face opposite the face having 2 dots?



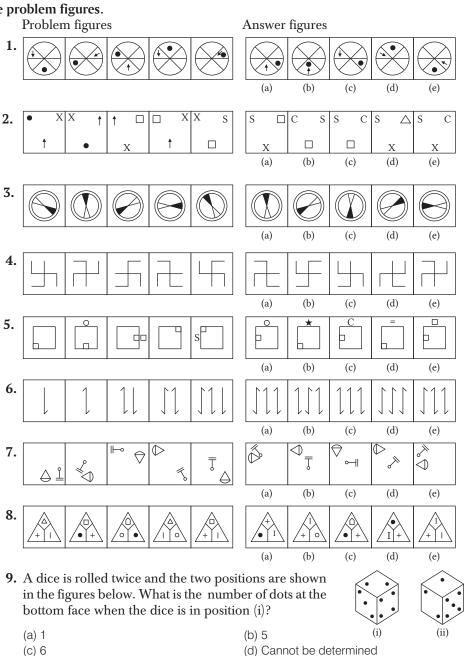
(a) 6 (b)

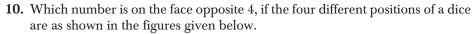
(c) 1 (d) Cannot be determined

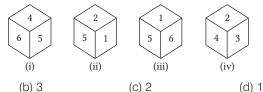
Sol. (b) The number 5 occurs in both figures (i) and (ii). Now, we shall assume the dice in figure (i) to be rotated clockwise so, that the face with 5 dots appears at the same position as in figure (ii) i.e. on the top (face V). Then 3 dots will appear opposite the face having 2 dots.

Exercise 1

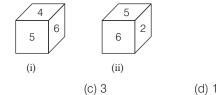
Directions (Q.Nos.1-8) In the following questions, select a figure from amongst the answer figures which will continue the same series as established by the problem figures.







11. In the following question the two positions of a single dice are given. Find the digit on the face which is opposite to the face having digit 2.



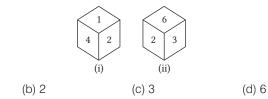
(a) 6

(a) 1

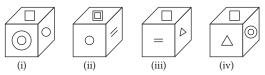
(a) 5

(b) 4 (c) 3 (d) 1

12. What will be the number at the bottom, if 5 is at the top; the two positions of the dice as given below?



Directions (Q.Nos. 13-15) Answer the following questions according to four views of a cube.



- 13. The symbol at the bottom of (iii) is
 - (a) (
- (b) (i)
- (c) \
- (d)

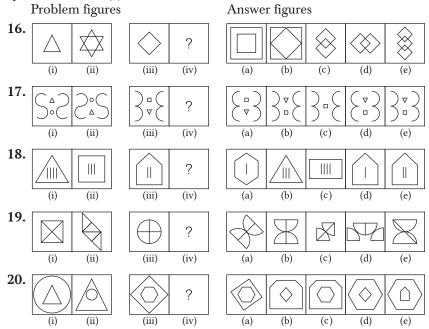
14. The symbol opposite the face having the symbol '=' is

- (a) (
- (b) \wedge
- (c) (O)
- (d)

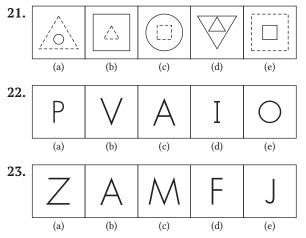
15. The symbol opposite the face having the symbol ' Δ ' is

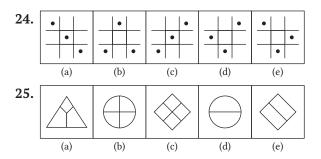
- (a) ()
- (b) =
- (c) (O)
- (d)

Directions (Q.Nos.16-20) The second figure in the first part of the problem figure bears a certain relationship to the first figure. Similarly one of the figures in answer figures bears the same relationship to the first figure in the second part. You have to select the figure from the set of answer figures which would replace the sign of questions marks (?).

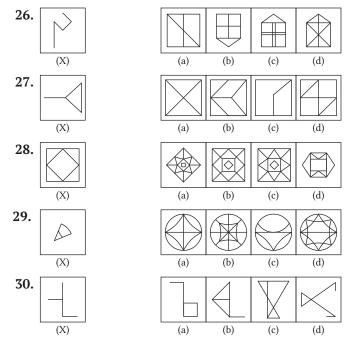


Directions (Q. Nos.21-25) In the following questions select the figure from the choices which is not like the other figures.

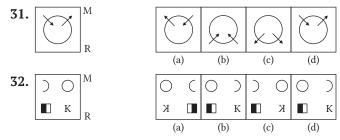


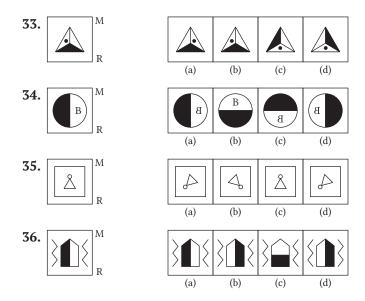


Directions (Q.Nos. 26-30) In the following questions you are given a figure followed by four figures (a),(b),(c) and (d). Such that problem figure is embedded in one of them. Trace out the alternative figure which contains problem figure as its part.



Directions (Q.Nos. 31-36) In the following questions choose the correct alternative which most closely resembles the mirror image of given combination.





Directions (Q.Nos. 37-40) A cube colours red on one face, green on opposite face, yellow on another face and blue on a face adjacent to the yellow face. The other two faces are left uncolours. It is then cut into 125 smaller cubes of equal size.

37. How many cubes are uncoloured on all the faces?

(a) 64

- (b) 48
- (c).36
- (d) 27
- **38.** How many cubes have at least two coloured faces?

(a) 23

- (b) 21
- (c) 10
- (d) 16
- **39.** How many cubes have at least one green face?

(a) E

- (b) 16
- () OF
- (d) 32
- **40.** How many cubes are colourd red on one face and have the remaining faces uncoloured?

(a) 16

- (b) 12
- (c) 20
- (d) 8

Directions (Q.Nos. 41-45) In the following questions, select a figure from amongst the four alternatives, which when placed in the blank space of figure (X) would complete the pattern.

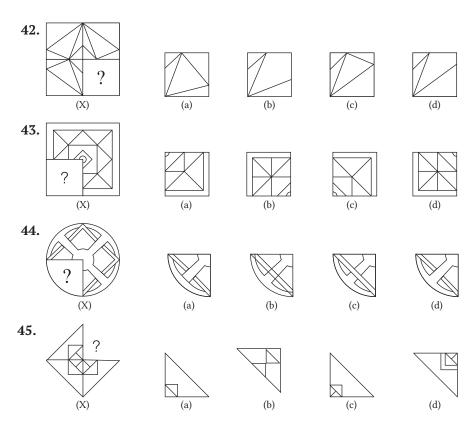
41.



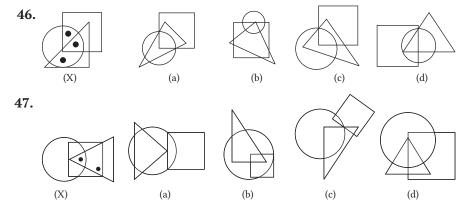




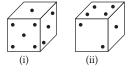




Directions (Q. Nos. 46-47) In each of the following questions, from amongst the figures marked (a), (b), (c) and (d). Select the one which satisfies the same conditions of placement of the dot as in figure (X).

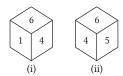


48. Two positions of a dice are shown below, when there are two dots at the bottom, the number of dots at the top will be



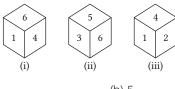
- (a) 3
- (c) 6

- (b) 5
- (d) Cannot be determined
- 49. Two positions of a dice are shown below, when number 1 is on the top, what number will be at the bottom?



- (a) 2
- (c) 5

- (b) 3
- (d) Cannot be determined
- 50. Three positions of a dice are given. Based on them, find out which number is found opposite the number 2 in the given cube.



- (a) 6
- (c) 3

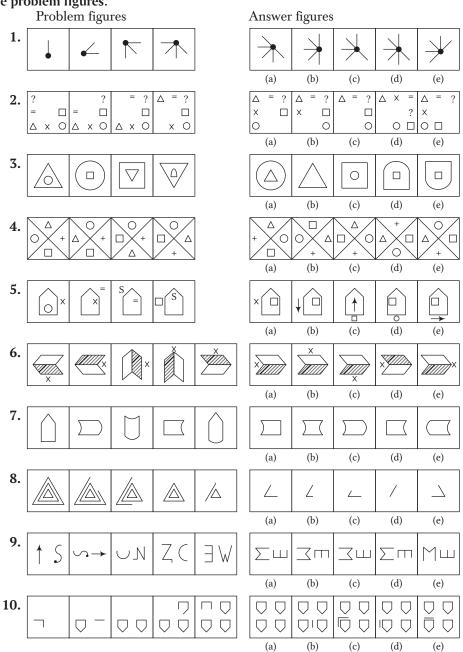
- (b) 5
- (d) 1

Answers

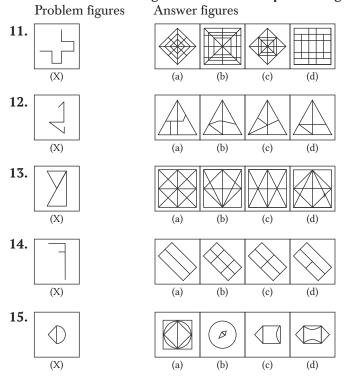
1. (a)	2. (a)	3. (C)	4. (d)	5. (c)	6. (b)	7. (e)	8. (C)	9. (c)	10 . (d)
11 . (b)	12. (b)	13 . (d)	14. (c)	15 . (a)	16. (C)	17. (d)	18 . (a)	19 . (a)	20 . (d)
21 . (d)	22. (a)	23 . (e)	24 . (b)	25. (a)	26 . (d)	27 . (b)	28. (b)	29 . (b)	30 . (b)
31 . (a)	32. (a)	33 . (a)	34 . (d)	35. (c)	36 . (b)	37 . (b)	38. (b)	39 . (c)	40 . (a)
41 . (b)	42. (c)	43 . (c)	44 . (d)	45. (c)	46. (d)	47. (d)	48 . (a)	49. (c)	50 . (a)

Exercise 2

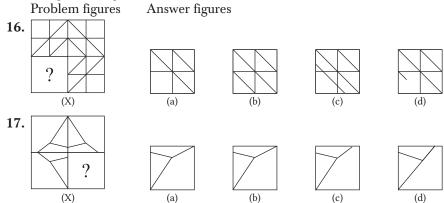
Directions (Q. Nos. 1-10) In the following questions, select a figure from amongst the answer figures which will continue the same series as established by the problem figures.

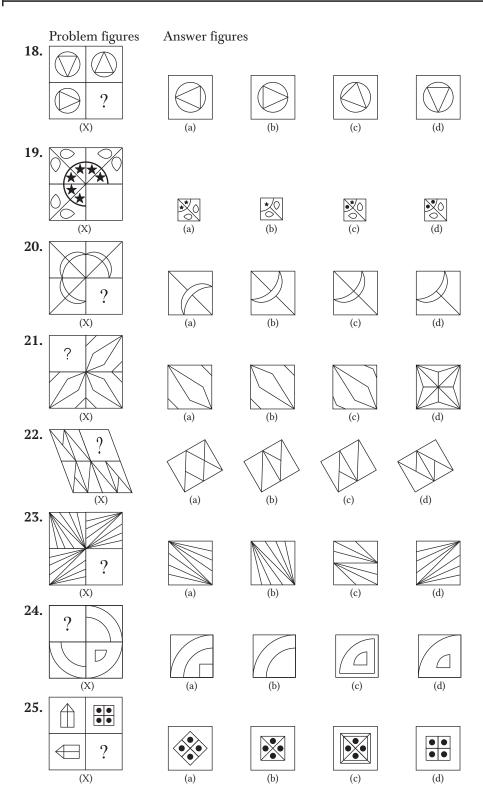


Directions (Q.Nos.11-15) In the following questions you are given a figure followed by four figures, such that problem figure is embedded in one of them. Trace out the alternative figure which contains problem figure as its part.



Directions (Q.Nos.16-25) In the following questions, select a figure from amongst the four alternatives, which when placed in the blank space of figure (X) would complete the pattern.

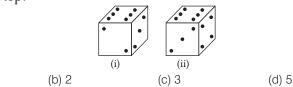




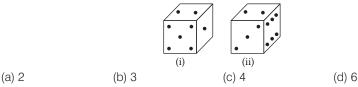
(a) 1 or 5

(a) 1

26. Two positions of a dice with 1 to 6 dots on its sides are shown below. If the dice is resting on the side with three dots, what will be the number of dots on the sides at the top?



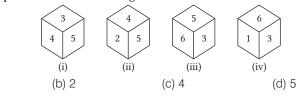
27. Two positions of a block are given below. When 2 dots are at top, what will be number of dots at the bottom?



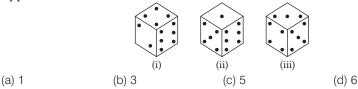
28. Amongst the following figures, find the correct one, if it is known that the total number of dots on opposite faces of the cube shown is always 7.



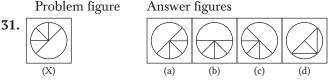
29. Show below are four different positions of the same dice. Find the number on the face opposite the face showing 6.

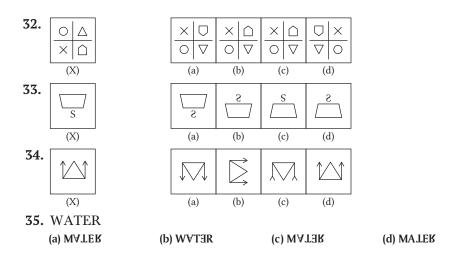


30. Three different positions of a dice are shown below. How many dots lie opposite 2 dots?

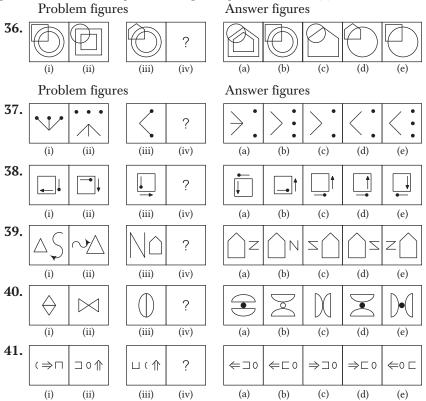


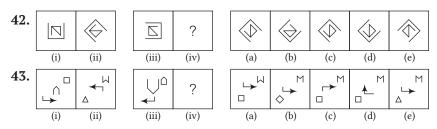
Directions (Q.Nos.31-35) In the following questions, select the figure from amongst the given choices which is the water image of the problem figure.



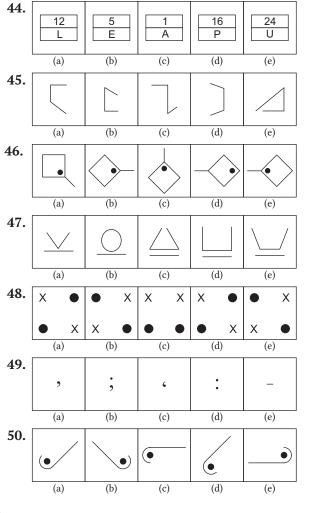


Directions (Q.Nos.36-43) In the following questions, the second figure in the first part of the problem figure bears a certain relationship to the first figure. Similarly, one of the figures in answer figures bears the same relationship to the first figure in the second part. You have to select the figure from the set of answer figures which would replace the sign of questions mark (?).





Directions (Q.Nos.44-50) In the following questions select the figure from amongst given five figures, the choices which is not like the other figures.



Answers

1. (b)	2. (b)	3. (d)	4. (C)	5 . (e)	6. (a)	7. (a)	8. (b)	9. (c)	10 . (C)
11 . (d)	12 . (d)	13 . (C)	14 . (b)	15 . (a)	16 . (a)	17. (C)	18 . (a)	19 . (a)	20 . (c)
21 . (a)	22 . (b)	23 . (b)	24 . (d)	25 . (a)	26 . (a)	27. (C)	28 . (a)	29. (C)	30 . (c)
31. (C)	32. (a)	33. (d)	34 . (a)	35 . (a)	36. (a)	37. (C)	38. (d)	39. (d)	40 . (c)
41 . (b)	42 . (b)	43 . (c)	44 . (e)	45 . (d)	46. (d)	47 . (b)	48. (C)	49 . (e)	50 . (a)