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**MENTAL  
ABILITY TEST**

# CHAPTER 01

## ODD-MAN OUT

Odd man out is the process of putting things or objects into a group and then finding the different object or thing that does not belong to the group. In this chapter, we deal with questions which have a set of four figures, out of which except one, are alike or have some common features/characteristics. You have to select that exclusively different figure from the given set.

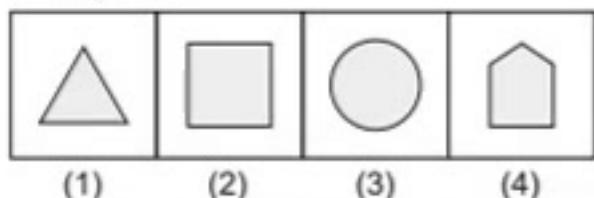
*In this chapter the changes in figure are based on the following types*

- Based on formation
- Based on relation of two elements
- Based on method of writing
- Based on number of side
- Based on different elements
- Based on real images
- Based on position
- Based on rotation

### Based on Formation

In this type, out of the four figures three figures are formed in a same manner while fourth figure is different. Candidates are required to find out odd figure.

Example 1.

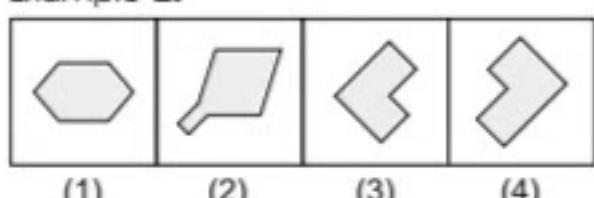


Sol. (3) Except figure (3), all other figures are formed by straight lines while figure (3) is formed by curved line.

### Based on Number of Side

In this type, three designs have equal number of sides while fourth contains different number of sides.

Example 2.

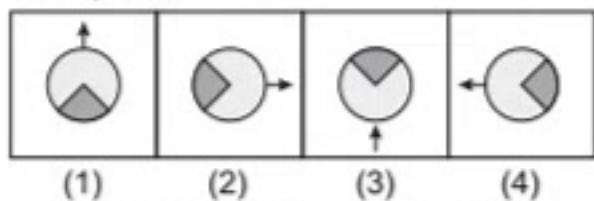


Sol. (2) Except figure (2), all other figures have 6 straight lines while figure (2) has seven straight lines.

### Based on Position

In this type, out of the four figures elements in three figures are in same position while in one figure elements are in different position.

**Example 3.**

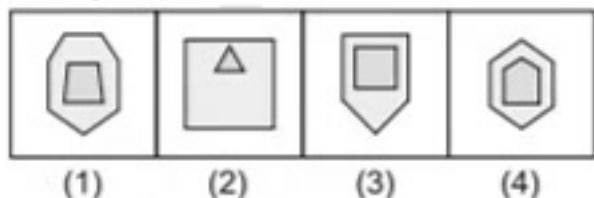


Sol. (3) Except figure (3), in all other figures the shaded portion and arrow are pointing in same direction while in figure (3) the shaded portion and arrow are pointing in opposite direction.

### Based on Relation of Two Elements

In this type, all the four figures contain two elements. Elements in each figure are related to one another in a certain way. In different figure elements are differently related to one another.

**Example 4.**



Sol. (1) Except figure (1), in all other figures, inner design has one less number of sides than outer design while in figure (1) inner design has three less number of sides than outer design.

### Based on Different Elements

In this type, three figures have same elements while fourth has different. Candidates are required to choose the figure which has different elements.

**Example 5.**

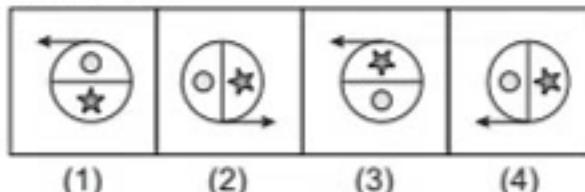
+	+	+	+	+	x	x	x
x		+	x	+	x	+	
x	+	x	x	x	+	x	+

Sol. (4) Except figure (4), all others figures have three '+' and two 'x' designs while figure (4) has two '+' and three 'x' designs.

### Based on Rotation

In this type, out of the four figures three figures have same rotational direction i.e. either clockwise or anti-clockwise while fourth rotates in different direction. Candidates are required to find out the odd figure.

**Example 6.**



Sol. (4) Except figure (4), all other figures are moving in anti-clockwise direction while figure (4) is moving in clockwise direction.

### Based on Method of Writing

In this type, three letters are formed by similar elements while the fourth one is formed by different elements.

**Example 7.**

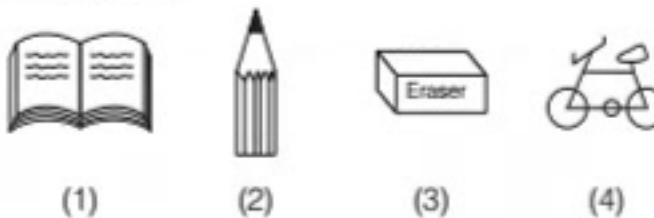


Sol. (2) Except figure (2), all other letters are made up of three straight lines while the letter in figure (2) is made up of two straight lines.

### Based on Real Images

In this type, four diagrams of real images are given which show some real meaning. In these figures three represent similar meaning while the meaning of one figure is different from others. The candidates are required to choose the different image.

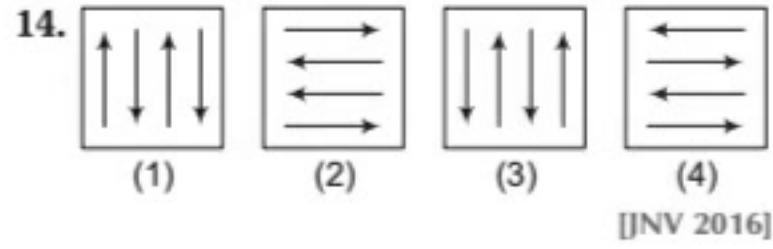
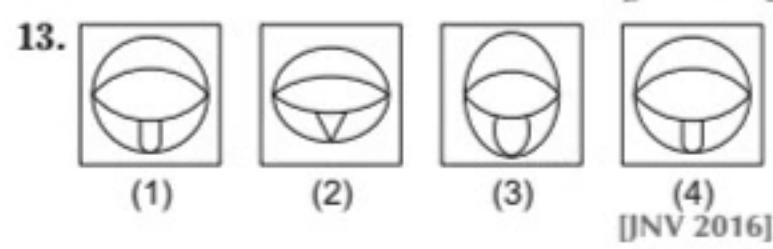
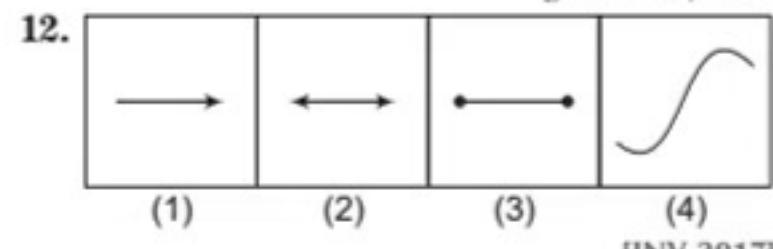
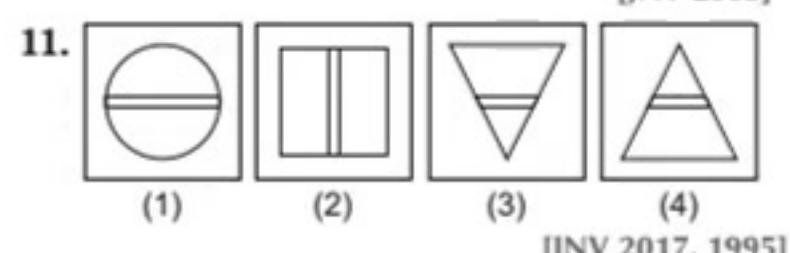
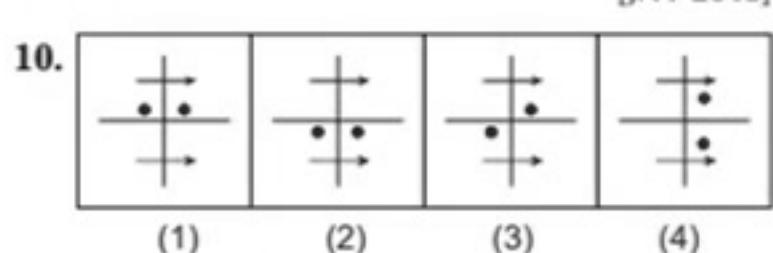
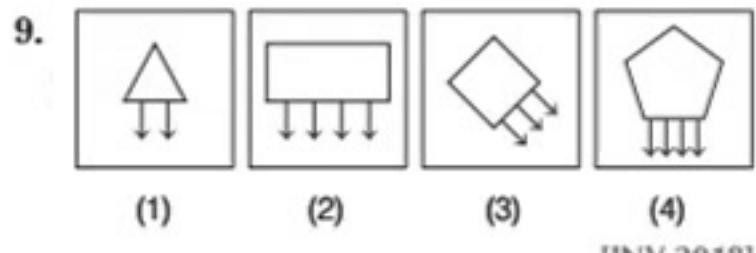
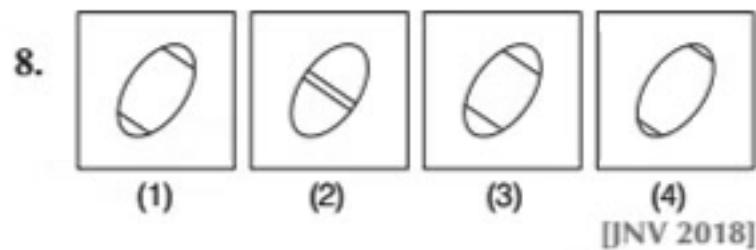
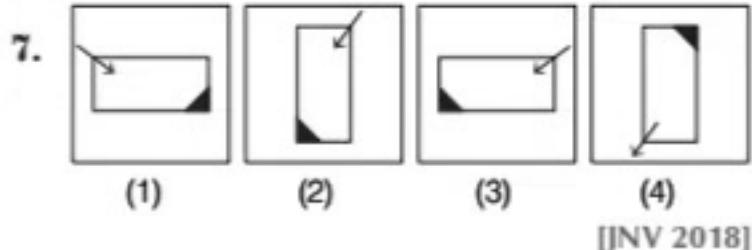
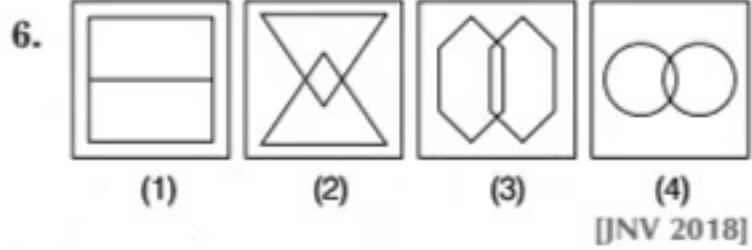
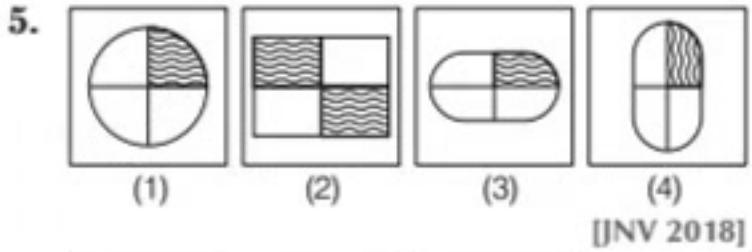
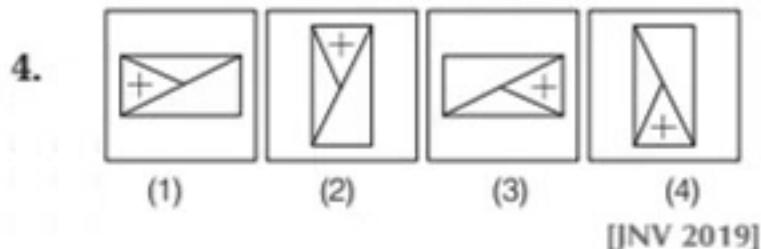
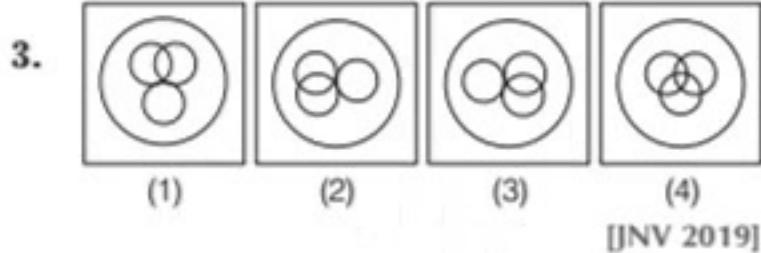
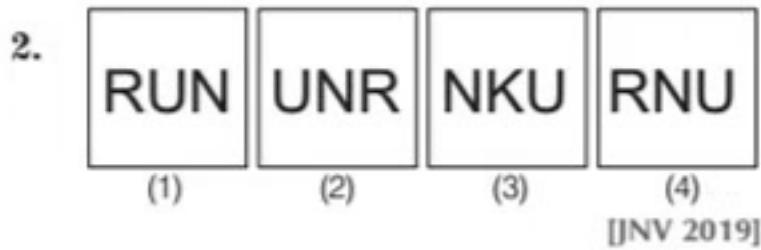
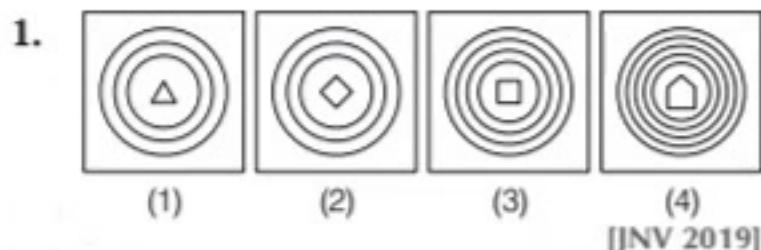
**Example 8.**

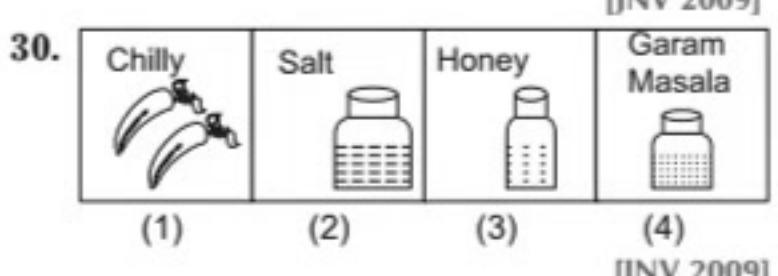
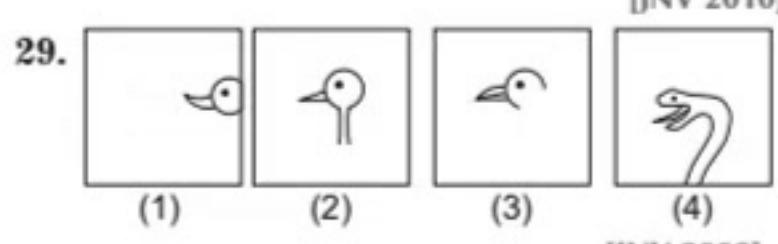
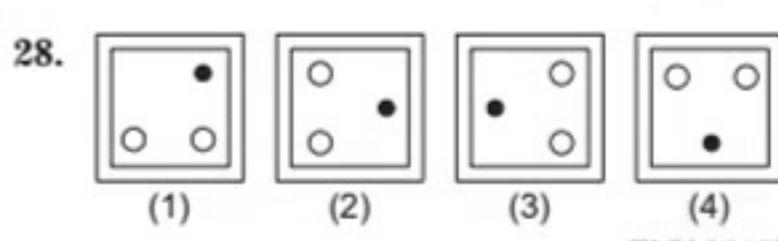
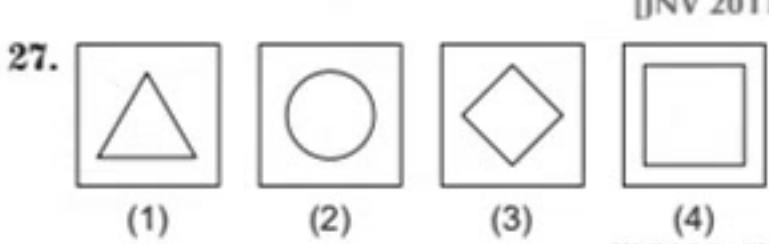
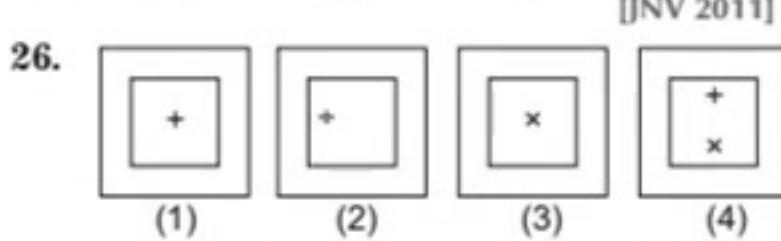
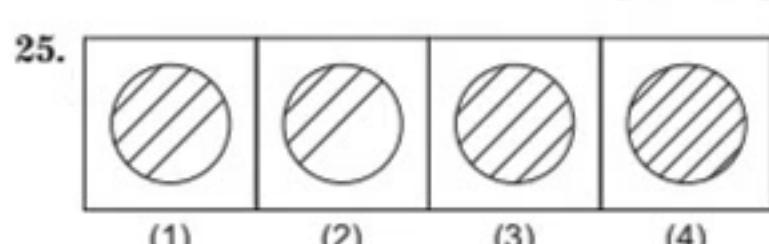
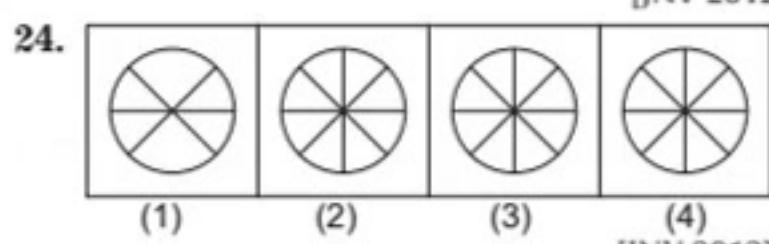
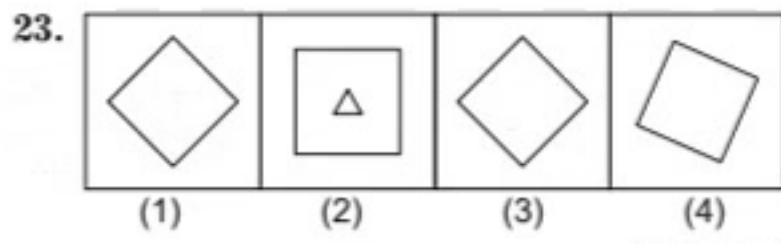
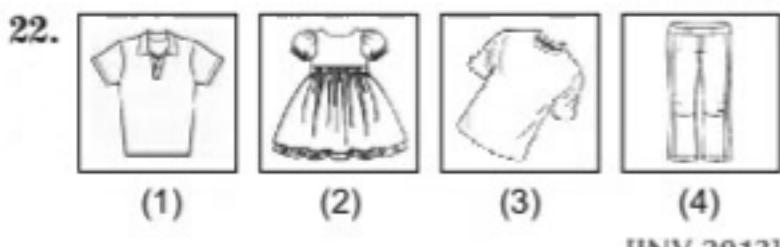
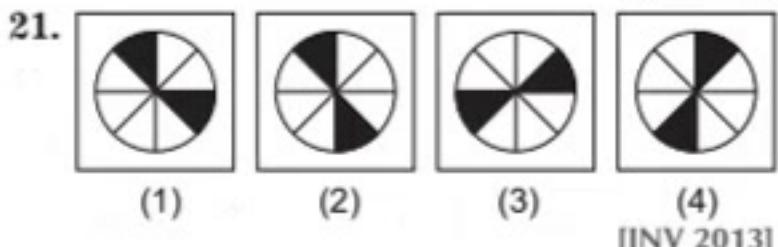
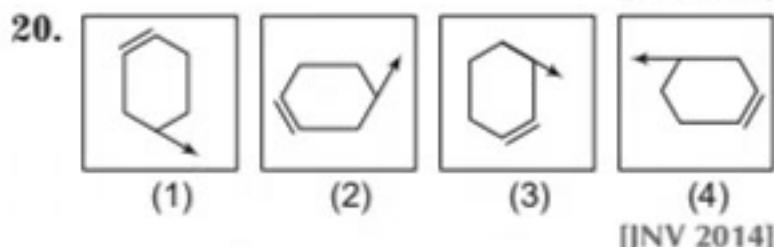
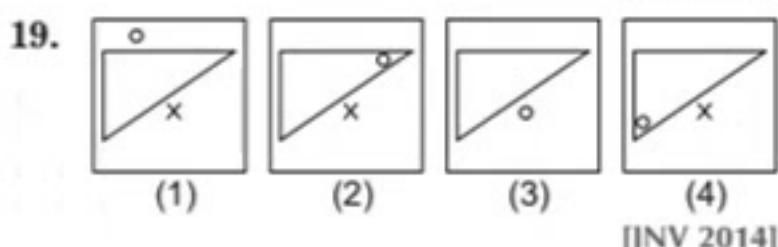
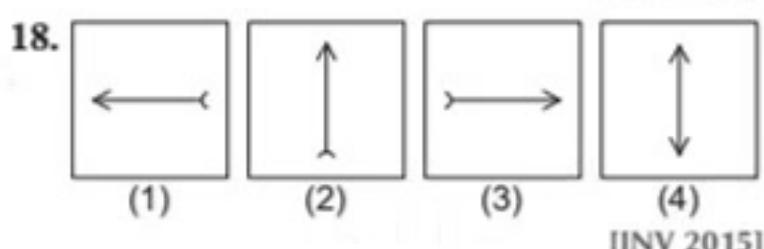
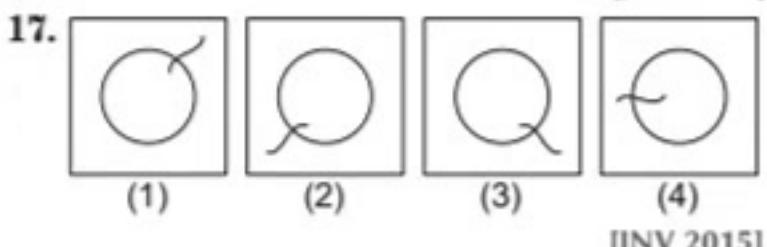
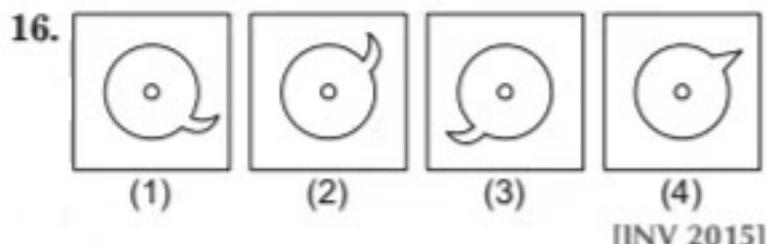
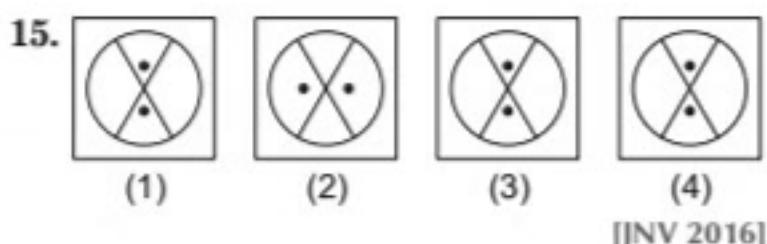


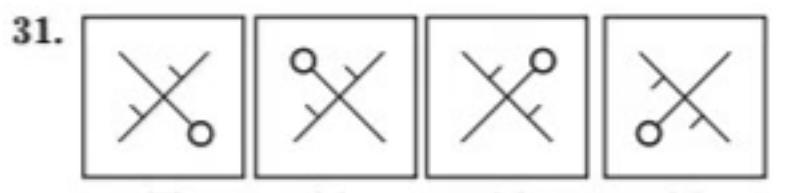
Sol. (4) Except cycle all others are stationary items.

# Entrance Corner

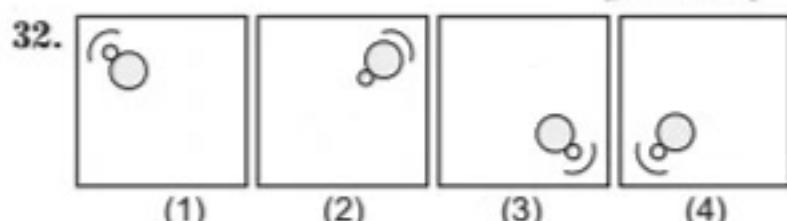
**Directions (Q. Nos. 1-46)** In the following questions, there are four figures. Three of them have common relation or characteristics and belong to one class. Select the figure which different and does not have any relation with the other figures in the group.



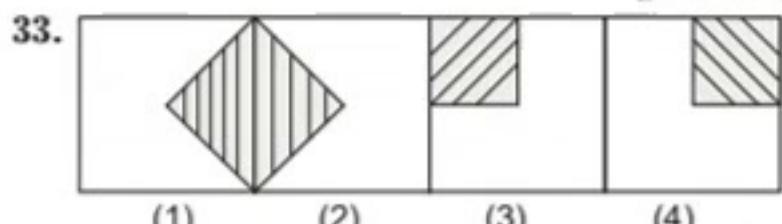




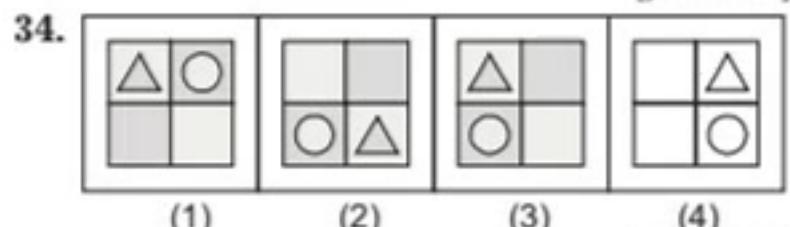
[JNV 2008]



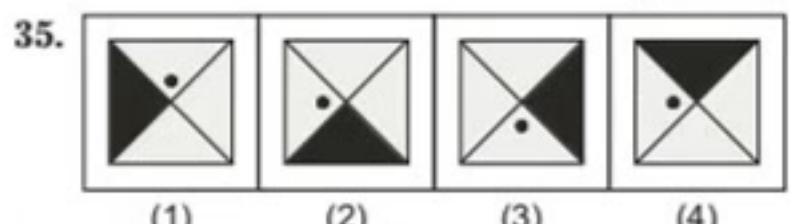
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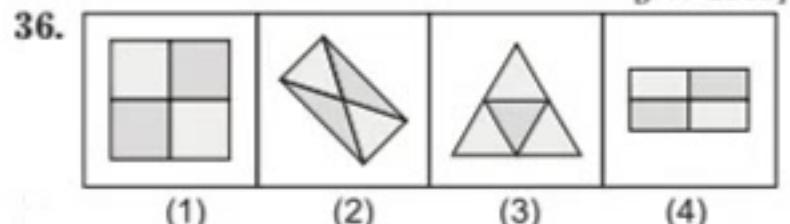
[JNV 2007]



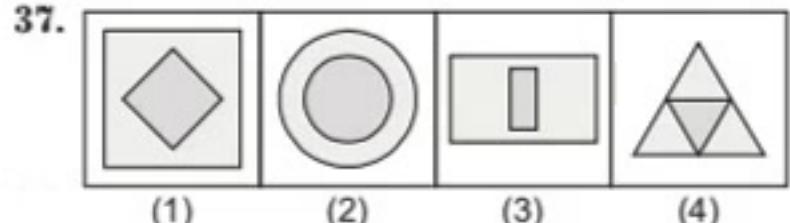
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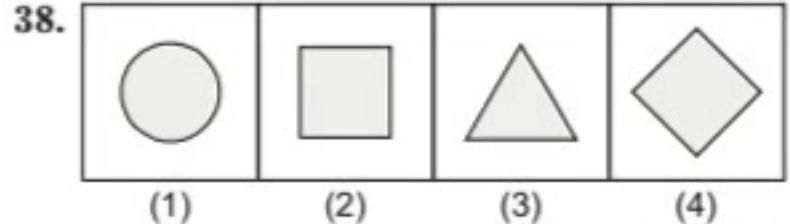
[JNV 2005]



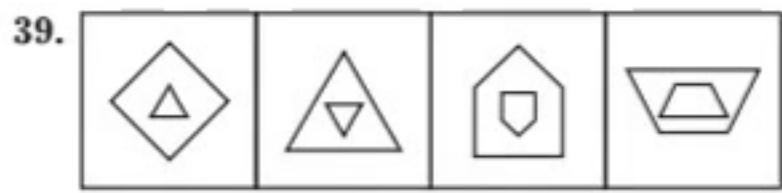
[JNV 2004]



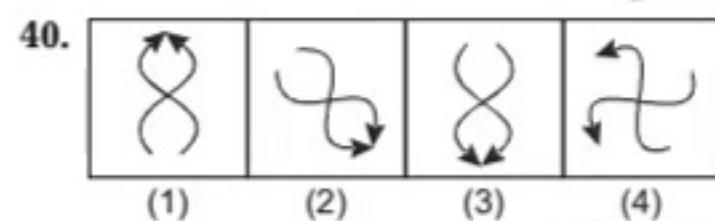
[JNV 2004]



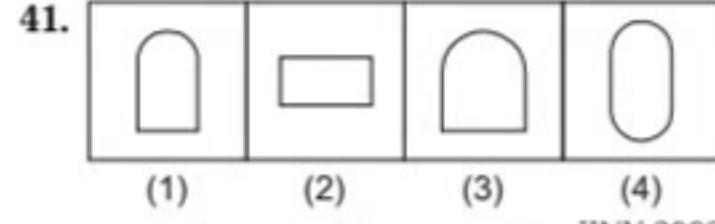
[JNV 2003]



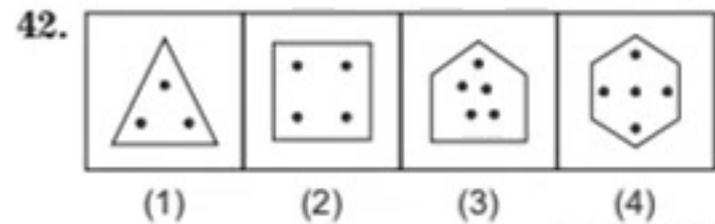
[JNV 2003]



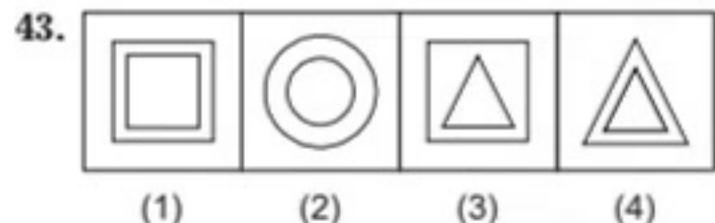
[JNV 2002]



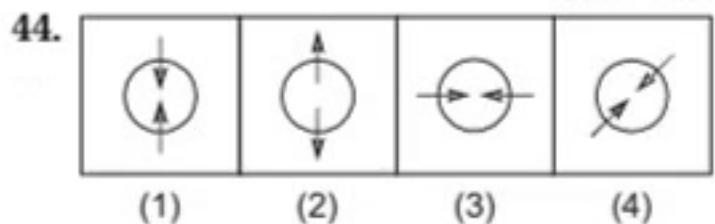
[JNV 2002]



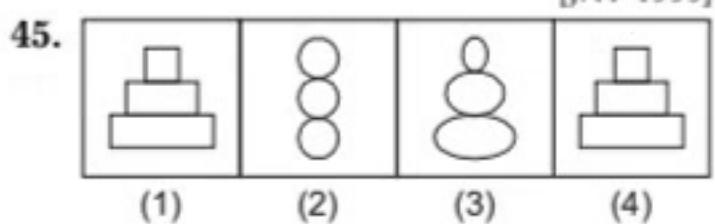
[JNV 2000]



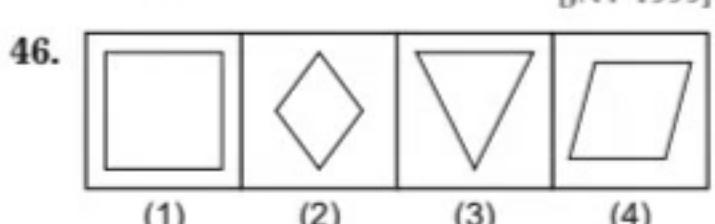
[JNV 2000]



[JNV 1999]



[JNV 1999]



[JNV 1998]

## Answers

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

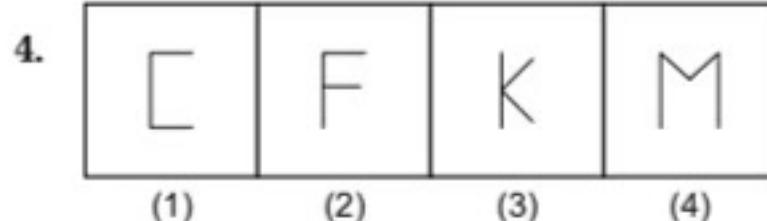
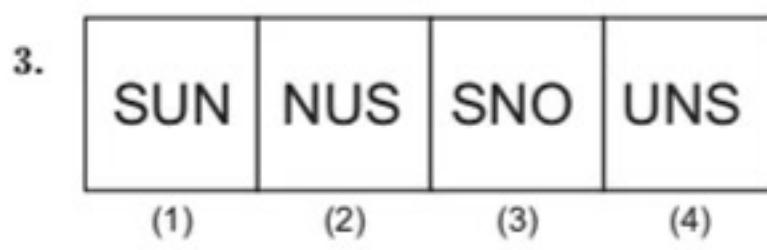
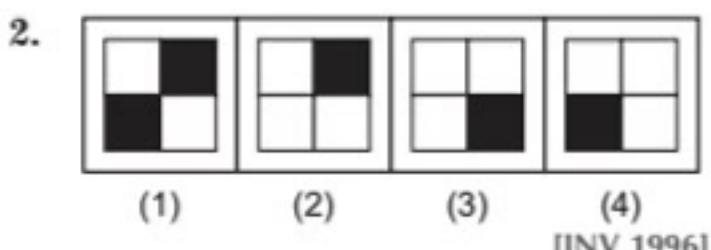
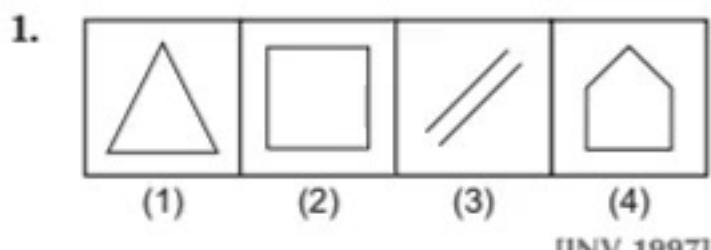
## Hints and Solutions

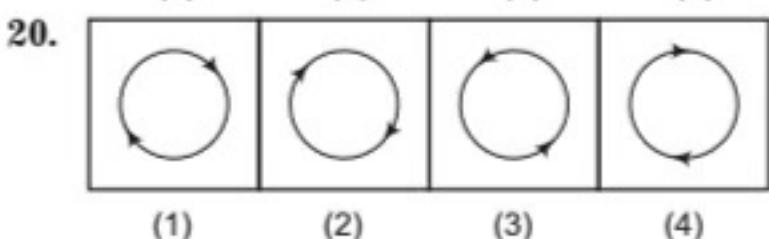
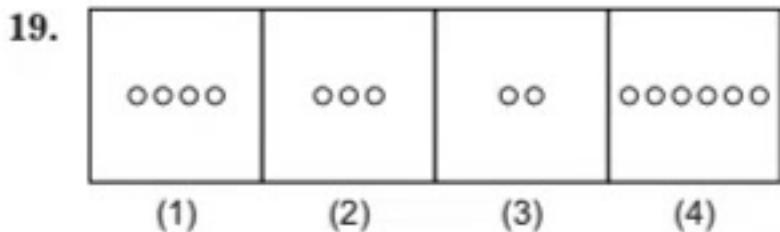
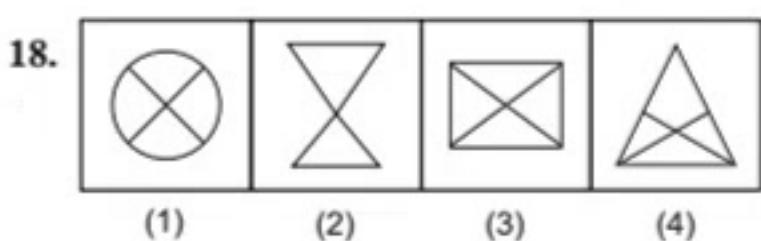
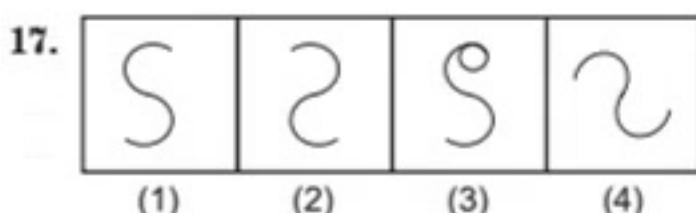
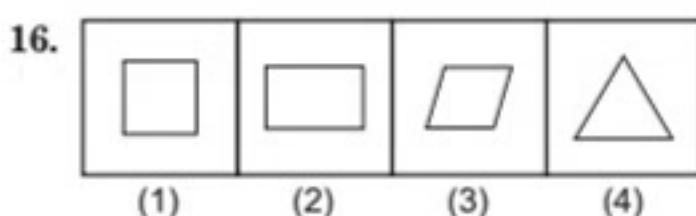
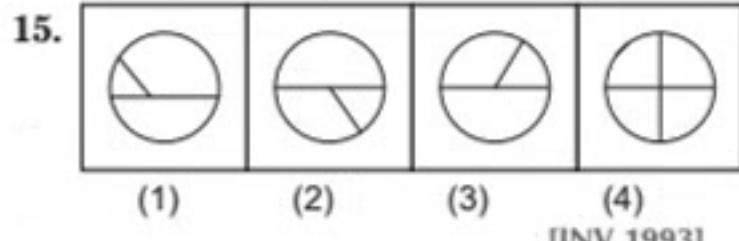
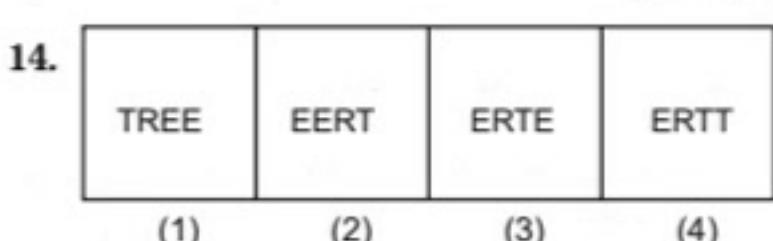
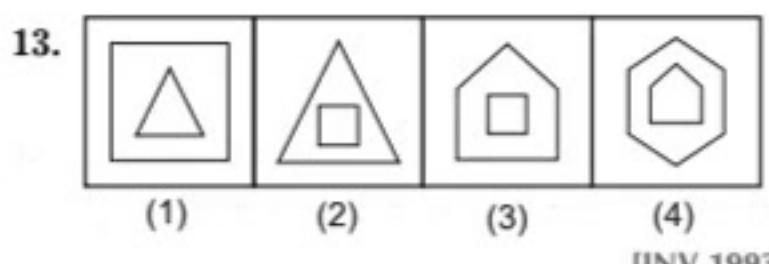
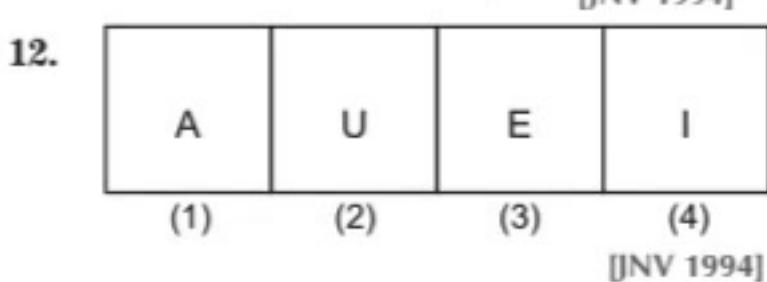
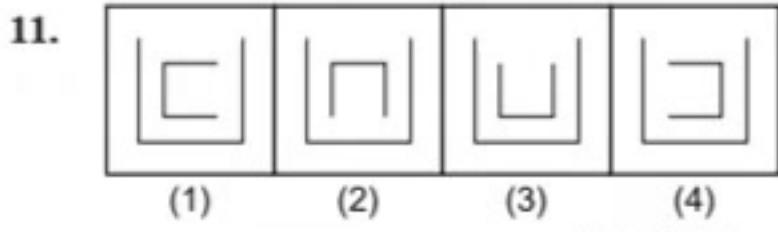
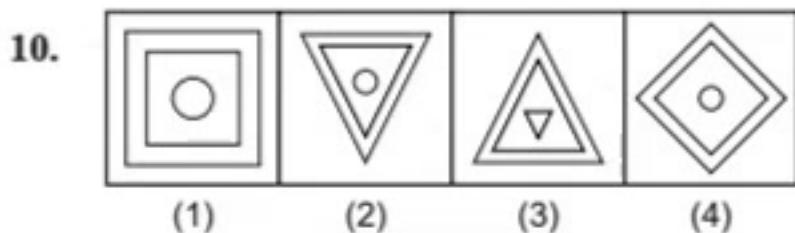
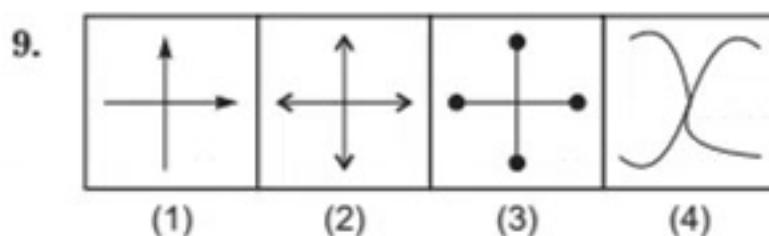
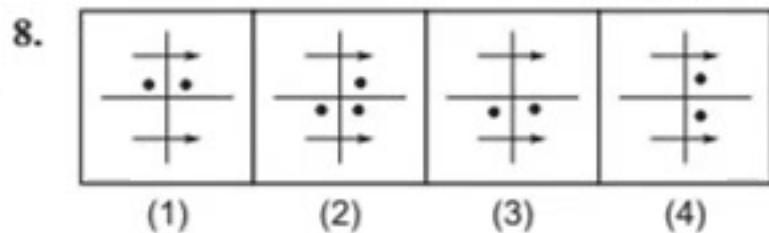
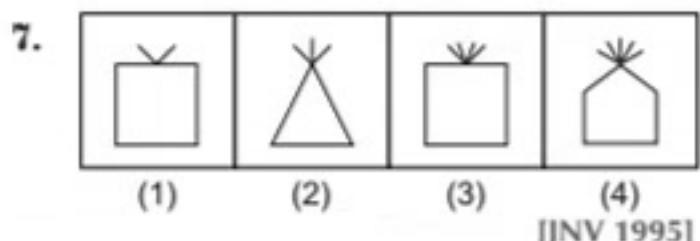
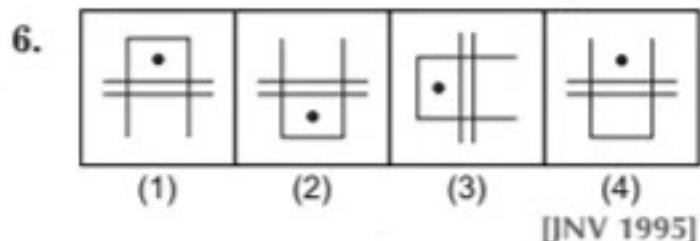
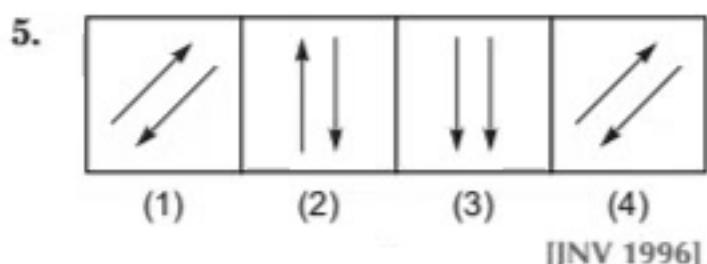
1. Except figure (2), in all other figures the innermost geometrical figure is made up of similar number straight lines as there are circles.  
Hence, figure (2) is different.
2. Except figure (3), all other figures consist of three letters R, U and N. But in figure (3), letter 'K' is used in place of 'R'.  
Hence, figure (3) is different.
3. Except figure (4), all other figures have only two intersecting circles. But in figure (4) all the three circles are intersecting each other.  
Hence, figure (4) is different.
4. Except figure (2), all other figures are same when rotated.
5. Except figure (2), in all other figures, only one part of the figure is shaded while in figure (2) two parts are shaded.
6. Except figure (1), in all other figures, two similar figures are intersecting each other.
7. Except figure (4), in all other figures the arrow is pointing towards the shaded portion of rectangle. But in figure (4) it is pointing in opposite direction.
8. Except figure (2), in all other figures the two lines are at the corner of the oval while in figure (2) both the lines are at the centre of the oval.
9. Except figure (2), all other figures have one less number of arrows as the number of lines in shape.
10. Considering the position of two black small circles figure (3) is different from other figures.
11. All figures in serial numbers (1), (3) and (4) have two parallel lines drawn horizontally but in figure (2) the parallel lines are drawn vertically, therefore figure (2) is different from other remaining figures.
12. Except figure (4), all other figures are made up of straight lines but figure (4) is made up of curved line.
13. Except figure (2), all other figures are made up of curved lines but in figure (2) there are two straight lines.
14. Except figure (2), in all other figures position of arrows changed alternatively.
15. Except figure (2), all other figures are same.
16. Except figure (4), all other figures have curved line outside the circle in same manner.
17. Except figure (4), all other figures have curved line which cuts the circle in same manner.
18. Except figure (4), all other figures are same when rotated.
19. Except figure (3), all figures contain two small figures namely circle (O) and cross (X).
20. Except figure (3), all other figures are rotating in anticlockwise direction, while figure (3) is rotating in clockwise direction.
21. Except figure (1), in all others the shaded parts are opposite to each other.
22. Except figure (4), all others are worn on upper part of the body.
23. Except (2), all other figures have single design.
24. Except (1), all others have four diameters.
25. Except figure (1), in all others, the number of lines in circles is odd.
26. Except figure (4) all other figures have single mathematical design.
27. Except figure (2), all others made up of straight lines.
28. Except figure (1), all other figures are same when rotated.

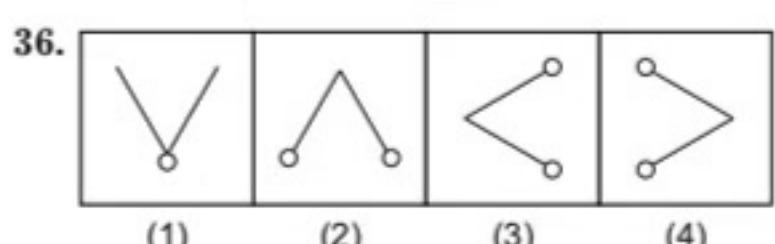
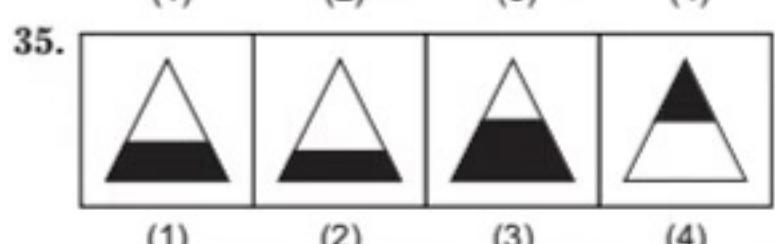
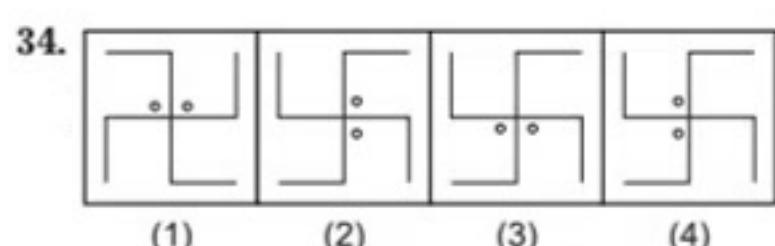
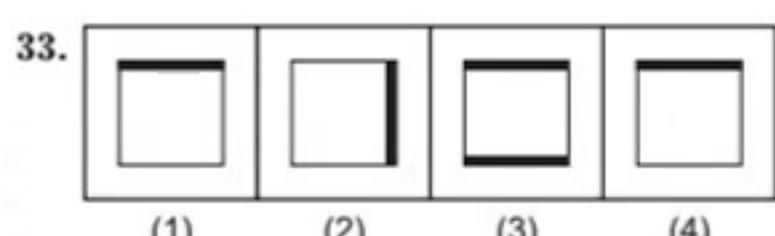
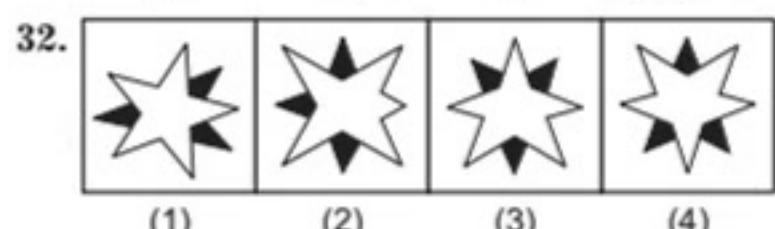
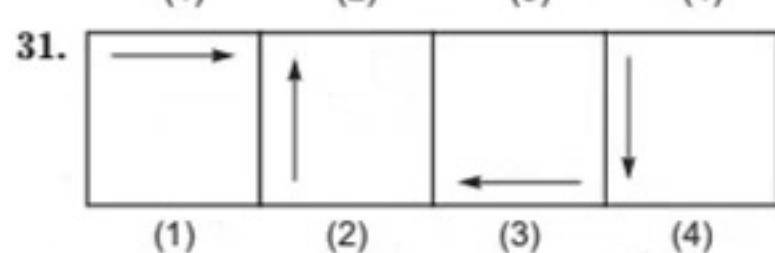
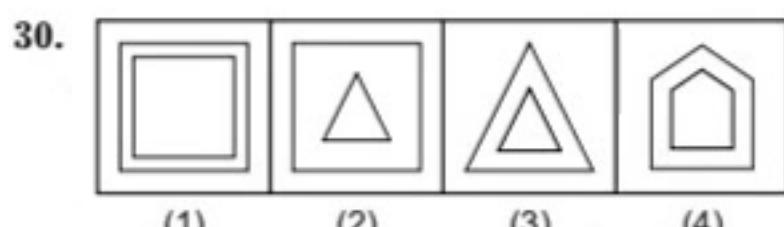
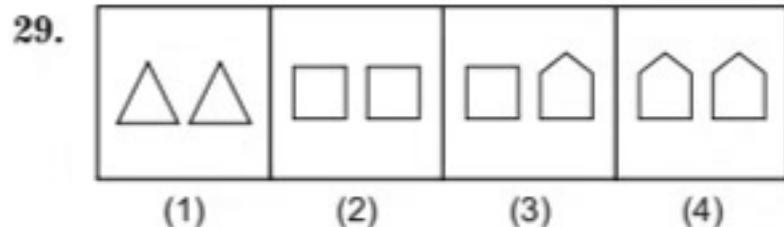
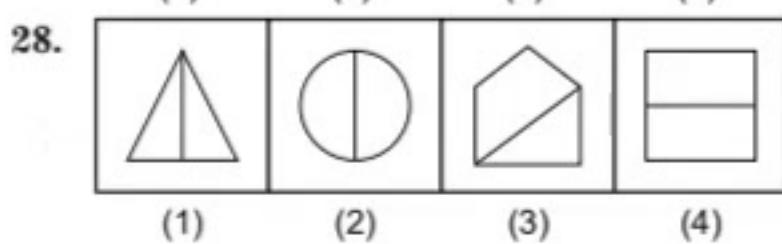
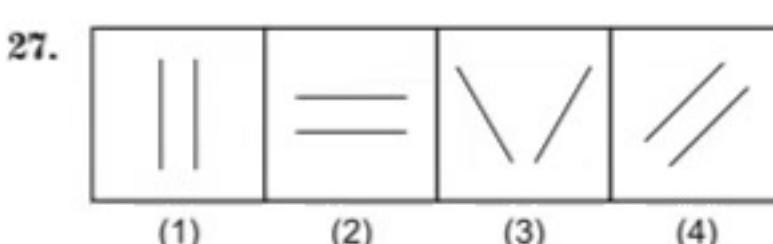
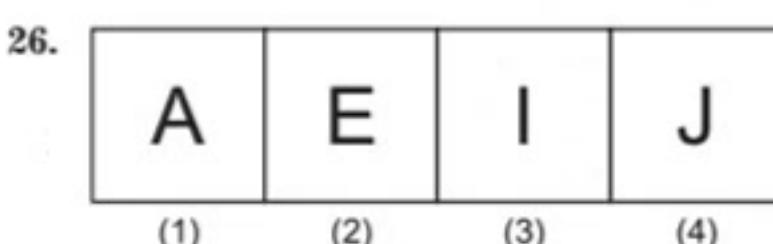
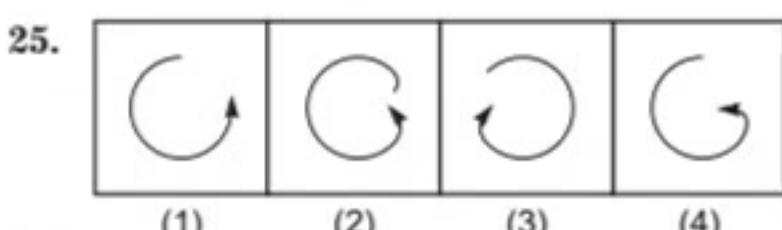
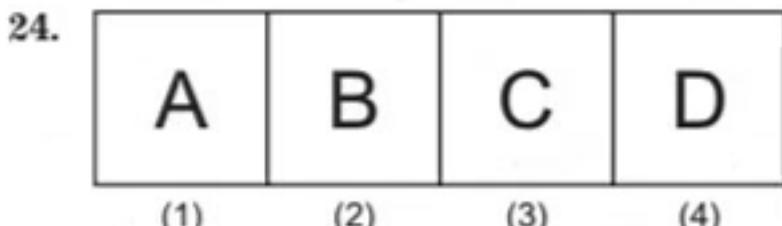
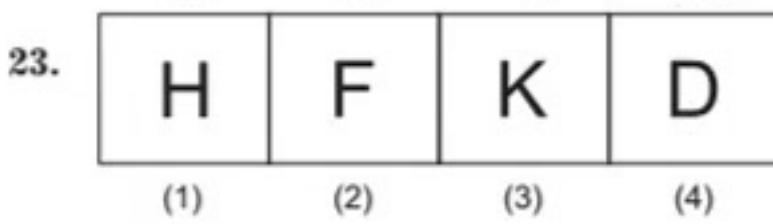
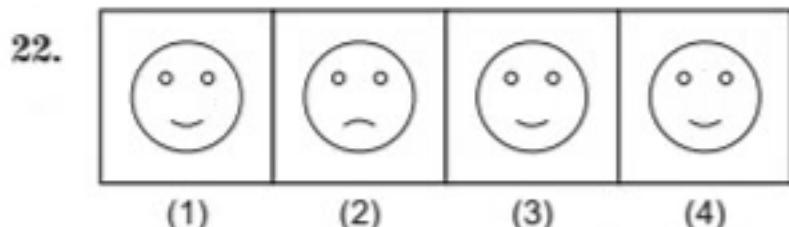
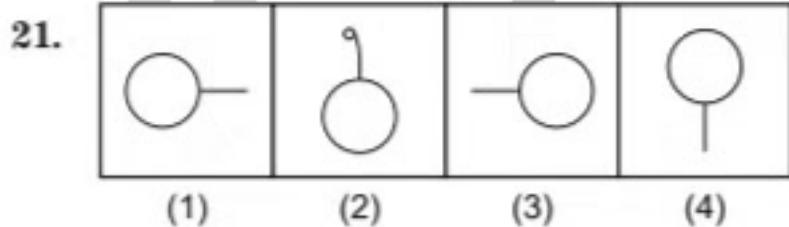
- 29.** Except figure (4), all others are related with bird.  
**30.** Except Honey, all others are different spices.  
**31.** Except figure (1), all other figures are same when rotated.  
**32.** Except figure (2), in all other figures the curved line is near to the smaller circle but in figure (2), it is near to the larger circle.  
**33.** Except figure (2), in all other figures there are five number of lines inside the main figure. But in figure (2), it is four.  
**34.** Except figure (3), in all other figures the circle is ahead of triangle when we move in clockwise direction.  
**35.** Except figure (4), all other figures are same when rotated.  
**36.** Except figure (3), in all other figures there are two lines which divides the main figure in four parts.  
**37.** Except figure (2), all other figures have two similar shapes made up of straight lines. While figure (2) is made up of curved line.  
**38.** Except figure (1), all other figures are made up of straight lines while figure (1) is made up of curved line.  
**39.** Except figure (1), all other figures have same inner and outer designs, but in opposite directions.  
**40.** Except figure (4), all other figures are same when rotated.  
**41.** Except figure (2), all other figures have a circular side.  
**42.** Except figure (4), all other figures have same number of dots inside the figure as there are number of lines in the figure.  
**43.** Except figure (3), all other figures have same inner and outer designs.  
**44.** Except figure (2), in all other figures both the arrows are pointing to the centre of the circle.  
**45.** Except figure (2), in all other figures the size of all the three shapes are different. But in figure (2) all the three circles are of same size.  
**46.** In the given figures, all figures are quadrilaterals but figure (3) is a triangle. Therefore, figure (3) is different from other figures.

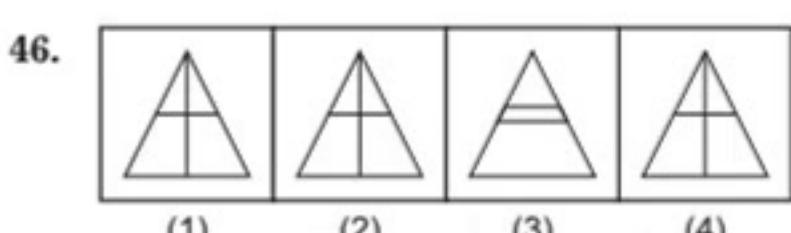
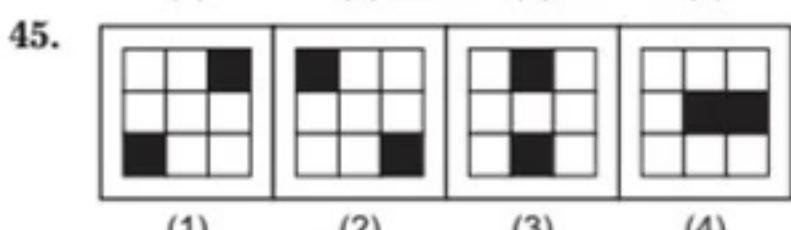
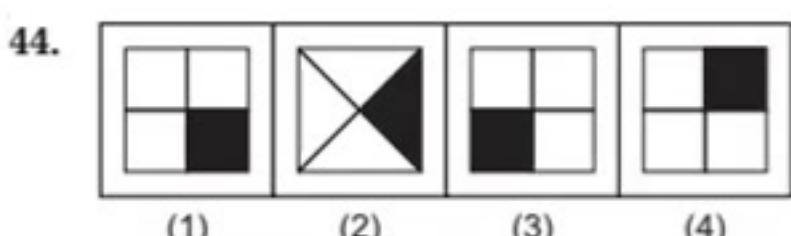
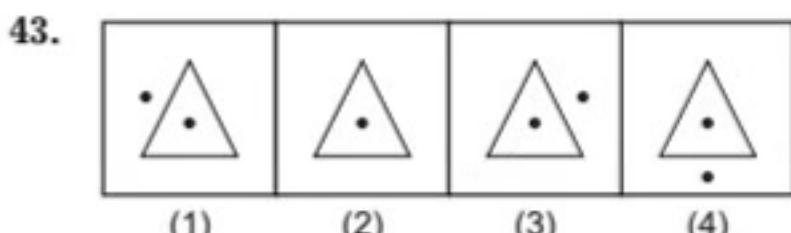
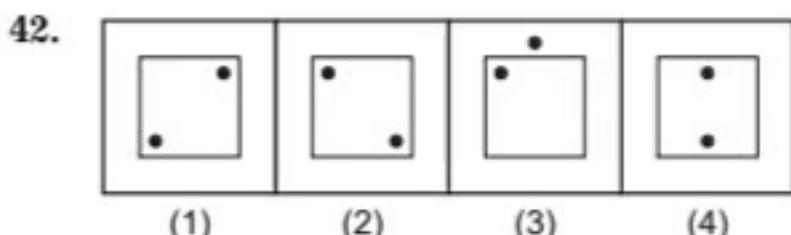
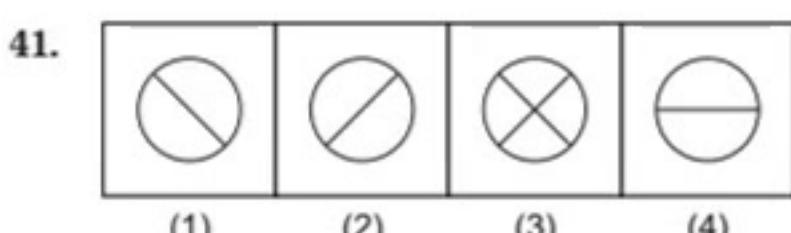
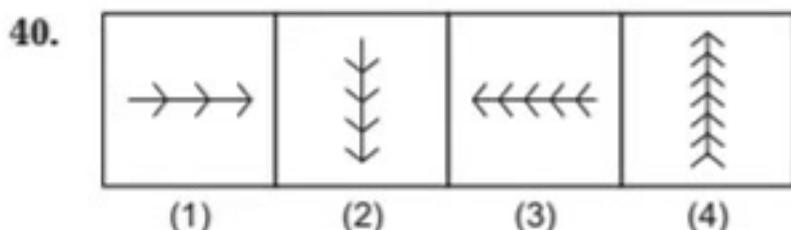
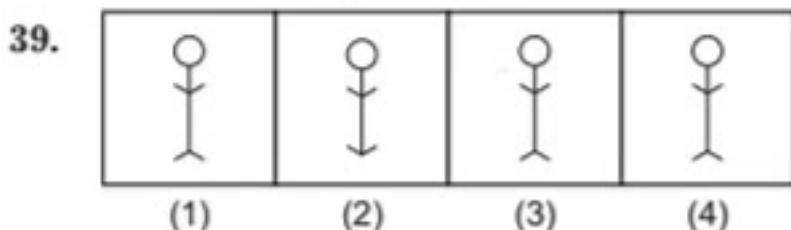
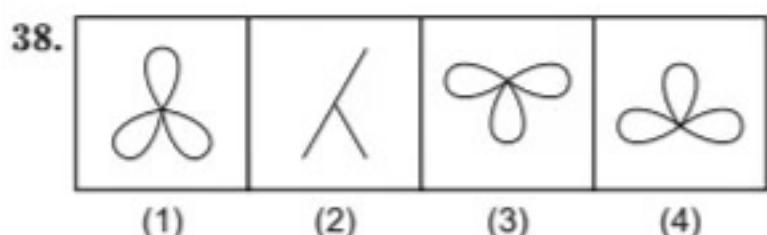
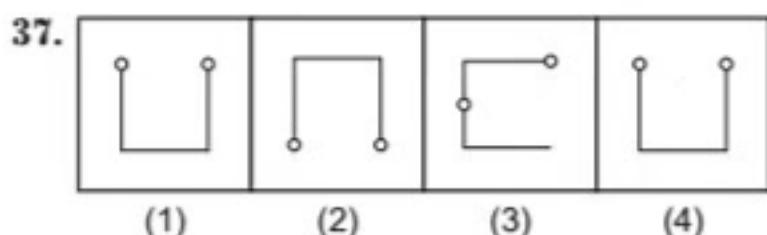
## Practice Exercise

**Directions (Q. Nos. 1-46)** In the following questions, there are four figures. Three of them have common relation or characteristics and belong to one class. Select the figure which different and does not have any relation with the other figures in the group.









## Answers

<b>1</b> (3)	<b>2</b> (1)	<b>3</b> (3)	<b>4</b> (4)	<b>5</b> (3)	<b>6</b> (4)	<b>7</b> (1)	<b>8</b> (2)	<b>9</b> (4)	<b>10</b> (3)
<b>11</b> (3)	<b>12</b> (2)	<b>13</b> (2)	<b>14</b> (4)	<b>15</b> (4)	<b>16</b> (4)	<b>17</b> (3)	<b>18</b> (2)	<b>19</b> (2)	<b>20</b> (3)
<b>21</b> (2)	<b>22</b> (2)	<b>23</b> (4)	<b>24</b> (1)	<b>25</b> (3)	<b>26</b> (4)	<b>27</b> (3)	<b>28</b> (3)	<b>29</b> (3)	<b>30</b> (2)
<b>31</b> (4)	<b>32</b> (2)	<b>33</b> (3)	<b>34</b> (1)	<b>35</b> (4)	<b>36</b> (1)	<b>37</b> (3)	<b>38</b> (2)	<b>39</b> (2)	<b>40</b> (2)
<b>41</b> (3)	<b>42</b> (3)	<b>43</b> (2)	<b>44</b> (2)	<b>45</b> (4)	<b>46</b> (3)				

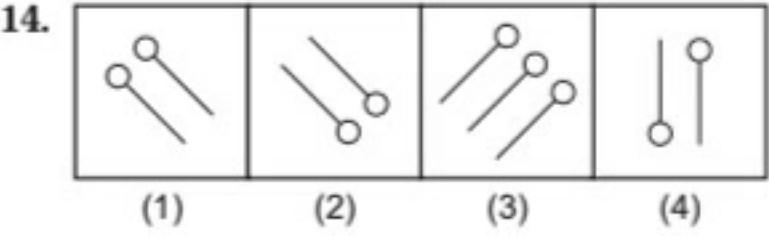
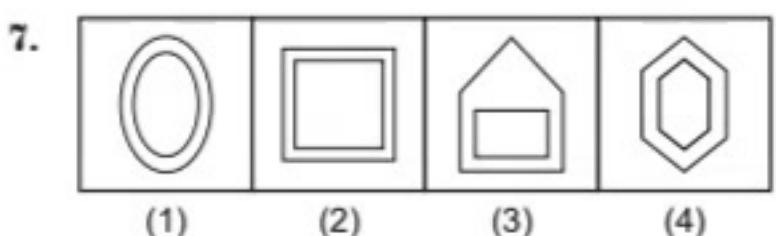
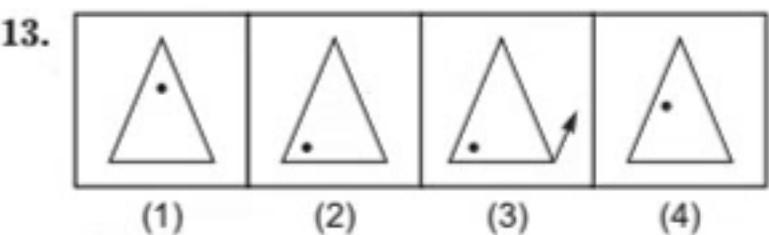
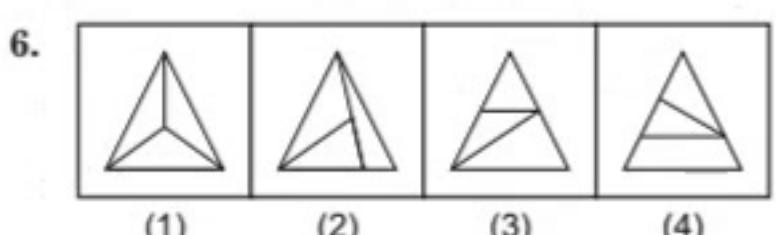
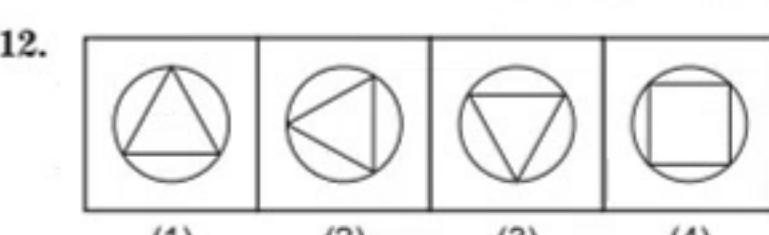
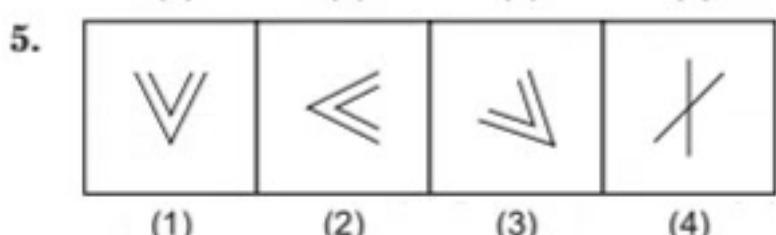
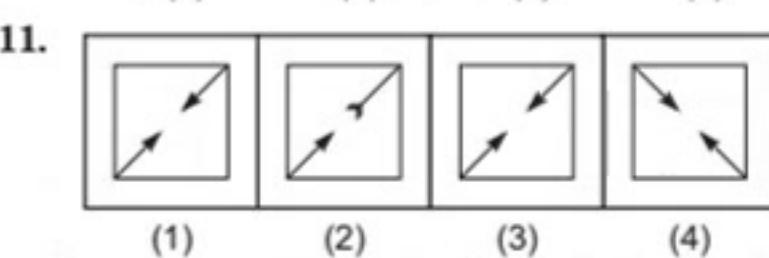
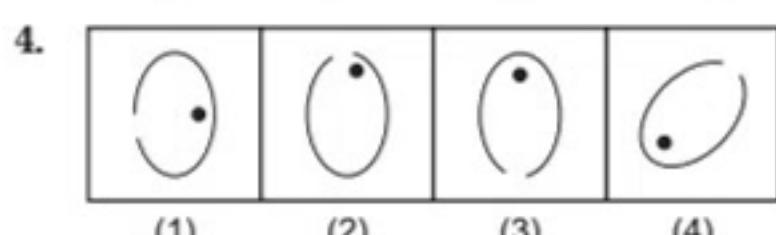
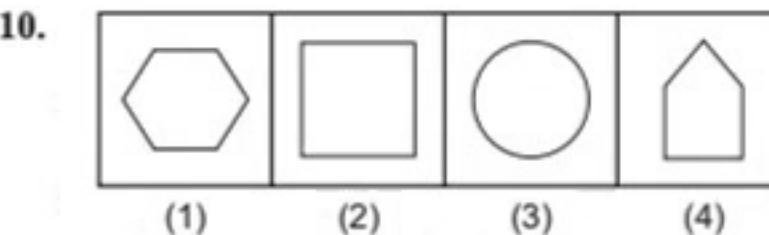
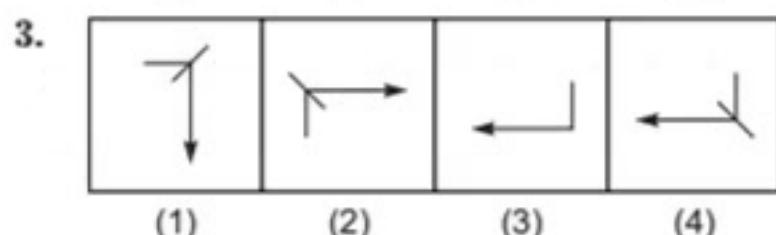
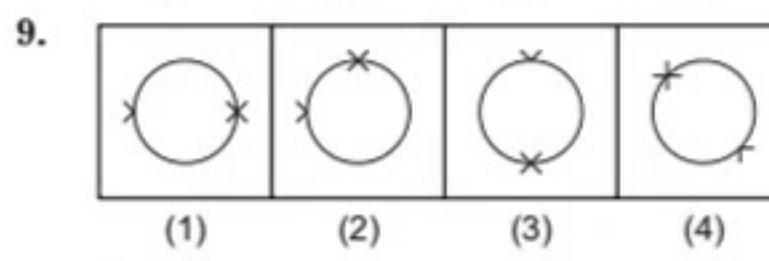
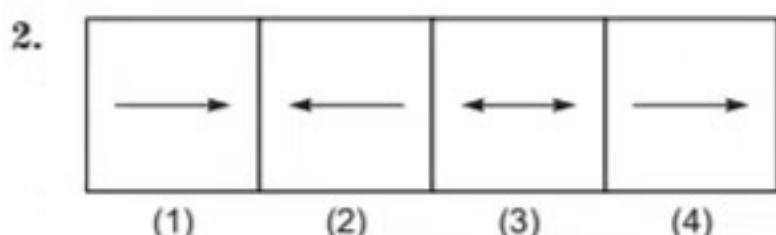
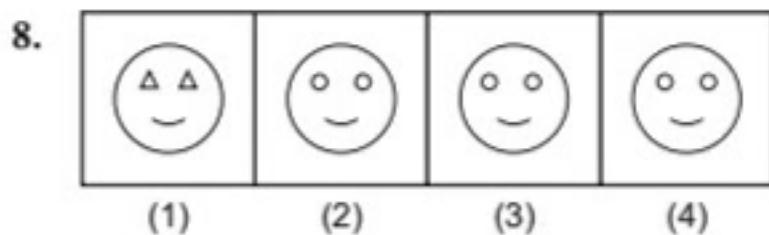
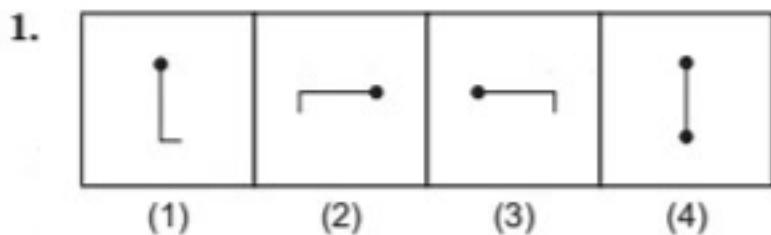
## Hints and Solutions

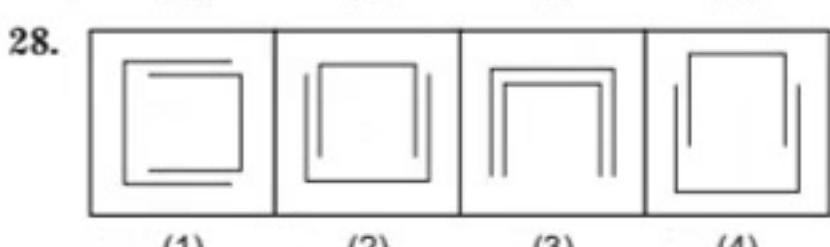
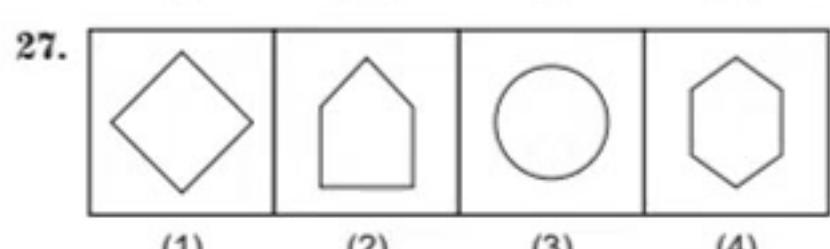
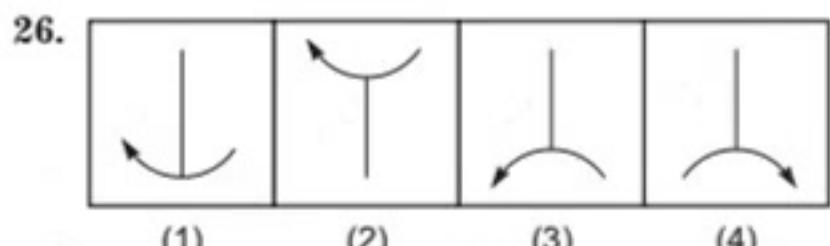
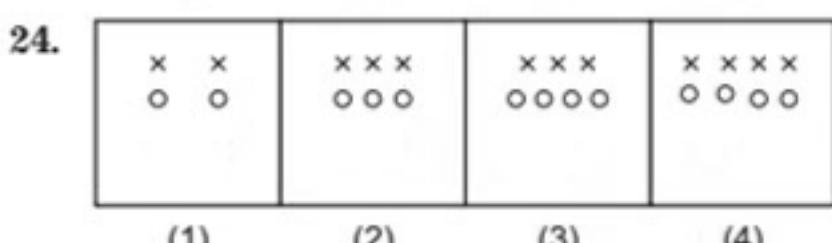
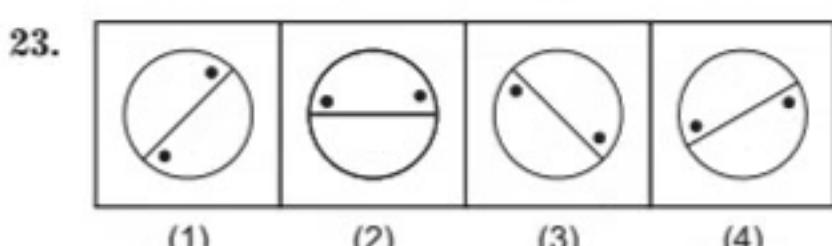
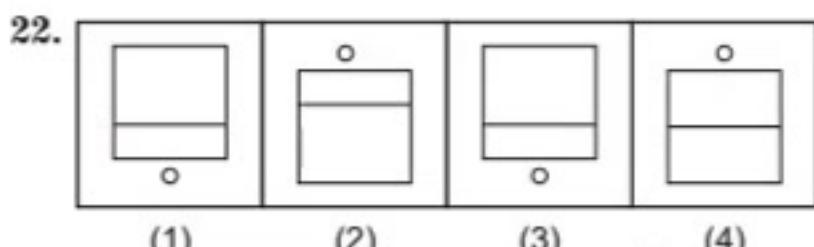
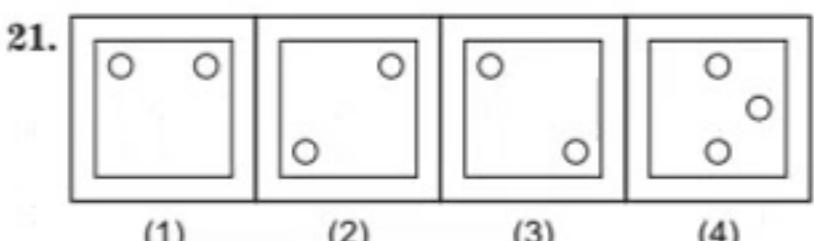
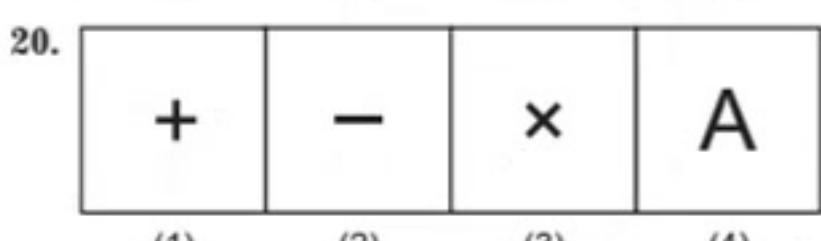
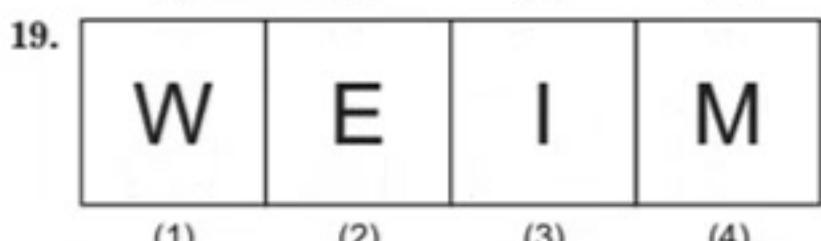
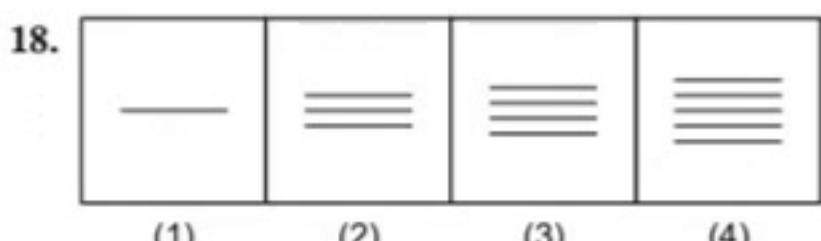
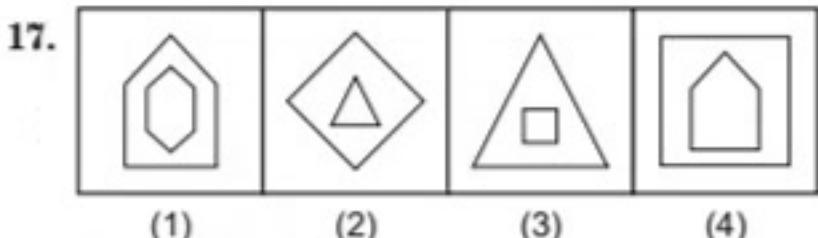
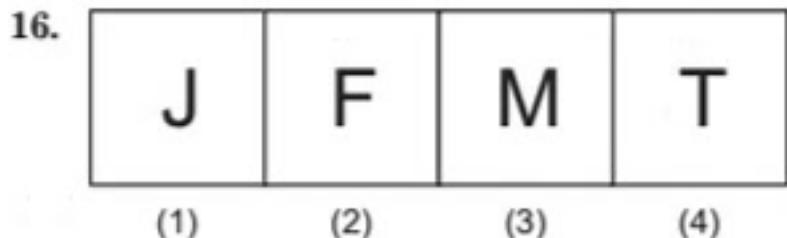
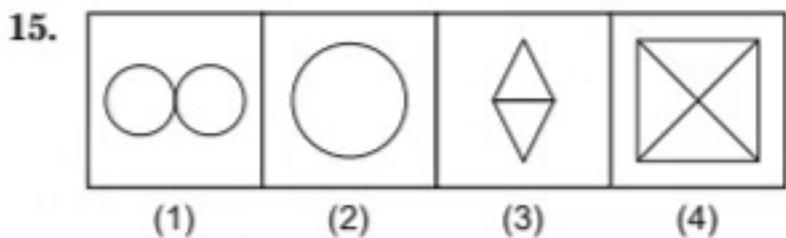
- Except figure (3), all other figures are closed figures.
- Except figure (1), all other figures have only one shaded portion.
- Except figure (3), all other figures contain letters S, U and N, while figure (3) has letter 'O' in place of 'U'.
- Except figure (4), letters in all other figures are made up of three straight lines while letter in figure (4) is made up of four straight lines.
- Except figure (3), in all other figures both the arrows are in opposite direction.
- Except figure (4), all other figures are same when rotated.

7. Except figure (1), in all other figures the number small lines at the top of the figure is same as the number straight lines in the main figure.
8. Only figure (2) has three small black dots.
9. All figures have straight lines but figure (4) has curved lines which is different than the other figures.
10. A small circle has been drawn inside the figures in serial numbers (1), (2) and (4). But in figure (3) a small triangle has been drawn inside the figure (3).
11. Except figure (3), in all other figures the direction of both the shapes are different.
12. Except U, all others are made up straight lines. But 'U' is made up of curved line.
13. Except figure (2), in all other figures the number of lines in inner figure is one less than the number of lines in outer figure.
14. Except figure (4), all other figures contain letters T, R, E and E, while figure (4) has one extra 'T' in place of 'E'.
15. Only in figure (4) two lines divide the main figure in four equal parts.
16. Except figure (4), all other figures are made up of four lines.
17. Figure (3) has one closed loop while others do not have such loop
18. Figure (2) is divided into two parts while others are being divided into four parts.
19. Except figure (2), in all others, the number of circles are even.
20. Direction of arrows in all figures except figure (3), is in clockwise direction.
21. Except figure (2), all other figures are same when rotated.
22. Except figure (2), all other figures have same smiling face.
23. Except figure (4), all other figures are made up of straight lines only.
24. Except figure (1), all other figures have curved lines.
25. Except figures (3), all others are rotating in anti-clockwise direction.
26. Only letter 'J' has one curved line.
27. Except figure (3), all other figures have parallel lines.
28. Except figure (3), all other figures are divided into two equal parts.
29. Except figure (3), in all others, both designs are same.
30. Except figure (3), in all others, both designs are same.
31. Except figure (4), in all others, the arrow is moving in clockwise direction.
32. Except figure (2), all other figures are same when rotated.
33. Except figure (3), In all other, only one side is shaded.
34. Except figure (1), all other figures are same when rotated.
35. Except figure (4), in all other figures the lower part of the triangle is shaded.
36. Except figure (1), in all others, the design has two circles.
37. Except figure (3), in all others, the circles are at the end of the design.
38. Except figure (2), all other figures have designs like petals.
39. Except figure (2), all others are same in structures.
40. Except figure (2), in all others, the number of head of the arrow is odd.
41. Except figure (3), circle in all other figures are divided into two equal parts.
42. Except figure (3), in all other figures both the circle are inside the square.
43. Except figure (2), in all other figures there is two black dots.
44. Except figure (2), all other figures are same when rotated.
45. Except figure (4), in all other figures both the shaded squares are not adjacent to each other.
46. Except figure (3), all other figures are same.

## Self Practice

**Directions (Q. Nos. 1–28)** In the following questions, there are four figures. Three of them have common relation or characteristics and belong to one class. Select the figure which different and does not have any relation with the other figures in the group.





### Answers

1 (4)	2 (3)	3 (3)	4 (2)	5 (4)	6 (1)	7 (3)	8 (1)	9 (2)	10 (3)
11 (2)	12 (4)	13 (3)	14 (4)	15 (2)	16 (1)	17 (2)	18 (3)	19 (3)	20 (4)
21 (4)	22 (4)	23 (2)	24 (3)	25 (1)	26 (1)	27 (3)	28 (3)		

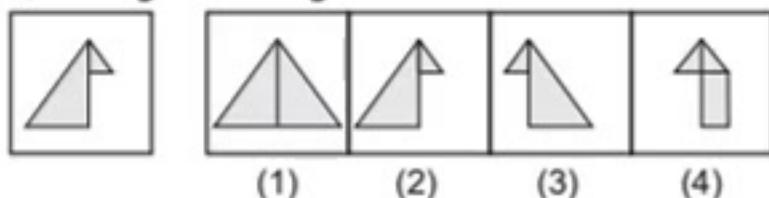
# CHAPTER 02

## FIGURE MATCHING

In this type of questions, a problem figure is given on the left hand side. The candidate is required to find out the one same figure from the four answer figures.

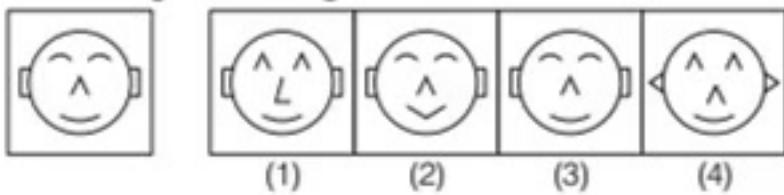
To understand the concept of figure matching, let us look on some of the following examples

**Example 1. Ques. Fig. Ans. Fig.**



Sol. (2) In the given problem figure and answer figures, option (2) is similar figure.

**Example 2. Ques. Fig. Ans. Fig.**

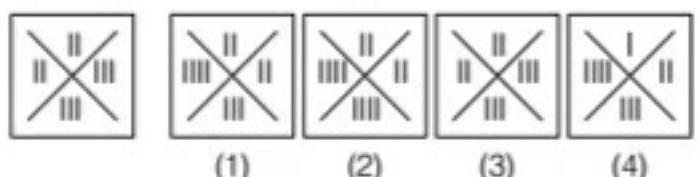


Sol. (3) In the given problem figure and answer figures, option (3) is similar figure.

## Entrance Corner

**Directions (Q. Nos. 1-50)** *In the following questions, a question figure is given on the left hand side and four answer figures marked as (1), (2), (3) and (4) are also given on the right hand side. Select the answer figure which is exactly the same as the question figure.*

**1. Que. Fig. Answer Fig.**



- (1) (2) (3) (4)

[JNV 2019]

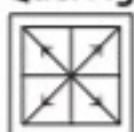
**2. Que. Fig. Answer Fig.**



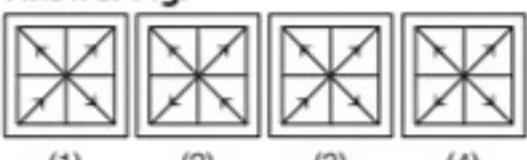
- (1) (2) (3) (4)

[JNV 2019]

3. Que. Fig.

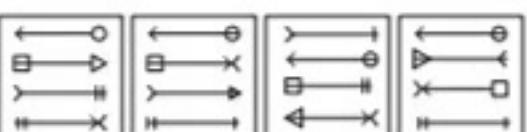
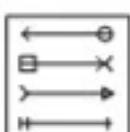


Answer Fig.



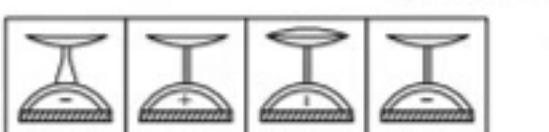
[JNV 2019]

4.



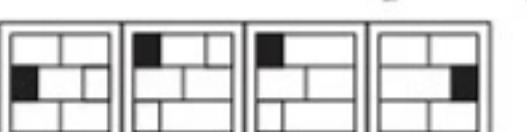
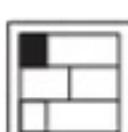
[JNV 2019]

5.



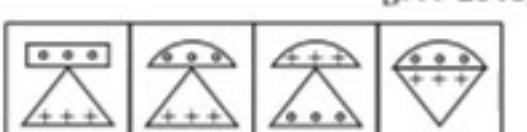
[JNV 2019]

6.



[JNV 2018]

7.



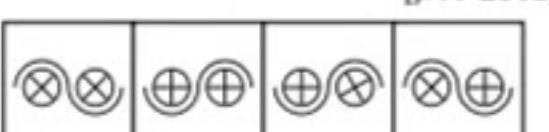
[JNV 2018]

8.



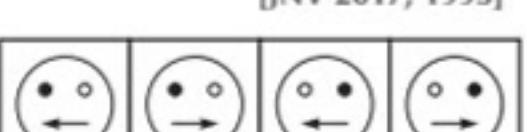
[JNV 2018]

9.



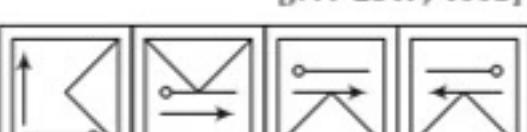
[JNV 2017, 1993]

10.



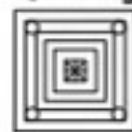
[JNV 2017, 1995]

11.

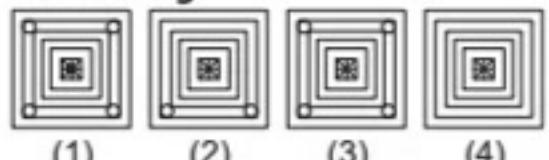


[JNV 2017]

12. Que. Fig.

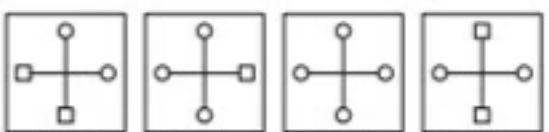
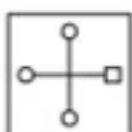


Answer Fig.



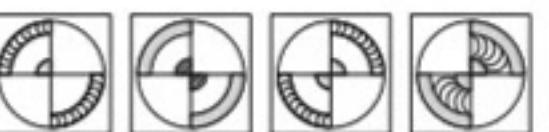
[JNV 2016]

13.



[JNV 2016]

14.



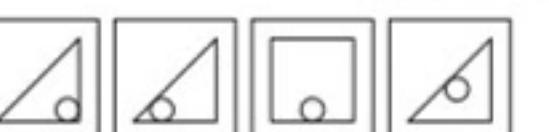
[JNV 2016]

15.



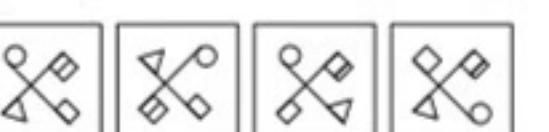
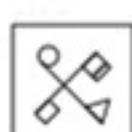
[JNV 2015]

16.



[JNV 2015]

17.



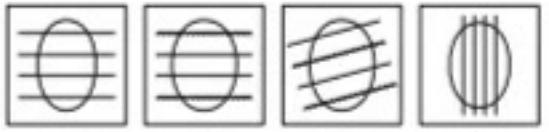
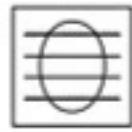
[JNV 2015]

18.



[JNV 2014]

19.



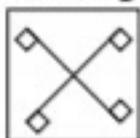
[JNV 2014]

20.

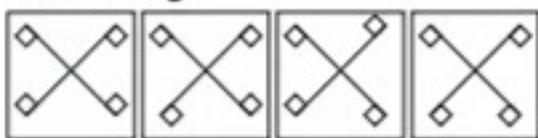


[JNV 2013]

21. Que. Fig.

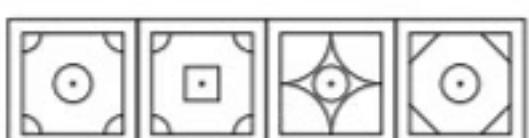
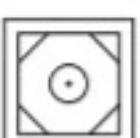


Answer Fig.



[JNV 2013]

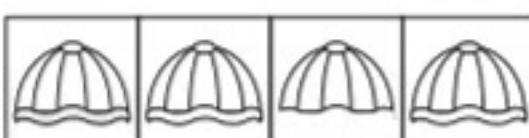
22.



(1) (2) (3) (4)

[JNV 2012]

23.



(1) (2) (3) (4)

[JNV 2012]

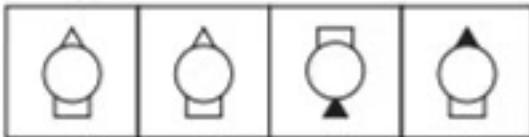
24.



(1) (2) (3) (4)

[JNV 2012]

25.



(1) (2) (3) (4)

[JNV 2011]

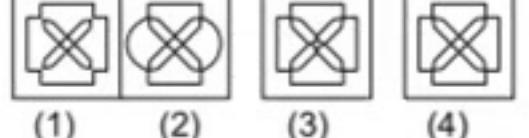
26.



(1) (2) (3) (4)

[JNV 2010]

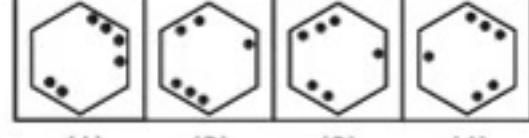
27.



(1) (2) (3) (4)

[JNV 2010]

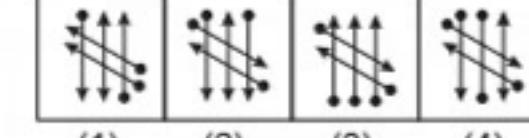
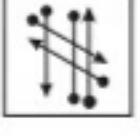
28.



(1) (2) (3) (4)

[JNV 2009]

29.



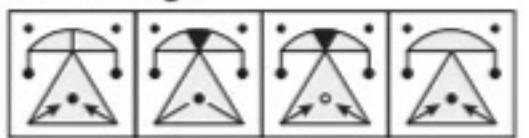
(1) (2) (3) (4)

[JNV 2008]

30. Que. Fig.



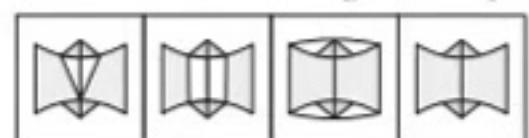
Answer Fig.



(1) (2) (3) (4)

[JNV 2008]

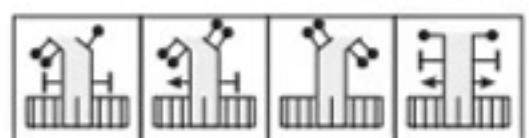
31.



(1) (2) (3) (4)

[JNV 2007]

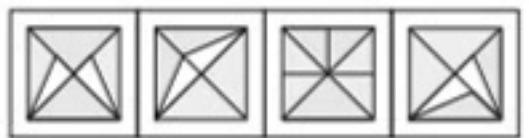
32.



(1) (2) (3) (4)

[JNV 2007]

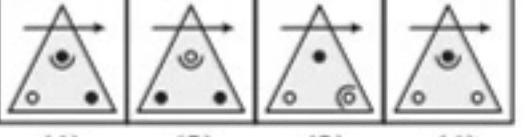
33.



(1) (2) (3) (4)

[JNV 2005]

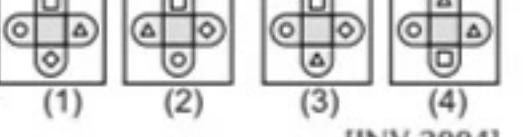
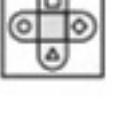
34.



(1) (2) (3) (4)

[JNV 2005]

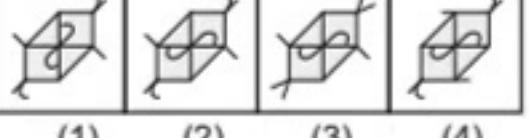
35.



(1) (2) (3) (4)

[JNV 2004]

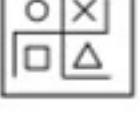
36.



(1) (2) (3) (4)

[JNV 2004]

37.



(1) (2) (3) (4)

[JNV 2003]

38.



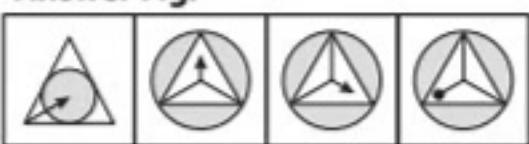
(1) (2) (3) (4)

[JNV 2003]

39. Que. Fig.

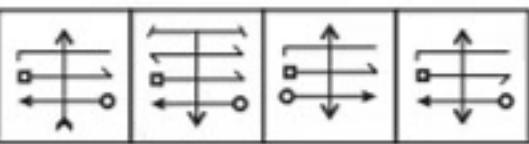
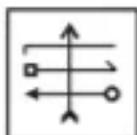


Answer Fig.



[JNV 2002]

40.



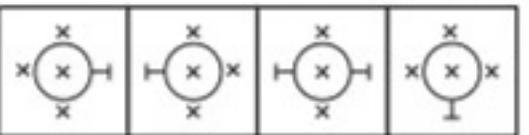
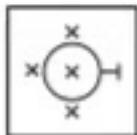
[JNV 2002]

41.



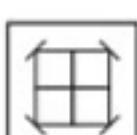
[JNV 2000]

42.



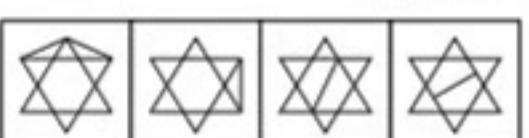
[JNV 2000]

43.



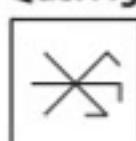
[JNV 1999]

44.

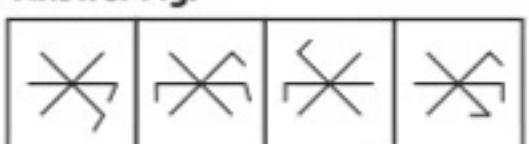


[JNV 1999]

45. Que. Fig.



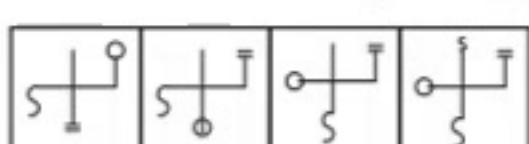
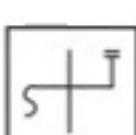
Answer Fig.



(1) (2) (3) (4)

[JNV 1999]

46.



(1) (2) (3) (4)

[JNV 1998]

47.



(1) (2) (3) (4)

[JNV 1998]

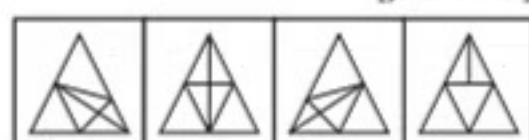
48.



(1) (2) (3) (4)

[JNV 1997]

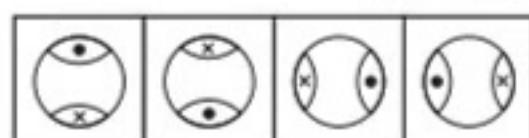
49.



(1) (2) (3) (4)

[JNV 1997]

50.



(1) (2) (3) (4)

[JNV 1996]

**Answers**

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

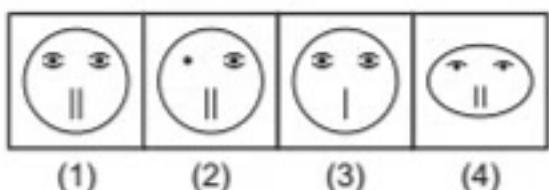
## Practice Exercise

**Directions (Q. Nos. 1-50)** In the following questions, a question figure has been given to the left side. To the right side are given four answer figures, marked as (1), (2), (3) and (4) which is exactly similar to the question figure. Find the correct answer figure.

1. Que. Fig.



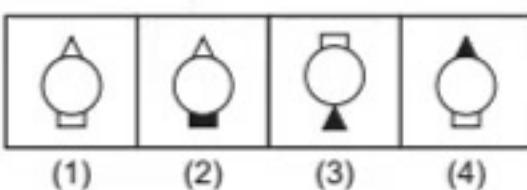
Answer Fig.



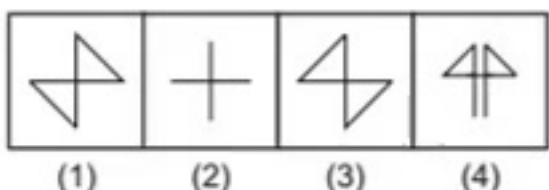
10. Que. Fig.



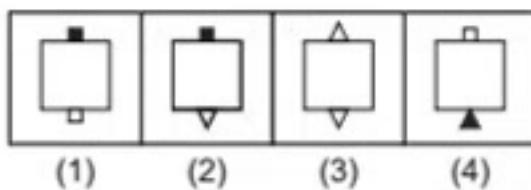
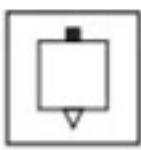
Answer Fig.



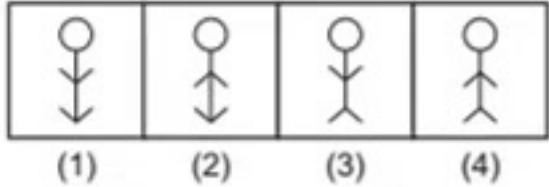
2.



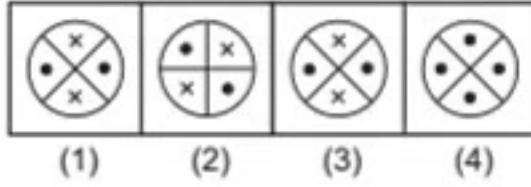
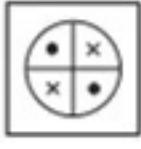
11.



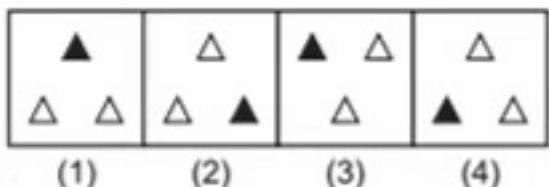
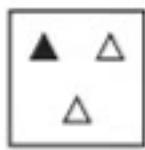
3.



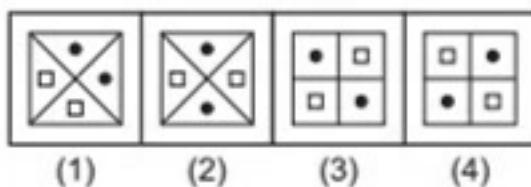
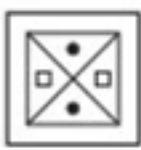
12.



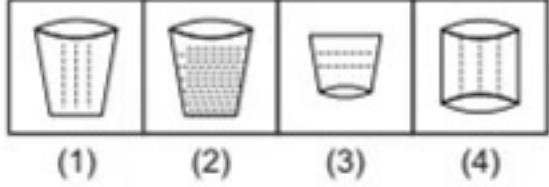
4.



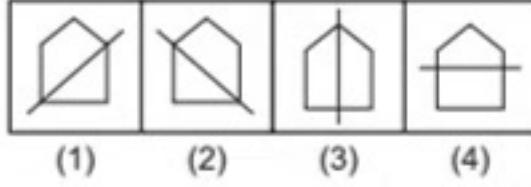
13.



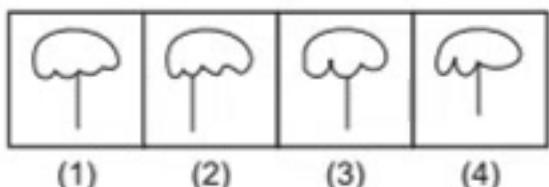
5.



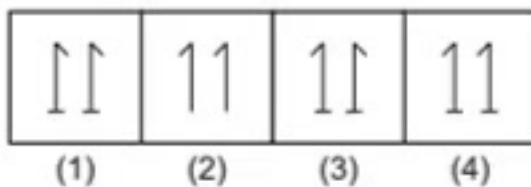
14.



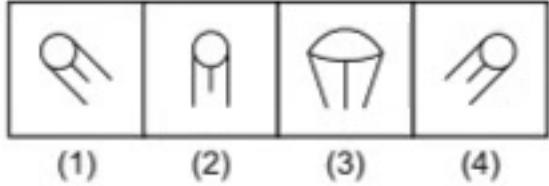
6.



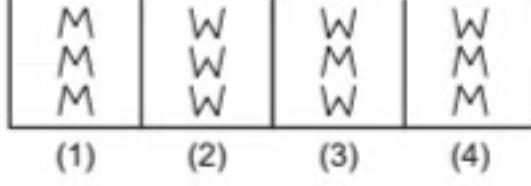
15.



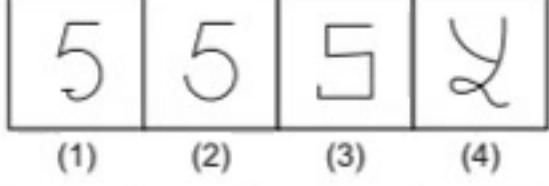
7.



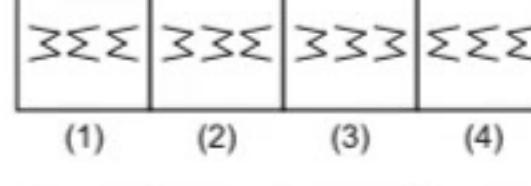
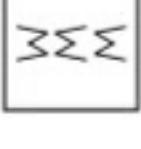
16.



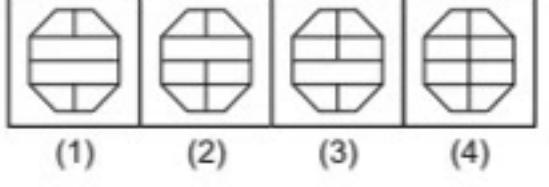
8.



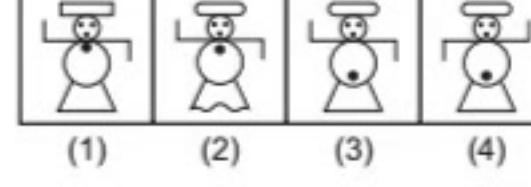
17.



9.



18.



19. Que. Fig.

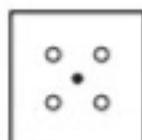


Answer Fig.

W W	X X	W W	W W
X Y	W W	W W	X X

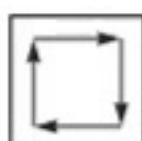
(1) (2) (3) (4)

20.



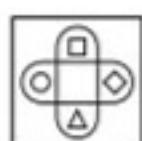
o o • o o o			
(1)	(2)	(3)	(4)

21.



↑ → ← ↓	↑ → ↓ ←	↑ → ← ↓	↑ → ↓ ←
(1)	(2)	(3)	(4)

22.



○ □ ◇ △	△ ○ ◇ □	○ □ ◇ △	○ □ ◇ △
(1)	(2)	(3)	(4)

23.



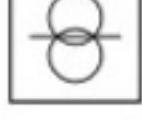
○ △	○ ▲	○ ▷	○ ▷
(1)	(2)	(3)	(4)

24.



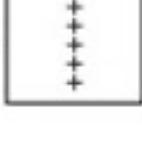
△ —	△ +	△ +	△ +
(1)	(2)	(3)	(4)

25.



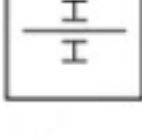
○ ⊕	○ ⊕	○ ⊕	○ ⊕
(1)	(2)	(3)	(4)

26.



++ ++ ++ ++	++ ++ + +	++ + ++ +	++ + + xx
(1)	(2)	(3)	(4)

27.



— —	—*—	— —	—
(1)	(2)	(3)	(4)

28.



(1)	(2)	(3)	(4)

29. Que. Fig.



Answer Fig.

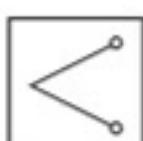
(1)	(2)	(3)	(4)

30.



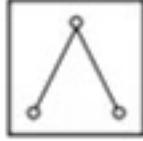
V o	o V	V o	— V —
(1)	(2)	(3)	(4)

31.



V o	o V	o V	o V
(1)	(2)	(3)	(4)

32.



o V	o V	o V	o V
(1)	(2)	(3)	(4)

33.



△ o	△ o	○ △	○ △
(1)	(2)	(3)	(4)

34.



→ ↘	→ ↘	→ ↗	→ ↗
(1)	(2)	(3)	(4)

35.



□ ○	□ ○	○ □	○ □
(1)	(2)	(3)	(4)

36.



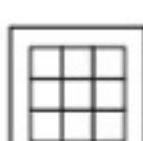
○ □	○ □	○ □	○ □
(1)	(2)	(3)	(4)

37.



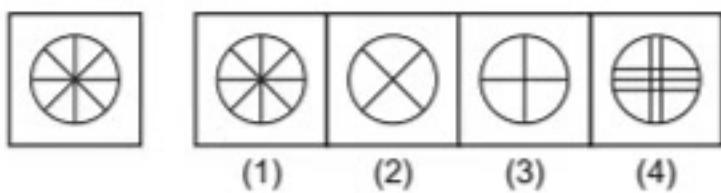
△ □	△ □	□ △	□ △
(1)	(2)	(3)	(4)

38.



□ □	□ □	□ □	□ □
(1)	(2)	(3)	(4)

39. Que. Fig.      Answer Fig.



40.

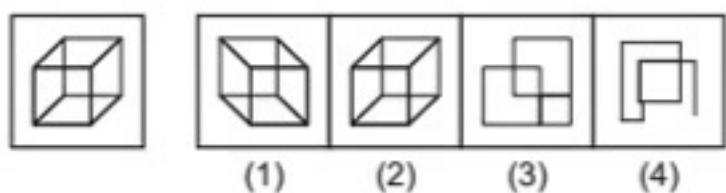
41.

42.

43.

44.

45. Que. Fig.      Answer Fig.



46.

47.

48.

49.

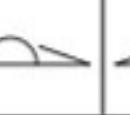
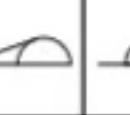
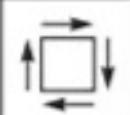
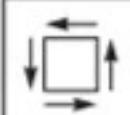
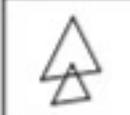
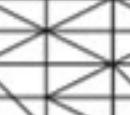
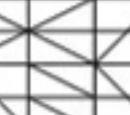
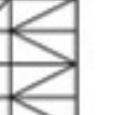
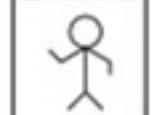
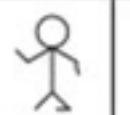
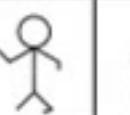
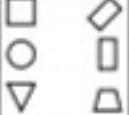
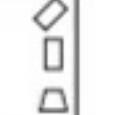
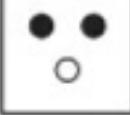
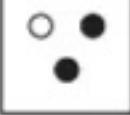
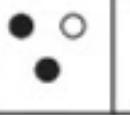
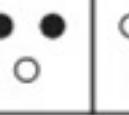
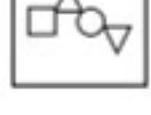
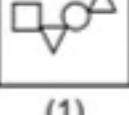
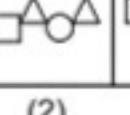
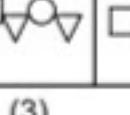
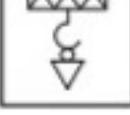
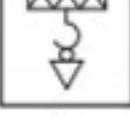
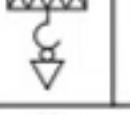
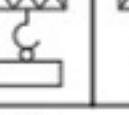
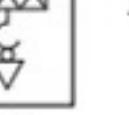
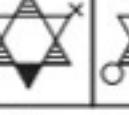
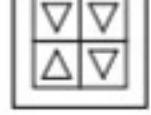
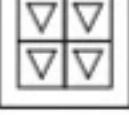
50.

**Answers**

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

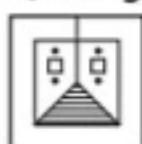
# Self Practice

**Directions (Q. Nos. 1-38)** In the following questions, a question figure has been given to the left side. To the right side are given four answer figures marked as (1), (2), (3) and (4). Select the answer figure which is exactly similar to the question figure.

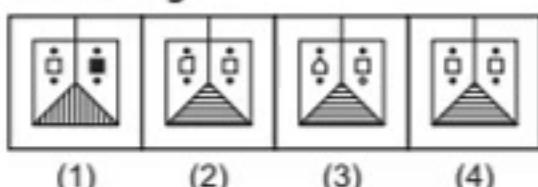
Que. Fig.	Answer Fig.	Que. Fig.	Answer Fig.
1.	    	10.	    
2.	    	11.	    
3.	    	12.	    
4.	    	13.	    
5.	    	14.	    
6.	    	15.	    
7.	    	16.	    
8.	    	17.	    
9.	    	18.	    

Que. Fig.

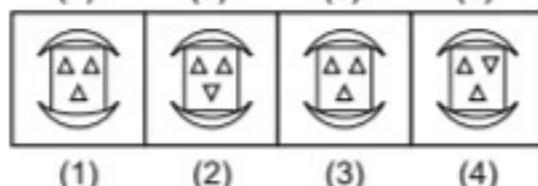
19.



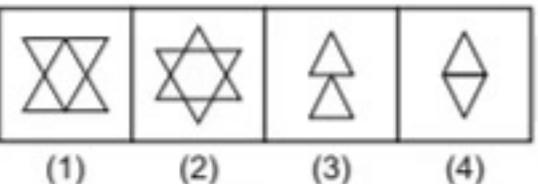
Answer Fig.



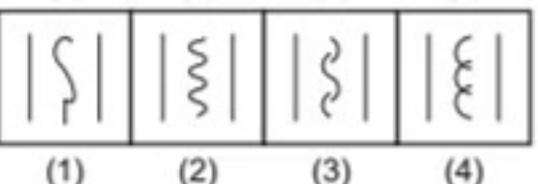
20.



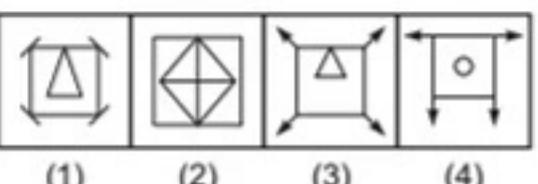
21.



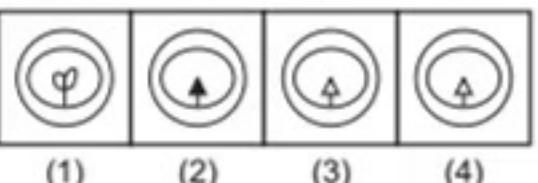
22.



23.



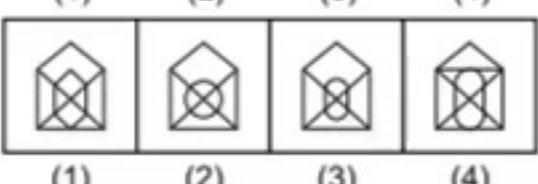
24.



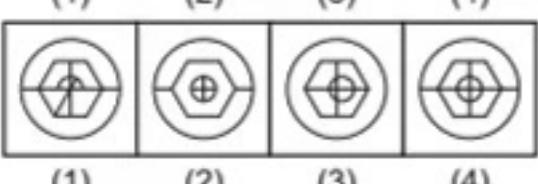
25.



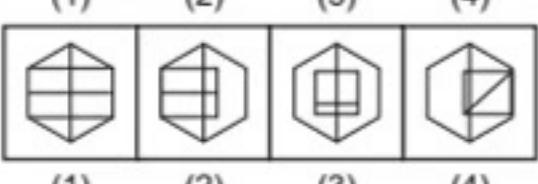
26.



27.



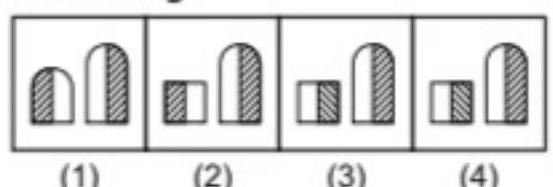
28.



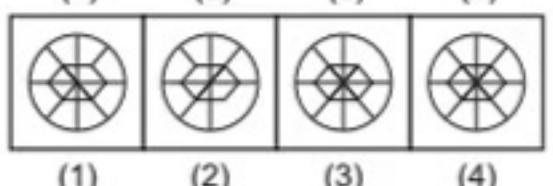
Que. Fig.



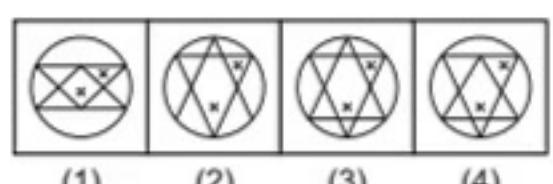
Answer Fig.



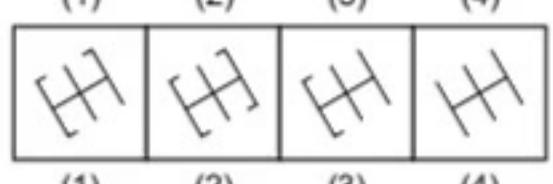
30.



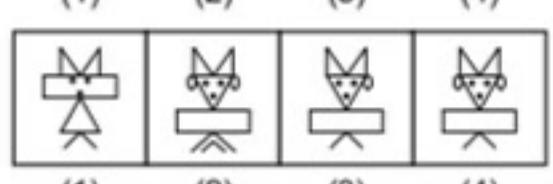
31.



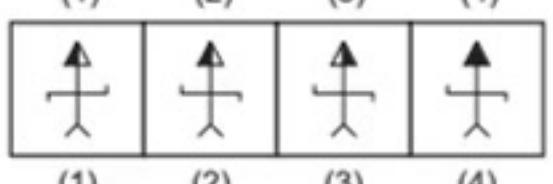
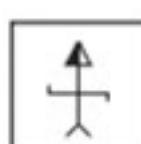
32.



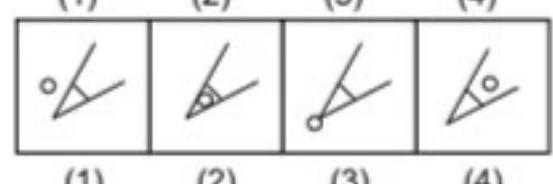
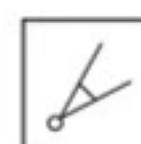
33.



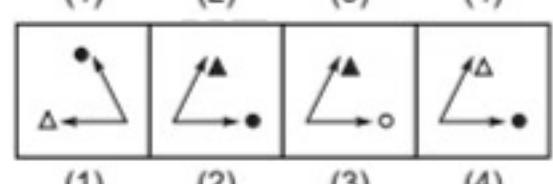
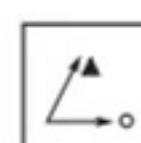
34.



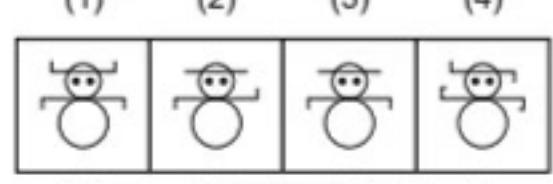
35.



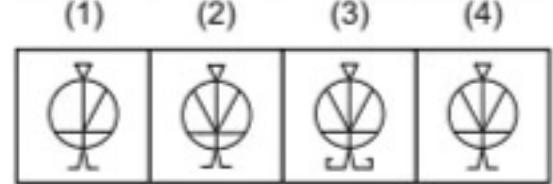
36.



37.



38.

**Answers**

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

# CHAPTER 03

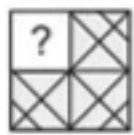
## PATTERN COMPLETION

Pattern completion is a process to find out the missing part of an incomplete figure it. In this chapter we deal with questions in which a part, generally 1/4th part of the figure is missing. The student is required to find out the answer figure that completes the given pattern.

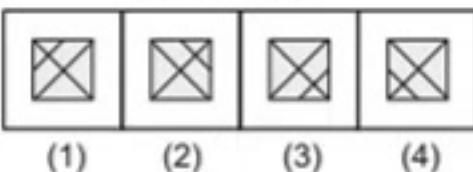
While solving the problems the student should follow some points

**Example 1.**

**Ques. Fig.**



**Ans. Fig.**



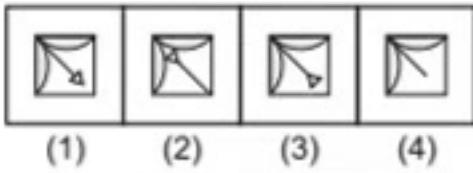
Sol. (1) In the question figure, lower left figure is opposite to upper right figure. So, answer figure (1) is opposite to lower right part figure.

**Example 2.**

**Ques. Fig.**



**Ans. Fig.**



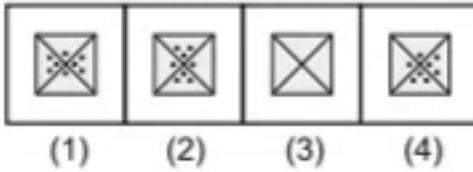
Sol. (3) In the question figure, upper right figure is opposite to lower left figure. So, answer figure (3) is opposite to upper left part figure.

**Example 3.**

**Ques. Fig.**



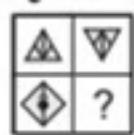
**Ans. Fig.**



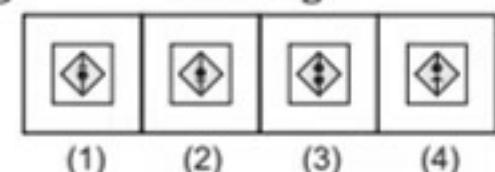
Sol. (2) In the question figure, lower left figure rotates 90° anti-clockwise direction and 8 small dots and one slanting line are included. In the same way lower right figure rotates 90° anti-clockwise direction and 8 small dots and one line is removed. So, answer figure (2) will come in place of the question mark.

**Example 4.**

**Ques. Fig.**



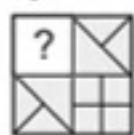
**Ans. Fig.**



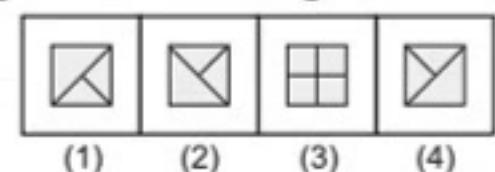
Sol. (2) According to formula 2, upper left figure rotates 180° clockwise or anti-clockwise to obtain upper right figure in the same way, lower left part figure rotates 180° clockwise or anti-clockwise to obtain lower right figure. So, answer figure 2 will come in place of the question mark.

**Example 5.**

**Ques. Fig.**



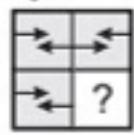
**Ans. Fig.**



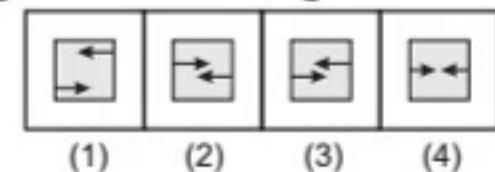
Sol. (3) Answer figure (3) will complete the problem figure.

**Example 6.**

**Ques. Fig.**



**Ans. Fig.**

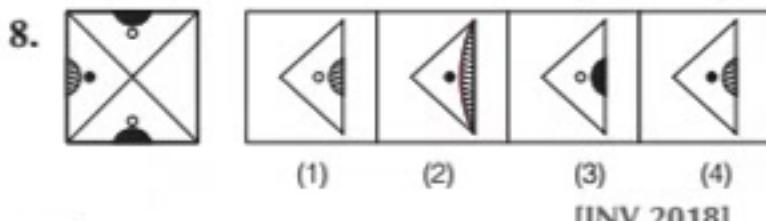
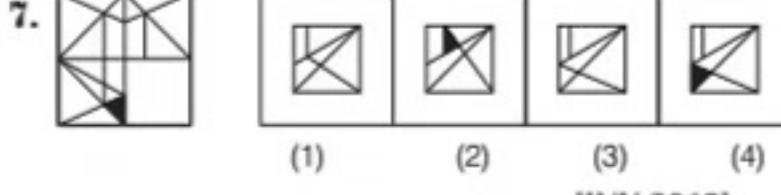
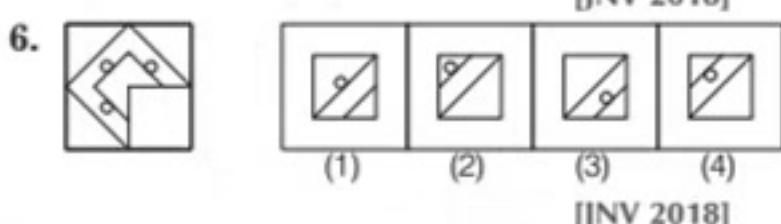
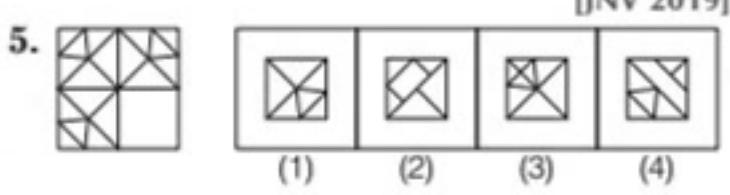
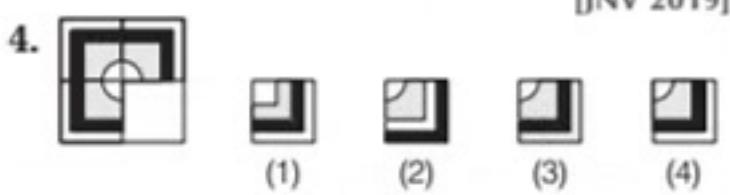
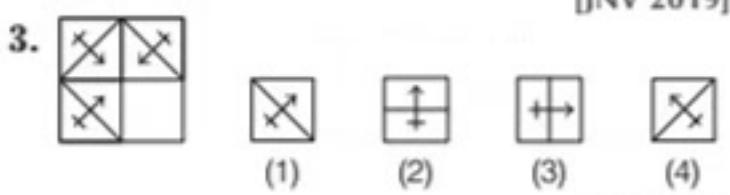
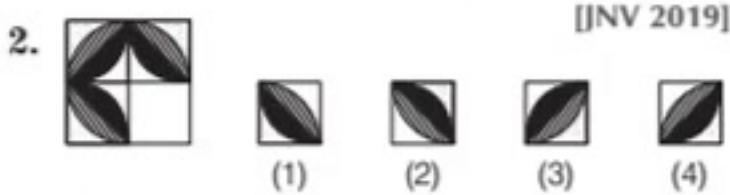


Sol. (3) The arrows in the column two is the mirror image of the arrows in the column one. So, answer figure (3) will complete the pattern.

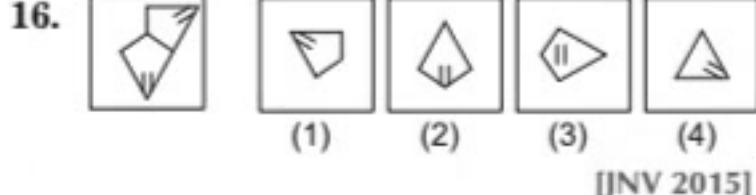
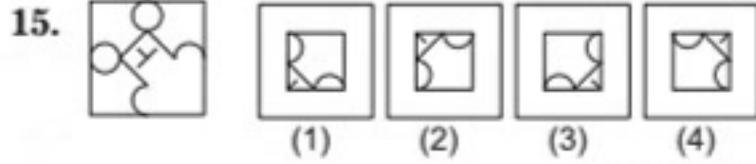
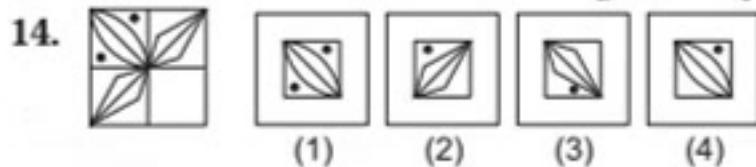
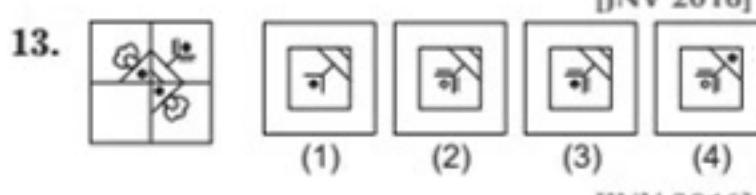
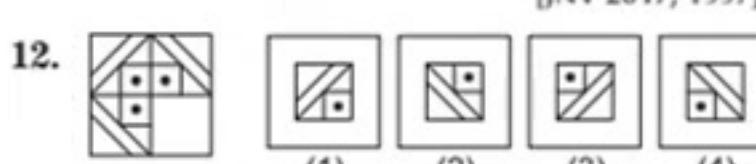
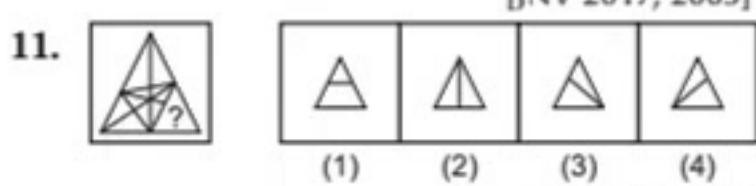
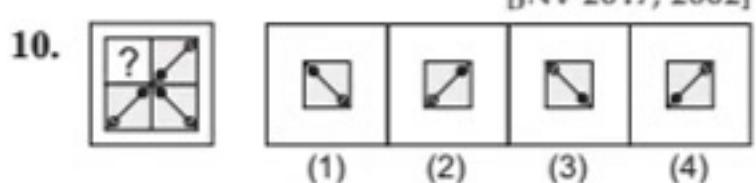
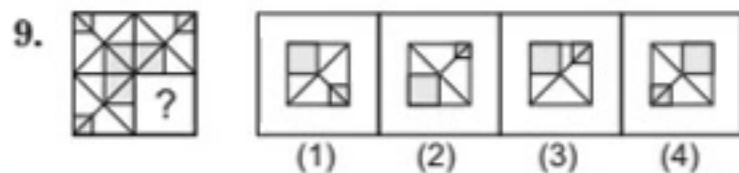
# Entrance Corner

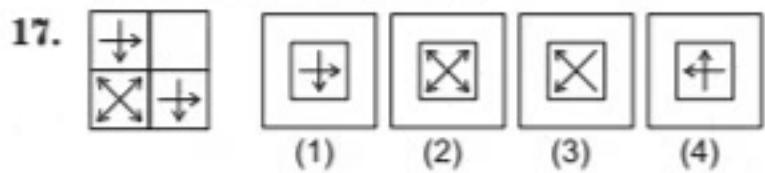
**Directions (Q. Nos. 1-50)** In the following questions a question figure is given to the left. A part of the figure is missing. Answer figures (1), (2), (3) and (4) are given to the right. Identify the figure out of the answer figures which may fit into the missing part. Do as to complete the pattern.

**Ques. Fig. Ans. Fig.**

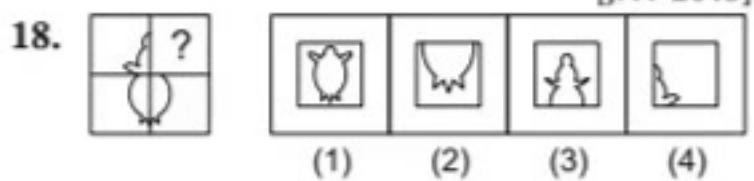


**Ques. Fig. Ans. Fig.**

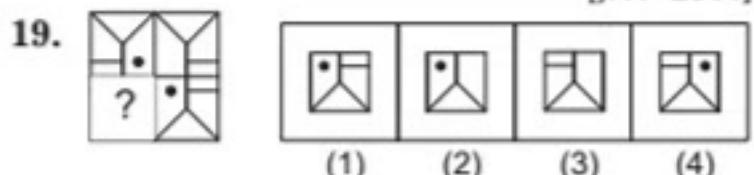


**Ques. Fig. Ans. Fig.**

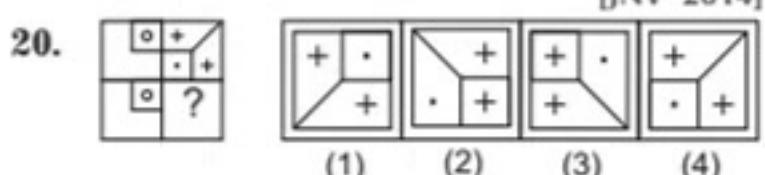
[JNV 2015]



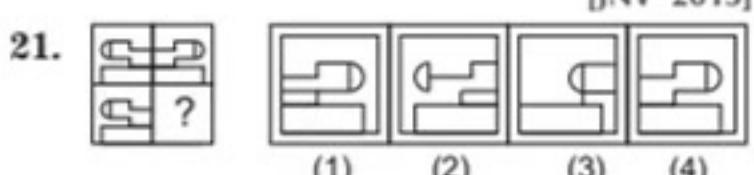
[JNV 2014]



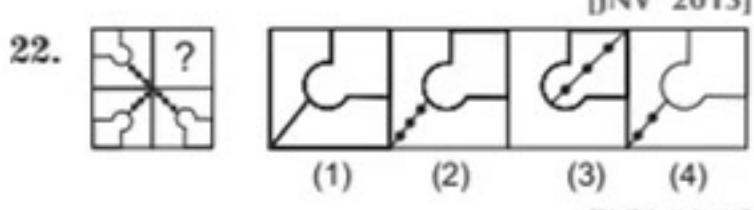
[JNV 2014]



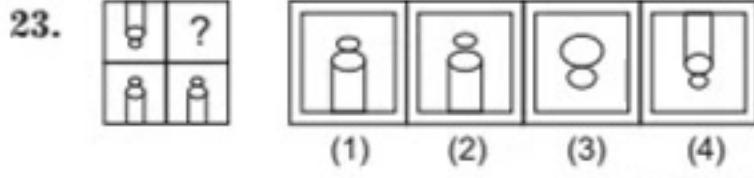
[JNV 2013]



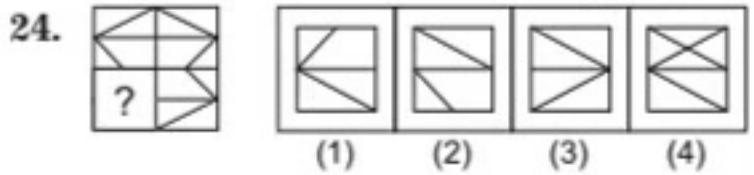
[JNV 2013]



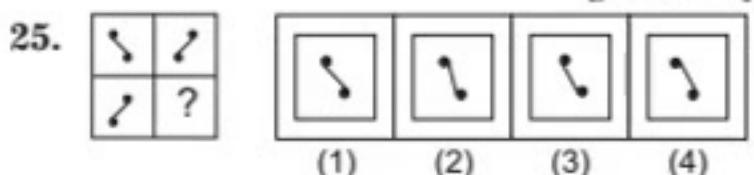
[JNV 2012]



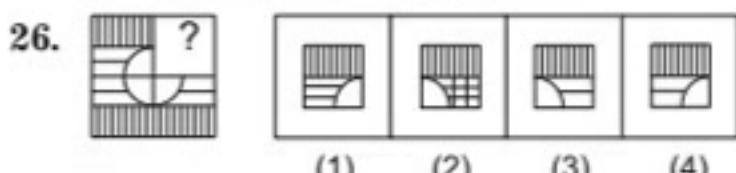
[JNV 2012]



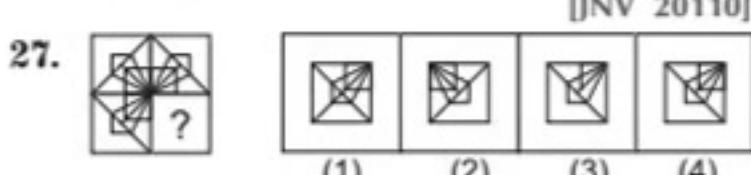
[JNV 2011]



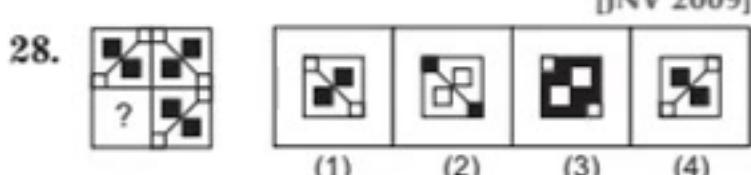
[JNV 2011]

**Ques. Fig. Ans. Fig.**

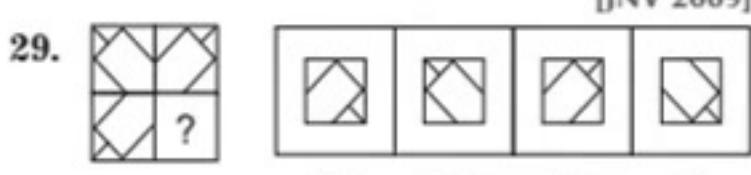
[JNV 2010]



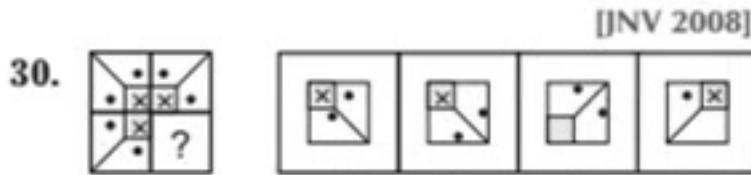
[JNV 2009]



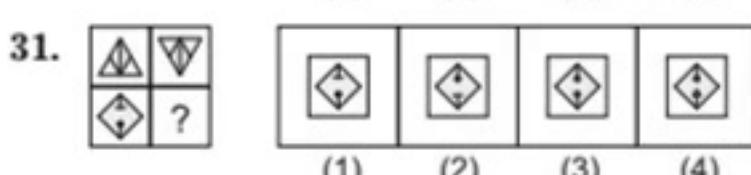
[JNV 2009]



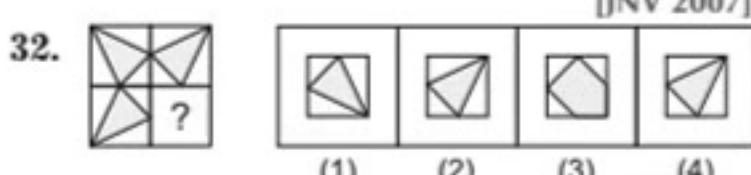
[JNV 2008]



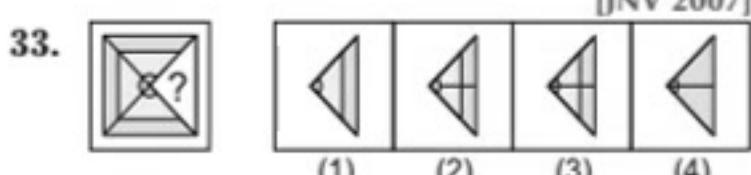
[JNV 2007]



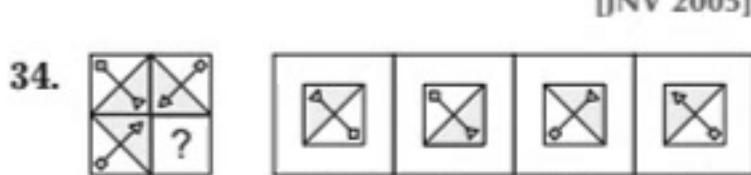
[JNV 2007]



[JNV 2007]

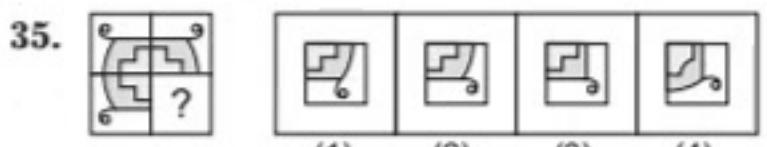


[JNV 2005]

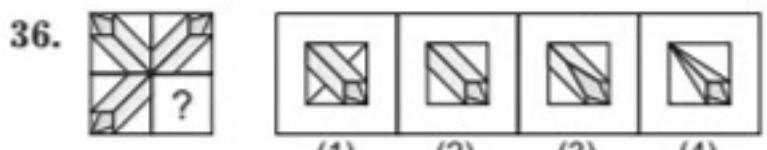


[JNV 2004]

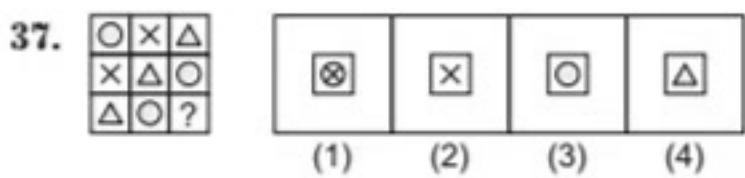
Ques. Fig. Ans. Fig.



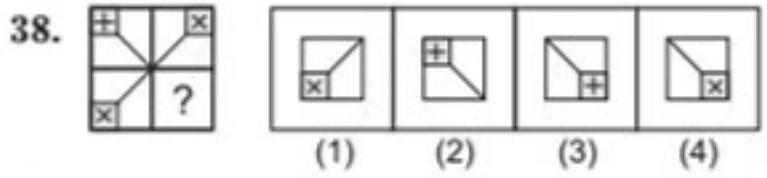
[JNV 2004]



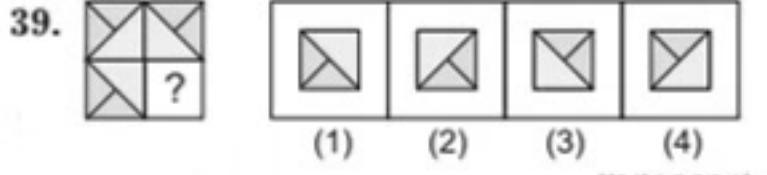
[JNV 2003]



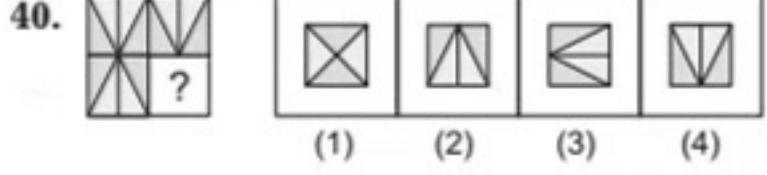
[JNV 2003]



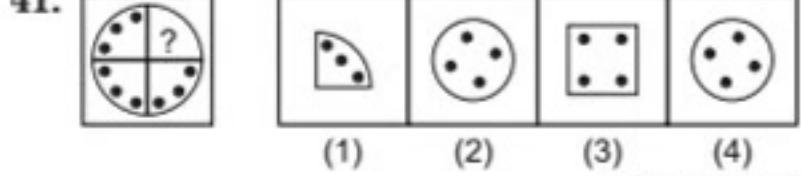
[JNV 2002]



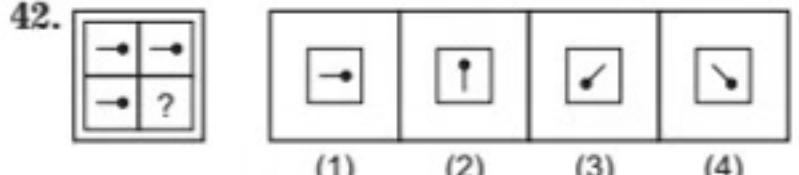
[JNV 2001]



[JNV 2001]

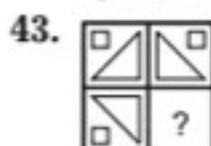


[JNV 2000]

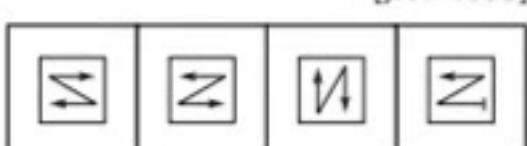
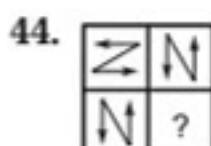


[JNV 2000]

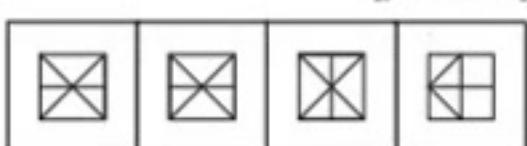
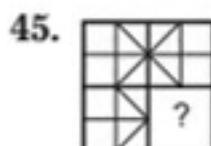
Ques. Fig. Ans. Fig.



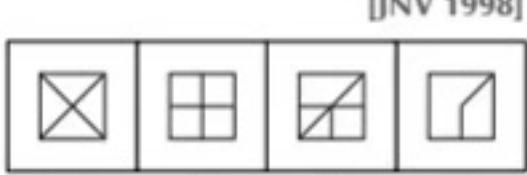
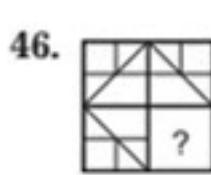
[JNV 1999]



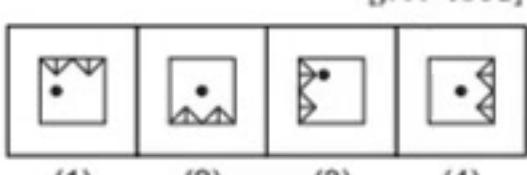
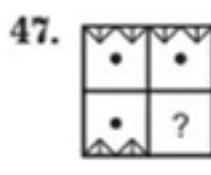
[JNV 1999]



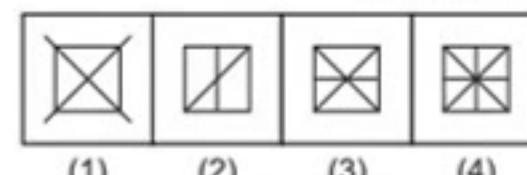
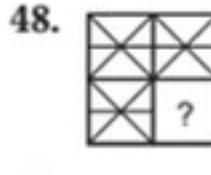
[JNV 1998]



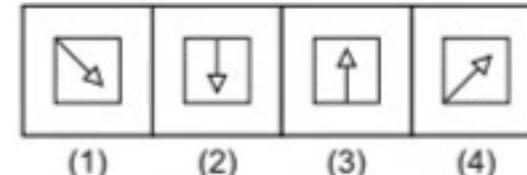
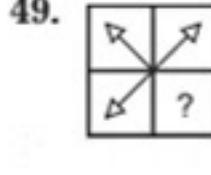
[JNV 1998]



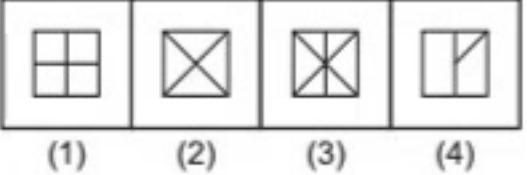
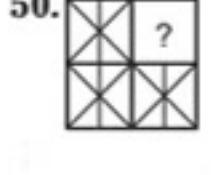
[JNV 1997]



[JNV 1997]



[JNV 1997]



[JNV 1997]

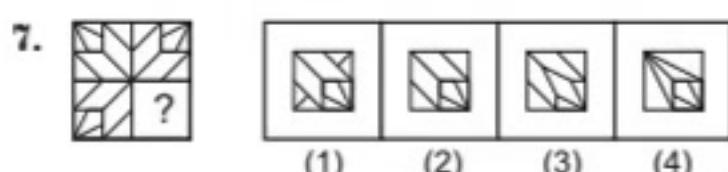
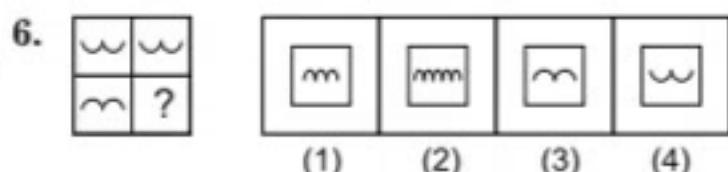
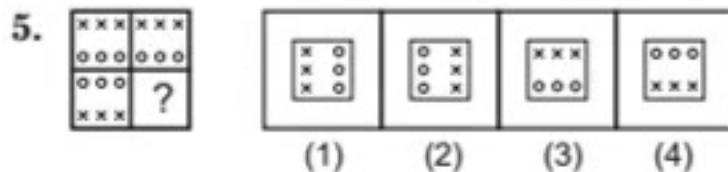
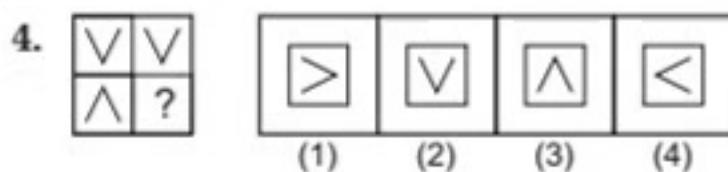
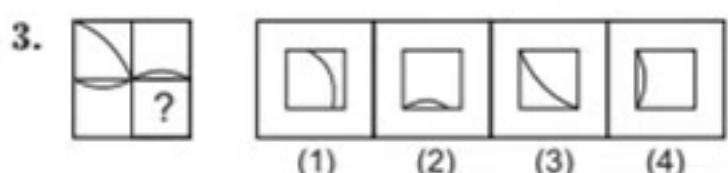
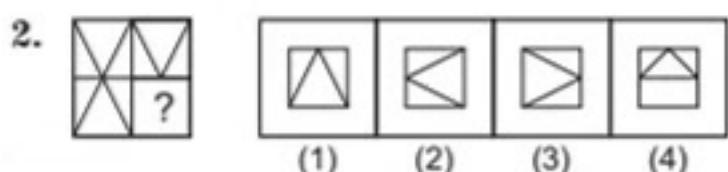
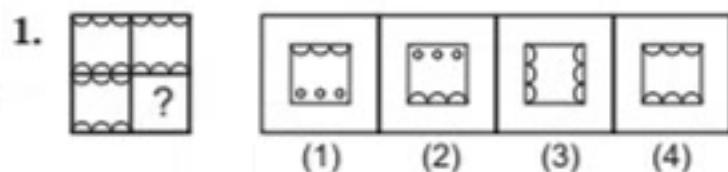
## Answers

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

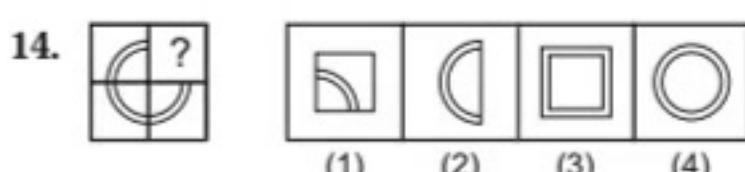
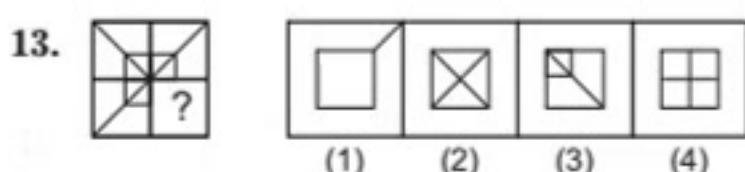
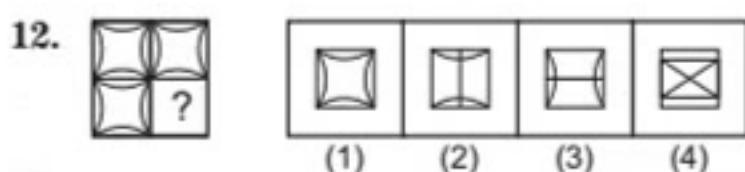
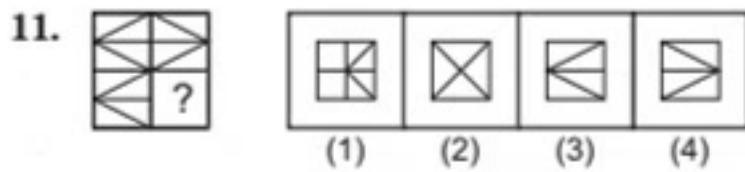
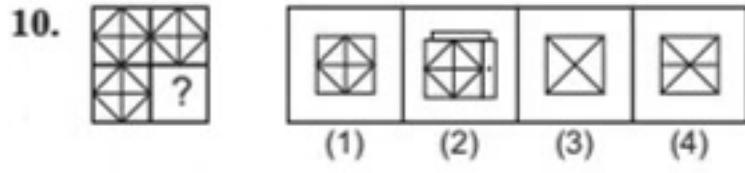
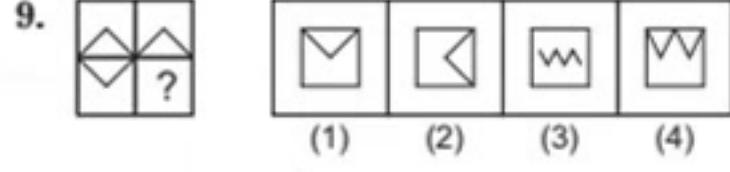
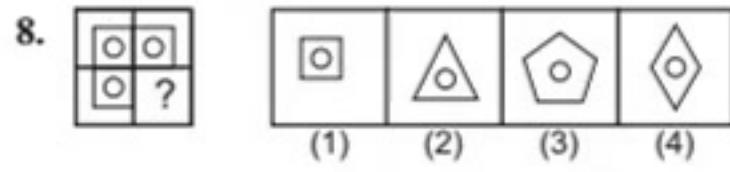
## Practice Exercise

**Directions (Q.Nos. 1-24)** In the following questions a question figure is given to the left. A part of the figure is missing. Answer figures (1), (2), (3) and (4) are given to the right. Identify the figure out of the answer figures which may fit into the missing part. Do as to complete the pattern.

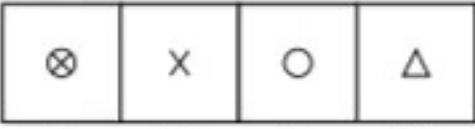
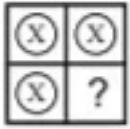
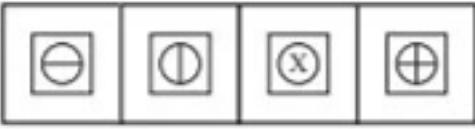
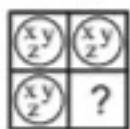
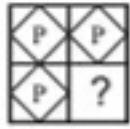
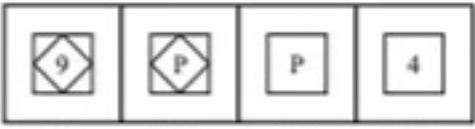
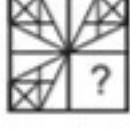
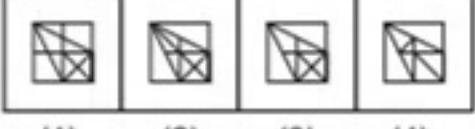
**Ques. Fig. Ans. Fig.**



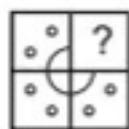
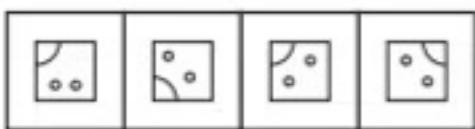
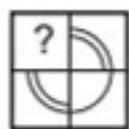
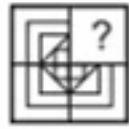
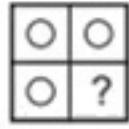
**Ques. Fig. Ans. Fig.**



**Ques. Fig. Ans. Fig.**

15.         
 (1) ⊗    (2) X    (3) ○    (4) △
16.         
 (1) ⊖    (2) ⊕    (3) ⊗    (4) ⊕
17.         
 (1) ⊗    (2) ⊕    (3) ⊕    (4) ⊕
18.         
 (1) 9    (2) P    (3) P    (4) 4
19.         
 (1) geometric shape    (2) geometric shape    (3) geometric shape    (4) geometric shape

**Ques. Fig. Ans. Fig.**

20.         
 (1) square with dots    (2) square with dots    (3) square with dots    (4) square with dots
21.         
 (1) circle with arc    (2) circle with arc    (3) triangle with triangle    (4) triangle with arc
22.         
 (1) triangle with diagonal line    (2) triangle with diagonal line    (3) triangle with diagonal line    (4) triangle with diagonal line
23.         
 (1) square with L shape    (2) square with L shape    (3) square with L shape    (4) square with L shape
24.         
 (1) circle    (2) square    (3) triangle    (4) pentagon

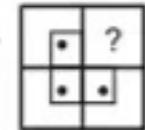
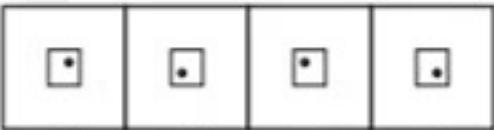
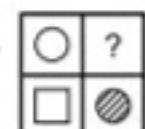
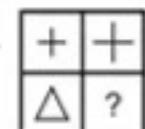
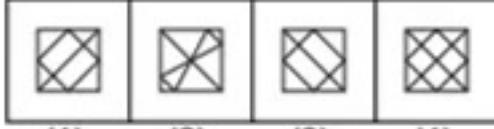
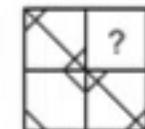
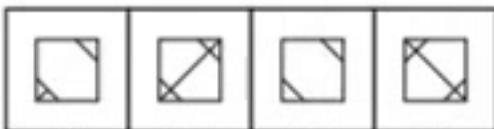
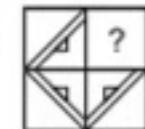
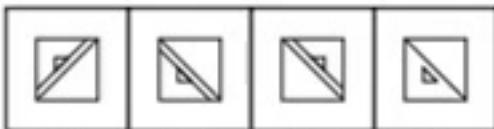
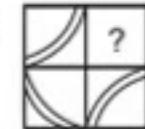
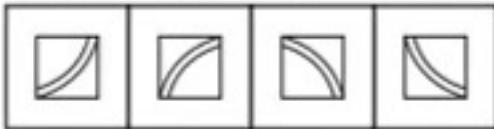
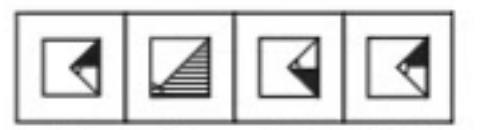
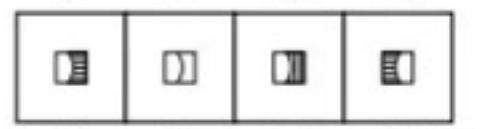
**Answers**

<b>1 (4)</b>	<b>2 (1)</b>	<b>3 (3)</b>	<b>4 (3)</b>	<b>5 (4)</b>	<b>6 (3)</b>	<b>7 (2)</b>	<b>8 (1)</b>	<b>9 (1)</b>	<b>10 (1)</b>
<b>11 (4)</b>	<b>12 (1)</b>	<b>13 (3)</b>	<b>14 (1)</b>	<b>15 (3)</b>	<b>16 (3)</b>	<b>17 (4)</b>	<b>18 (2)</b>	<b>19 (3)</b>	<b>20 (2)</b>
<b>21 (2)</b>	<b>22 (2)</b>	<b>23 (2)</b>	<b>24 (1)</b>						

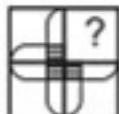
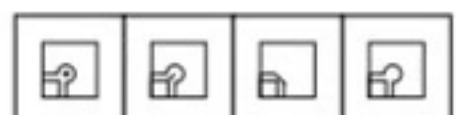
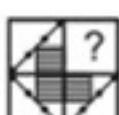
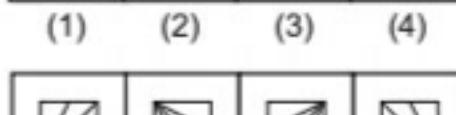
# Self Practice

**Directions (Q. Nos. 1-30)** In the following questions a question figure is given to the left. A part of the figure is missing. Answer figures (1), (2), (3) and (4) are given to the right. Identify the figure out of the answer figures which may fit into the missing part. Do as to complete the pattern.

**Ques. Fig. Ans. Fig.**

1.  
2.  
3.  
4.  
5.  
6.  
7.  
8.  
9.  
10.  

**Ques. Fig. Ans. Fig.**

11.  
12.  
13.  
14.  
15.  
16.  
17.  
18.  
19.  
20.  

**Ques. Fig. Ans. Fig.**

21.   
  
(1) (2) (3) (4)
22.   
  
(1) (2) (3) (4)
23.   
  
(1) (2) (3) (4)
24.   
  
(1) (2) (3) (4)
25.   
  
(1) (2) (3) (4)

**Ques. Fig. Ans. Fig.**

26.   
  
(1) (2) (3) (4)
27.   
  
(1) (2) (3) (4)
28.   
  
(1) (2) (3) (4)
29.   
  
(1) (2) (3) (4)
30.   
  
(1) (2) (3) (4)

**Answers**

1. (1)	2. (1)	3. (2)	4. (1)	5. (1)	6. (3)	7. (2)	8. (3)	9. (2)	10. (2)
11. (4)	12. (3)	13. (2)	14. (4)	15. (2)	16. (2)	17. (1)	18. (1)	19. (1)	20. (2)
21. (2)	22. (1)	23. (1)	24. (1)	25. (2)	26. (2)	27. (3)	28. (3)	29. (4)	30. (1)

# CHAPTER 04

## FIGURE SERIES COMPLETION

In this chapter a series of figures is given as question figures and the candidates are asked to select one of the figure from the set of answer figures which will continue the given sequence.

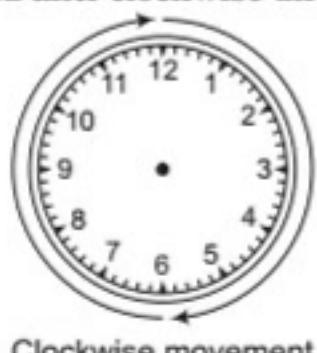
You are expected to have a clear vision of different movements and additions/deletions of designs and their rotation.

This type of problem on series consists of three figures forming the set of problem figures followed by four other figures forming the set of answer figures. The students are required to select one of the figure from the set of answer figures which will continue the sequence.

While solving the questions, the students should following points.

### Rotational Direction

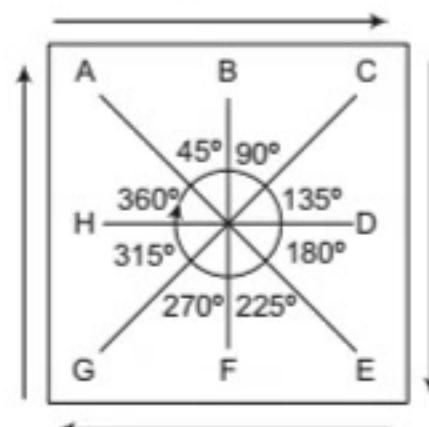
The rotational direction basically states the clockwise and anti-clockwise directions.



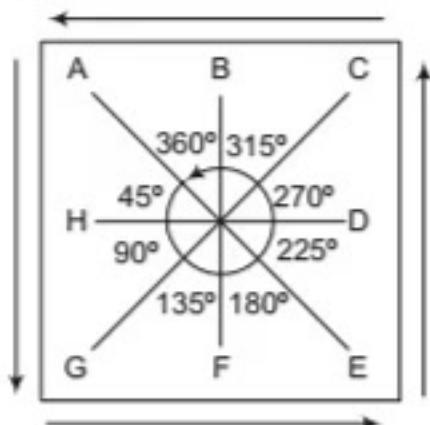
### Directional Movement of Designs

This provides the knowledge of angular movement of designs in clockwise and anti-clockwise directions.

#### Clockwise Movement



$$\begin{array}{ll} A \rightarrow B = 45^\circ; & A \rightarrow C = 90^\circ \\ A \rightarrow D = 135^\circ; & A \rightarrow E = 180^\circ \\ A \rightarrow F = 225^\circ; & A \rightarrow G = 270^\circ \\ A \rightarrow H = 315^\circ; & A \rightarrow A = 360^\circ \end{array}$$

**Anti-clockwise Movement**

$$A \rightarrow H = 45^\circ$$

$$A \rightarrow G = 90^\circ$$

$$A \rightarrow F = 135^\circ$$

$$A \rightarrow E = 180^\circ$$

$$A \rightarrow D = 225^\circ$$

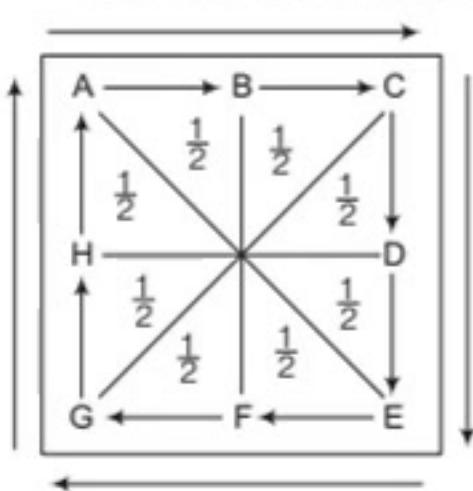
$$A \rightarrow C = 270^\circ$$

$$A \rightarrow B = 315^\circ$$

$$A \rightarrow A = 360^\circ$$

**Movement of Designs Through Distance**

The movement of designs through distance in clockwise and anti-clockwise directions is given below.

**Clockwise Movement**

$$A \rightarrow B = \frac{1}{2} \text{ arm/step};$$

$$A \rightarrow C = 1 \text{ arm/step}$$

$$A \rightarrow D = 1 \frac{1}{2} \text{ arm/step};$$

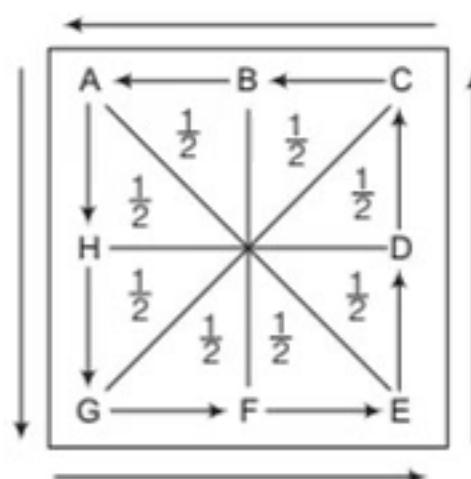
$$A \rightarrow E = 2 \text{ arm/step}$$

$$A \rightarrow F = 2 \frac{1}{2} \text{ arm/step};$$

$$A \rightarrow G = 3 \text{ arm/step}$$

$$A \rightarrow H = 3 \frac{1}{2} \text{ arm/step};$$

$$A \rightarrow A = 4 \text{ arm/step}$$

**Anti-clockwise Movement**

$$A \rightarrow H = \frac{1}{2} \text{ arm/step};$$

$$A \rightarrow G = 1 \text{ arm/step}$$

$$A \rightarrow F = 1 \frac{1}{2} \text{ arm/step};$$

$$A \rightarrow E = 2 \text{ arm/step}$$

$$A \rightarrow D = 2 \frac{1}{2} \text{ arm/step};$$

$$A \rightarrow C = 3 \text{ arm/step}$$

$$A \rightarrow B = 3 \frac{1}{2} \text{ arm/step};$$

$$A \rightarrow A = 4 \text{ arm/step}$$

In this chapter the changes between figures can be based on following

- Based on number of designs
- Based on position of designs
- Based on side of designs
- Based on size and colour of designs

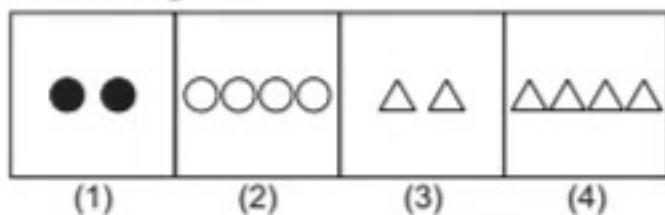
### Based on Number of Designs

In this type, the changes occur according to the number of designs. The designs becomes more or less than its previous number of designs.

#### Example 1. Ques. Figures



#### Answer Figures



Sol. (4) In each successive figure, one more design is added. Small circle and triangle increases in alternate order. Hence, four triangles will come in fourth figure.

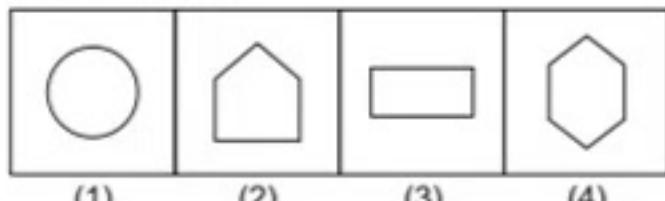
### Based on Number of Sides of Designs

In this type, the numbers of sides of design increases or decreases.

#### Example 2. Ques. Figures



#### Answer Figures

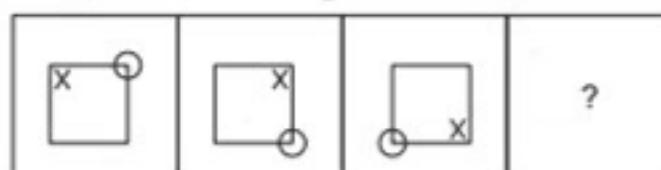


Sol. (2) In each successive figure, one side is increasing. Hence, pentagon will come in fourth figure.

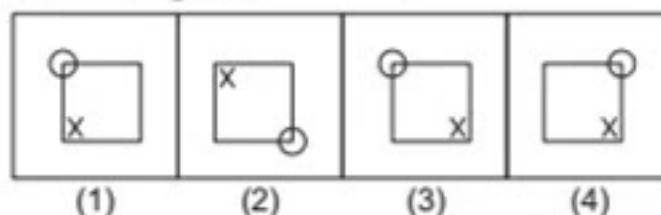
### Based on Position of Designs

In this type, designs move from one position to another in a certain fixed pattern.

#### Example 3. Ques. Figures



#### Answer Figures



Sol. (1) In each successive figure design (x) and (O) move one step in clockwise direction.

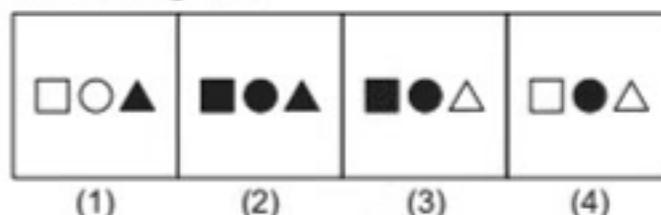
### Based on Size and Colour of Designs

In this type, shaded designs become unshaded and *vice-versa*, small designs becomes larger and *vice-versa* and a new design replaces the other design.

#### Example 4. Ques. Figures



#### Answer Figures

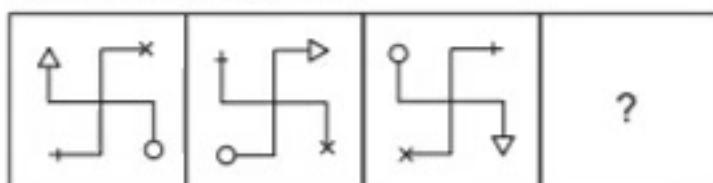


Sol. (2) In each successive figure one more design becomes shaded from the right side.

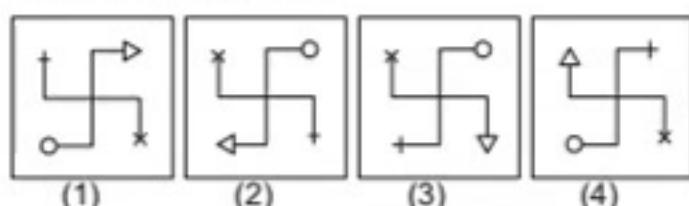
# Entrance Corner

**Directions (Q. Nos. 1–52)** In the following questions, three question figures are given and the space for the fourth place question mark (?). The question figures are in a series. Choose the figure out of the four answer figures marked as 1, 2, 3 and 4 which may complete the series.

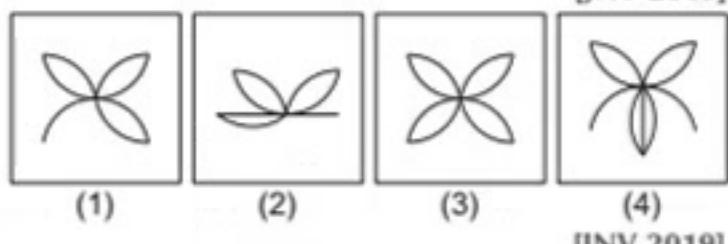
**1. Question Figures**



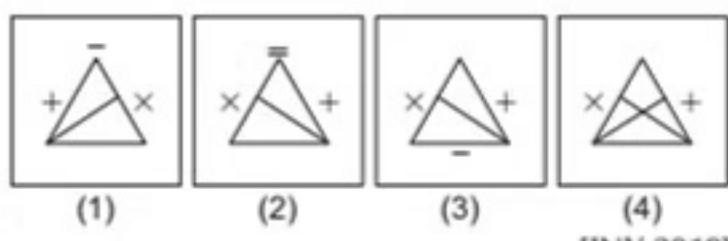
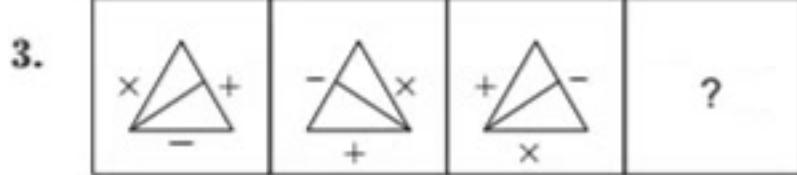
**Answer Figures**



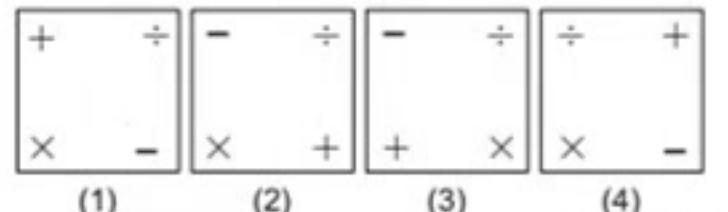
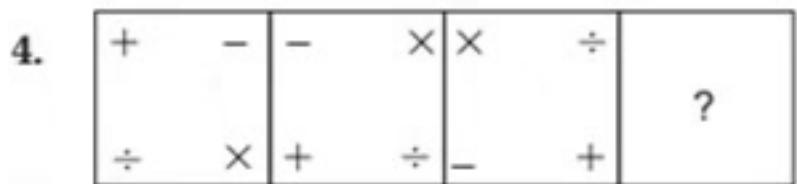
[JNV 2019]



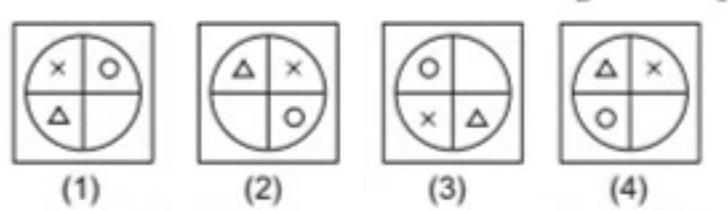
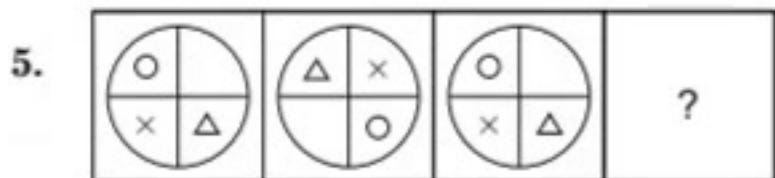
[JNV 2019]



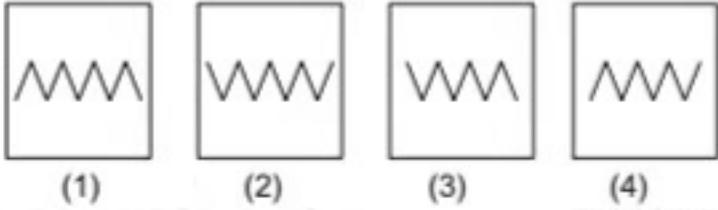
[JNV 2019]



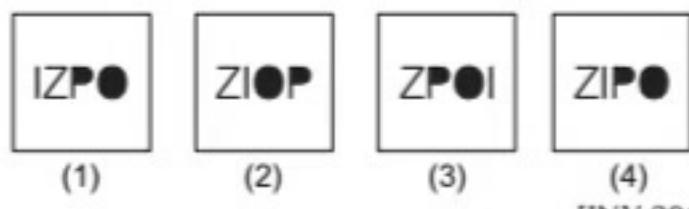
[JNV 2019]



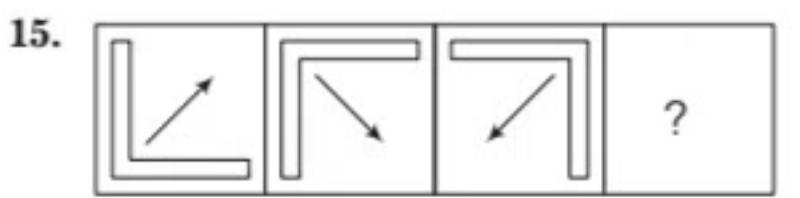
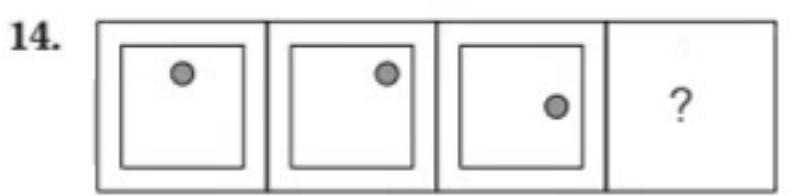
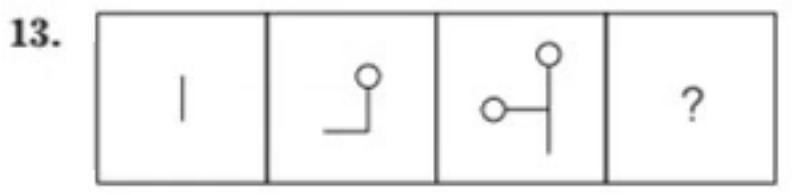
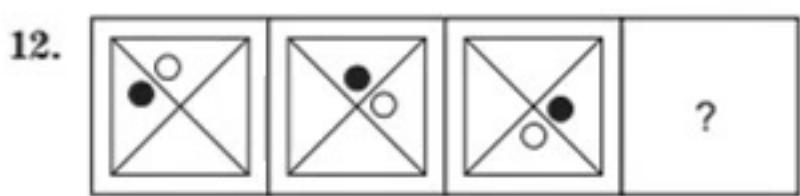
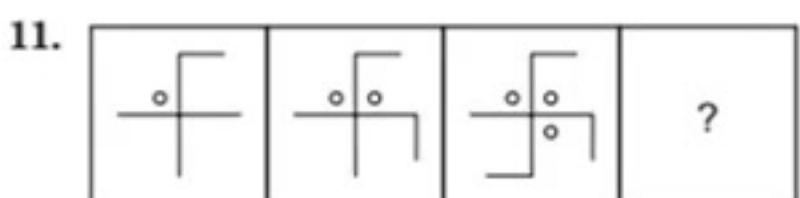
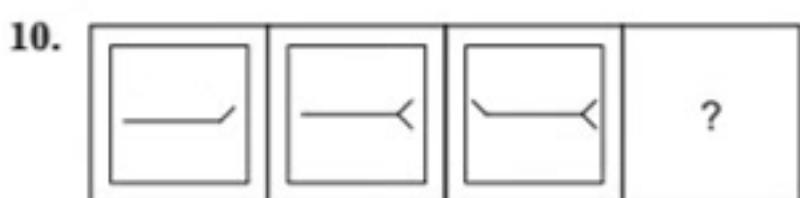
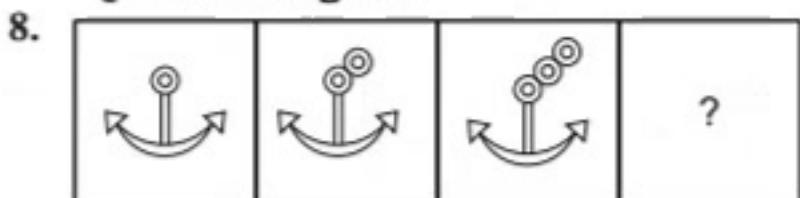
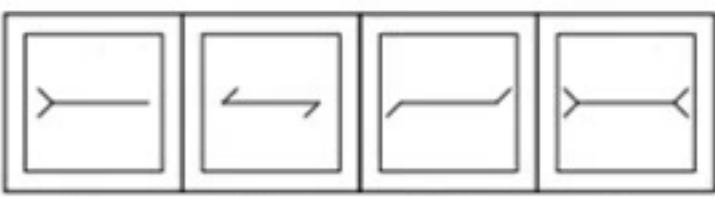
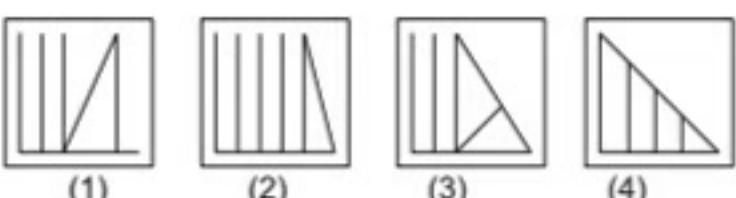
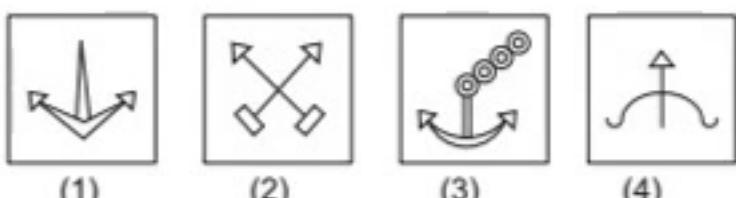
[JNV 2018]



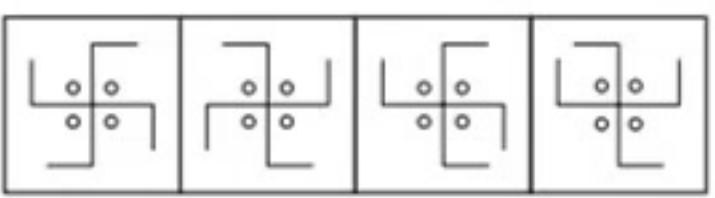
[JNV 2018]



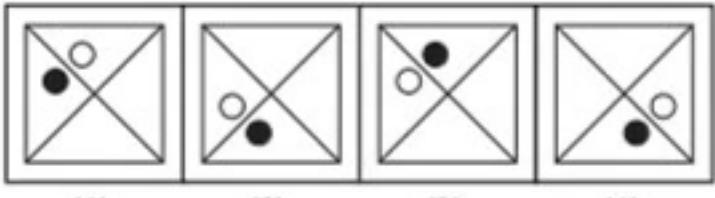
[JNV 2018]

**Question Figures****Answer Figures**

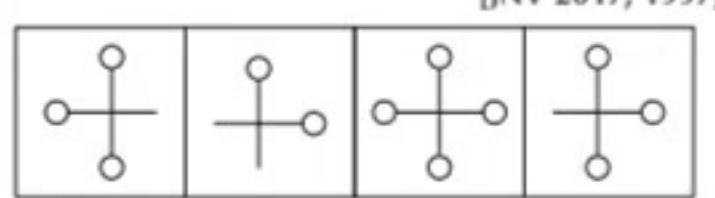
[JNV 2017, 2005]



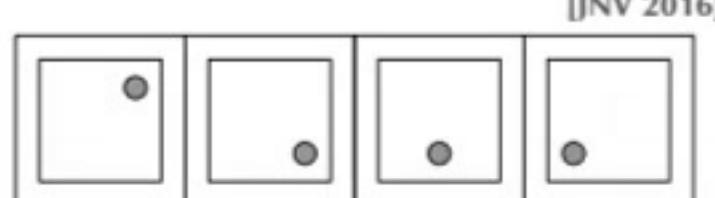
[JNV 2017, 2005]



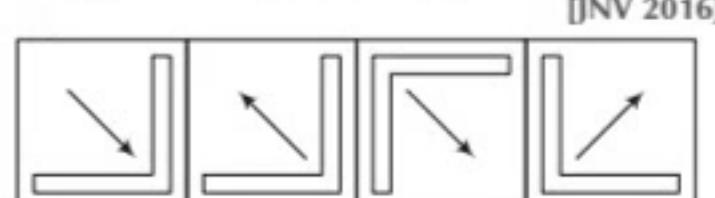
[JNV 2017, 1997]



[JNV 2016]



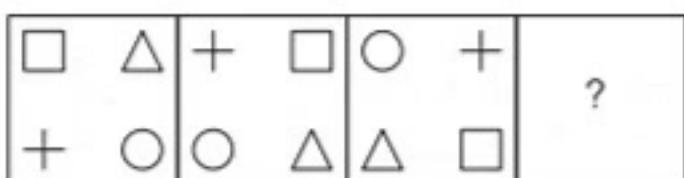
[JNV 2016]



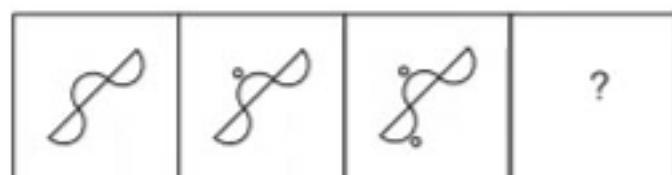
[JNV 2016]

**Question Figures**

16.



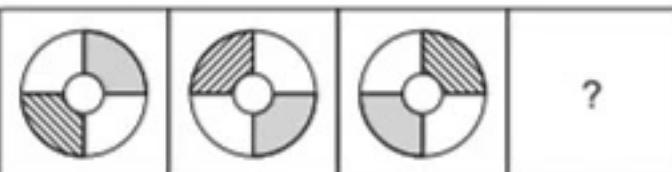
17.



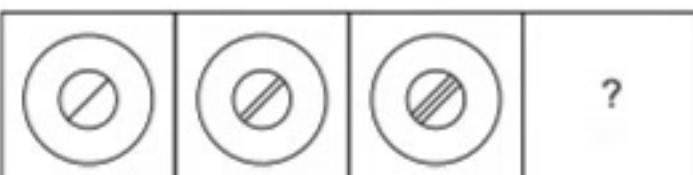
18.



19.



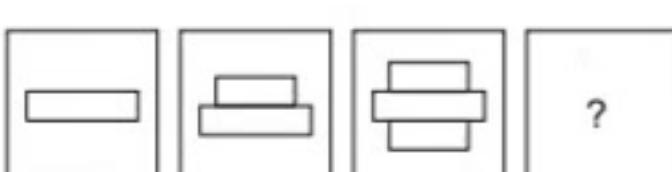
20.



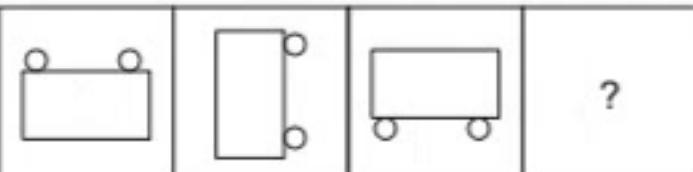
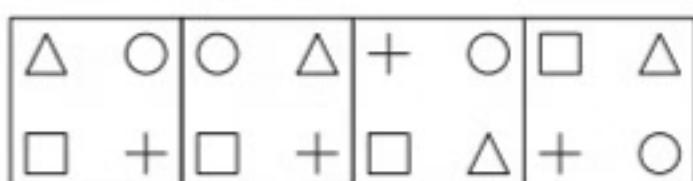
21.



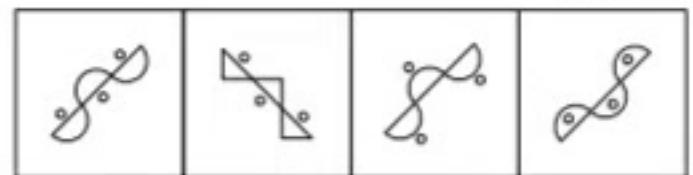
22.



23.

**Answer Figures**

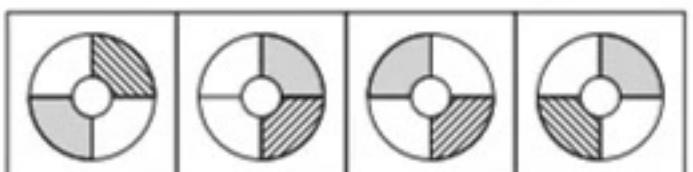
(1) (2) (3) (4) [JNV 2015]



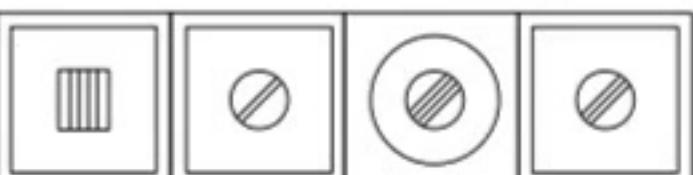
(1) (2) (3) (4) [JNV 2015]



(1) (2) (3) (4) [JNV 2015]



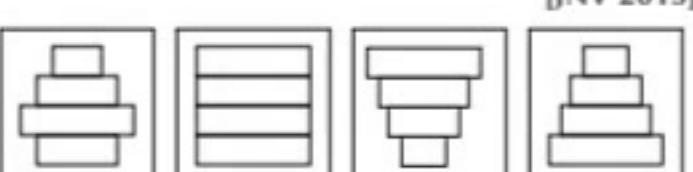
(1) (2) (3) (4) [JNV 2014]



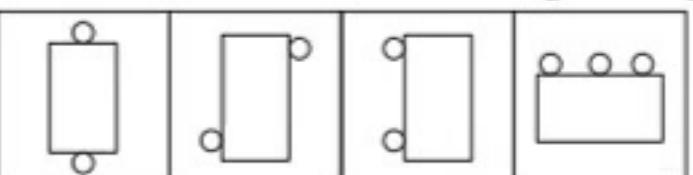
(1) (2) (3) (4) [JNV 2014]



(1) (2) (3) (4) [JNV 2013]



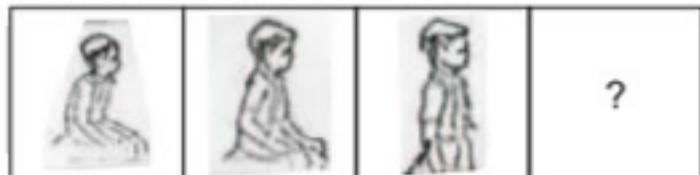
(1) (2) (3) (4) [JNV 2013]



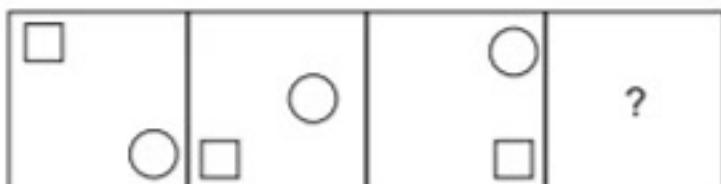
(1) (2) (3) (4) [JNV 2012]

**Question Figures**

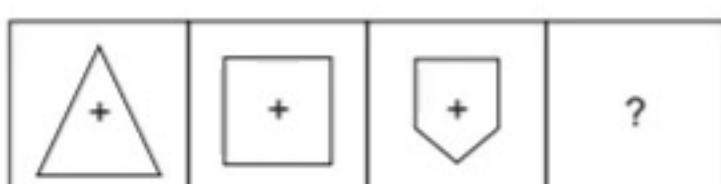
24.



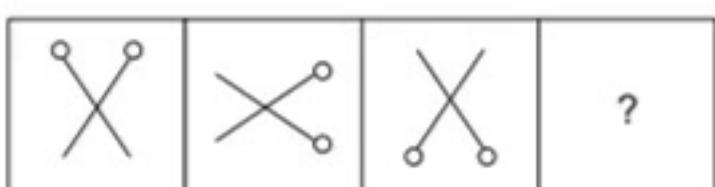
25.



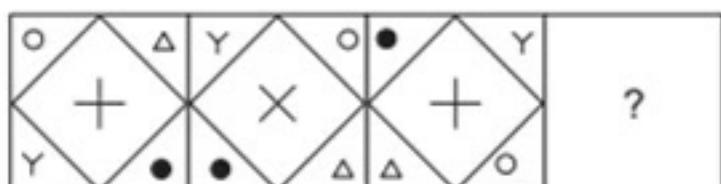
26.



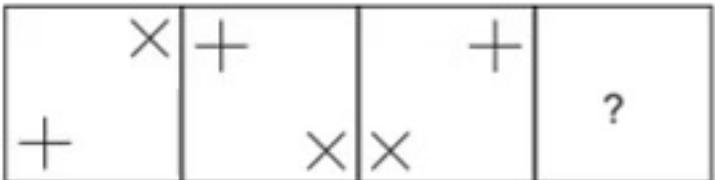
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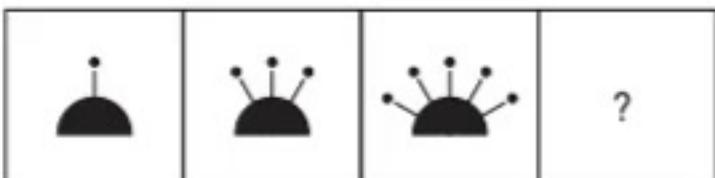
28.



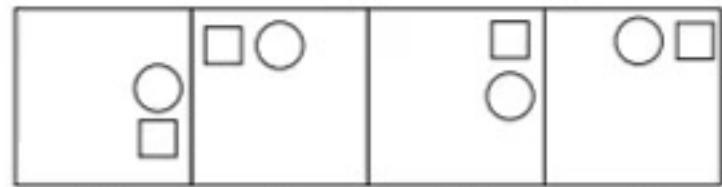
29.



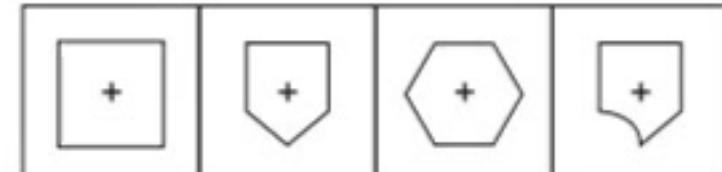
30.

**Answer Figures**

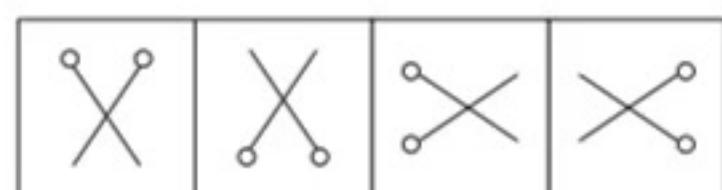
(1) (2) (3) (4)  
[JNV 2012]



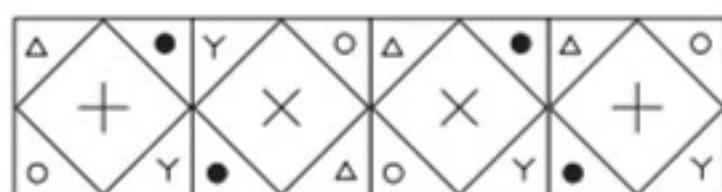
(1) (2) (3) (4)  
[JNV 2011]



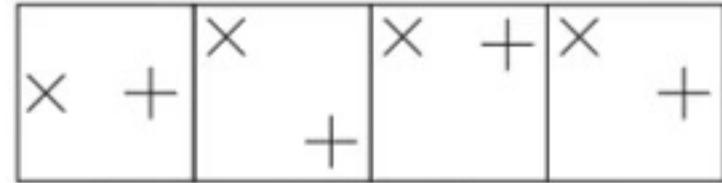
(1) (2) (3) (4)  
[JNV 2011]



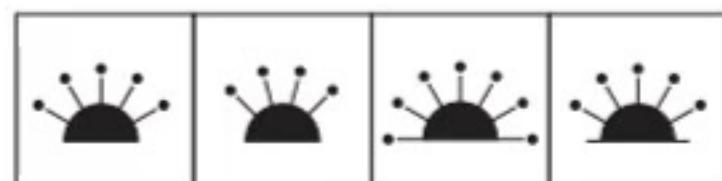
(1) (2) (3) (4)  
[JNV 2010]



(1) (2) (3) (4)  
[JNV 2010]



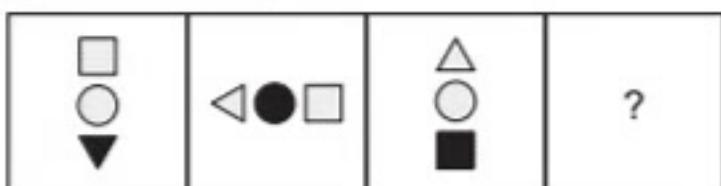
(1) (2) (3) (4)  
[JNV 2009]



(1) (2) (3) (4)  
[JNV 2009]

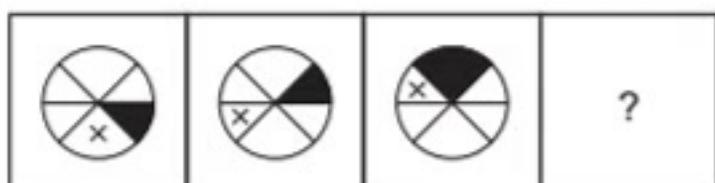
**Question Figures**

31.



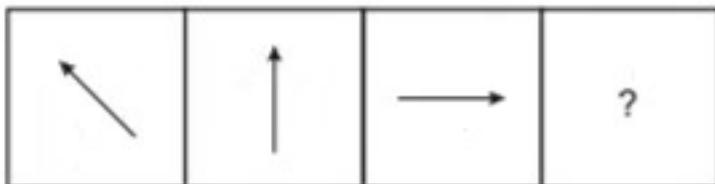
?

32.



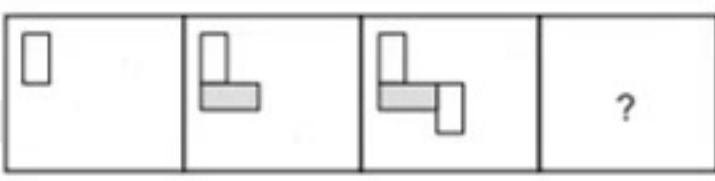
?

33.



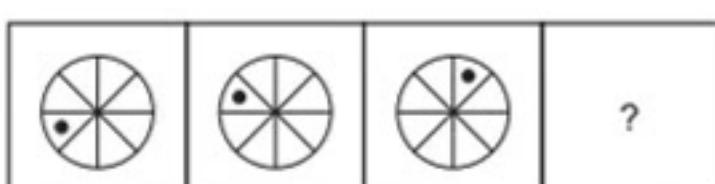
?

34.



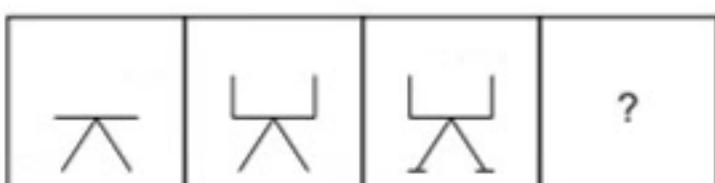
?

35.



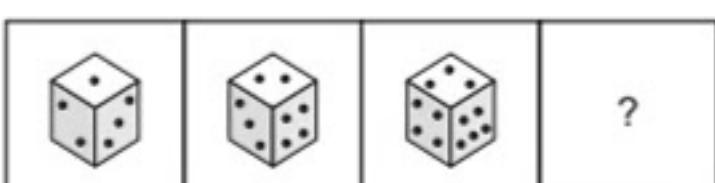
?

36.

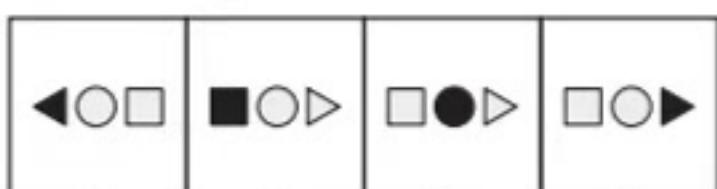


?

37.



?

**Answer Figures**

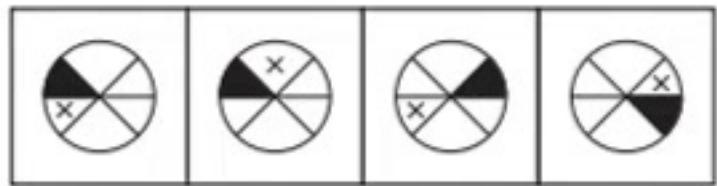
(1)

(2)

(3)

(4)

[JNV 2008]



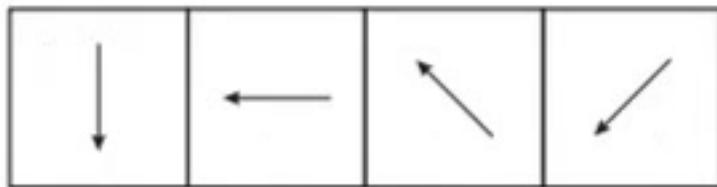
(1)

(2)

(3)

(4)

[JNV 2008]



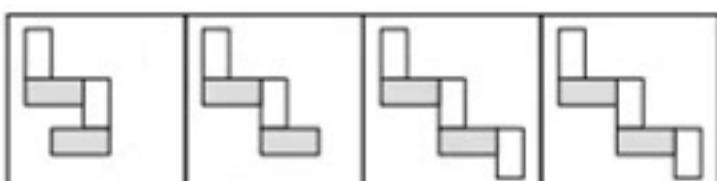
(1)

(2)

(3)

(4)

[JNV 2007]



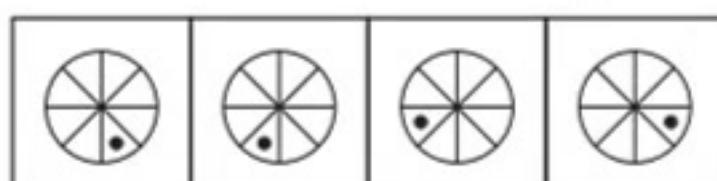
(1)

(2)

(3)

(4)

[JNV 2007]



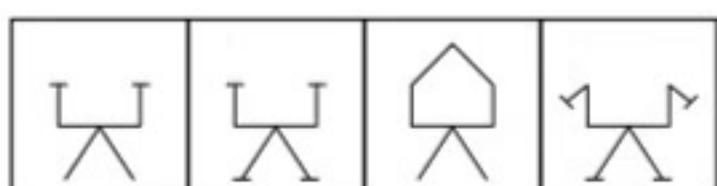
(1)

(2)

(3)

(4)

[JNV 2007]



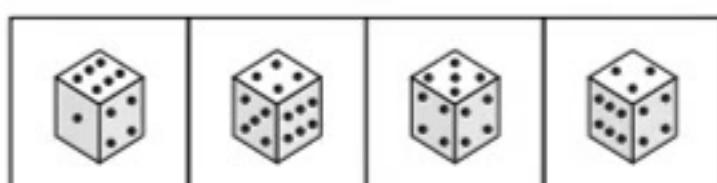
(1)

(2)

(3)

(4)

[JNV 2004]



(1)

(2)

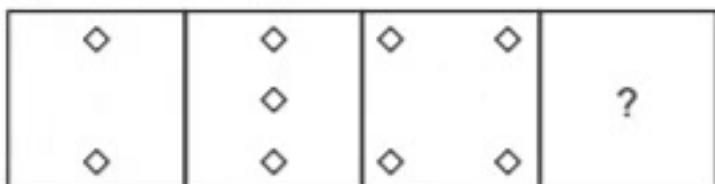
(3)

(4)

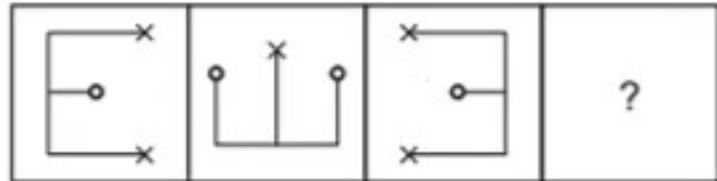
[JNV 2004]

**Question Figures**

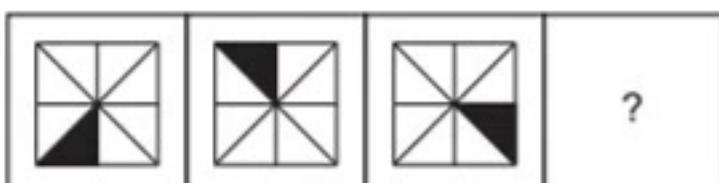
38.



39.



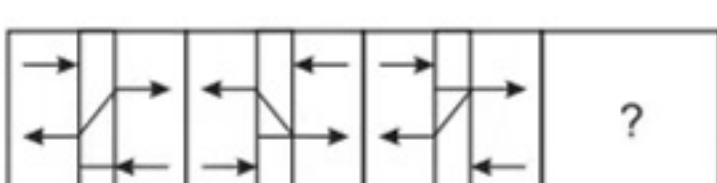
40.



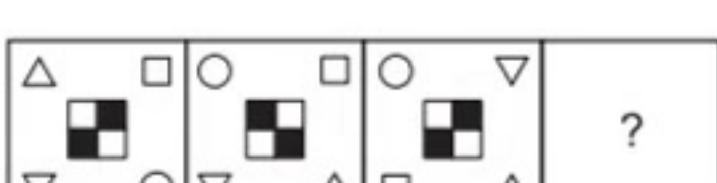
41.



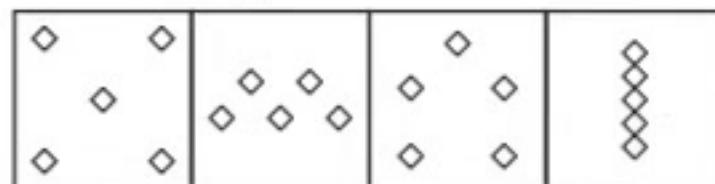
42.



43.



44.

**Answer Figures**

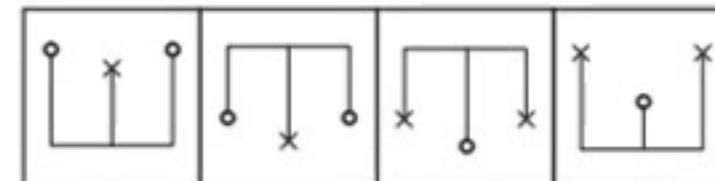
(1)

(2)

(3)

(4)

[JNV 2003]



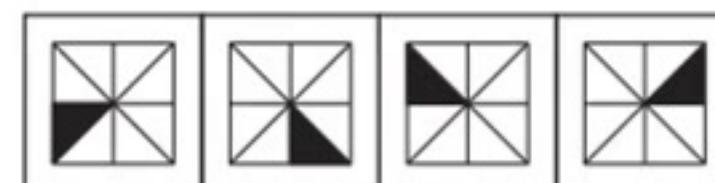
(1)

(2)

(3)

(4)

[JNV 2003]



(1)

(2)

(3)

(4)

[JNV 2002]



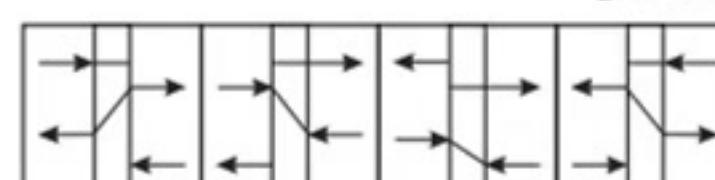
(1)

(2)

(3)

(4)

[JNV 2002]



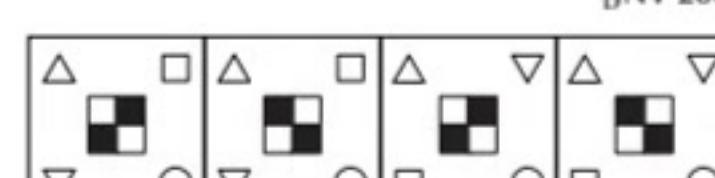
(1)

(2)

(3)

(4)

[JNV 2001]



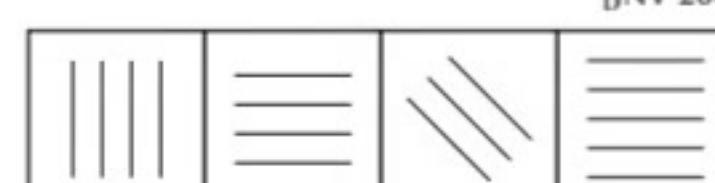
(1)

(2)

(3)

(4)

[JNV 2001]



(1)

(2)

(3)

(4)

[JNV 2000]

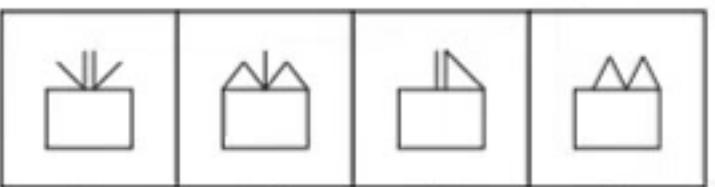
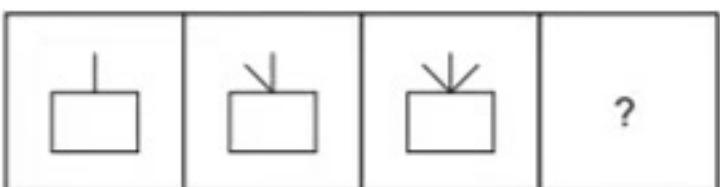
## 45. Question Figures



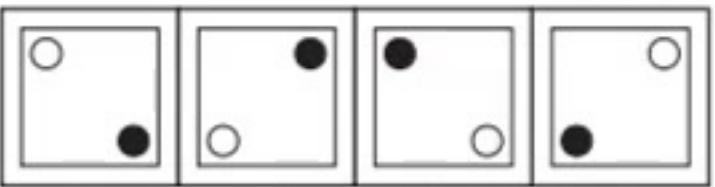
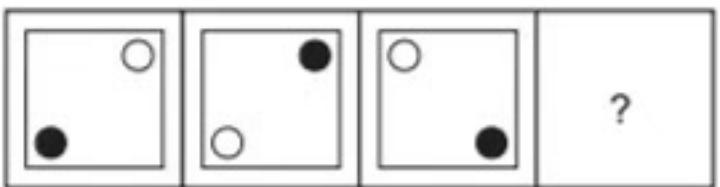
## Answer Figures

(1) (2) (3) (4)  
[JNV 2000]

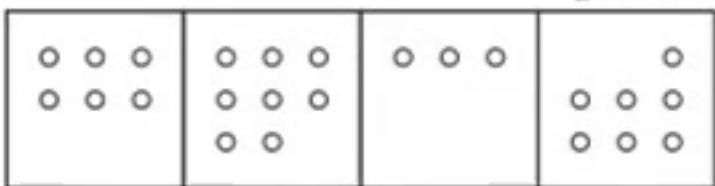
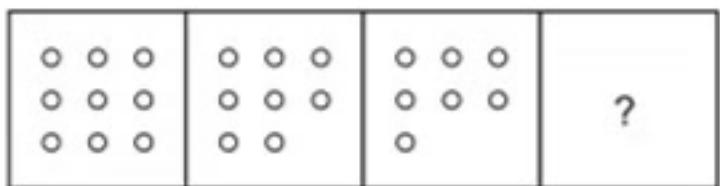
## 46.

(1) (2) (3) (4)  
[JNV 1999]

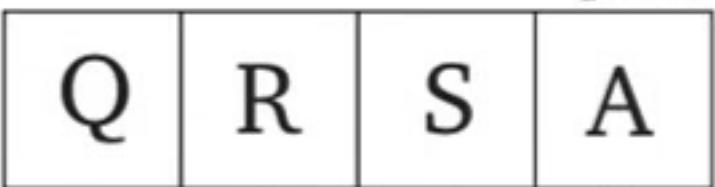
## 47.

(1) (2) (3) (4)  
[JNV 1999]

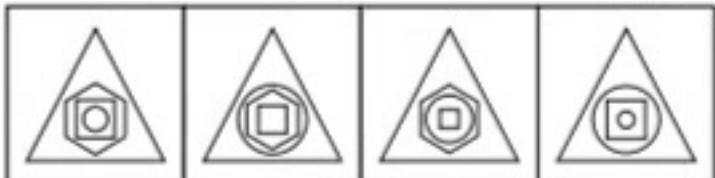
## 48.

(1) (2) (3) (4)  
[JNV 1999]

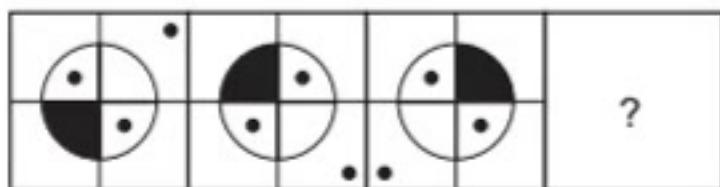
## 49.

(1) (2) (3) (4)  
[JNV 1999]

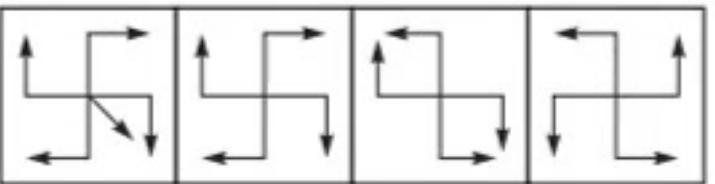
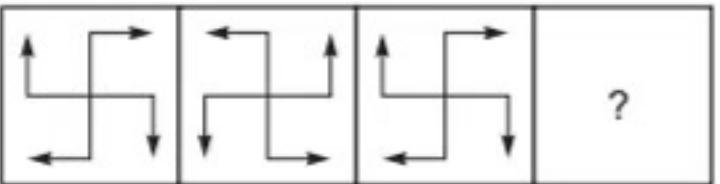
## 50.

(1) (2) (3) (4)  
[JNV 1998]

## 51.

(1) (2) (3) (4)  
[JNV 1998]

## 52.

(1) (2) (3) (4)  
[JNV 1998]

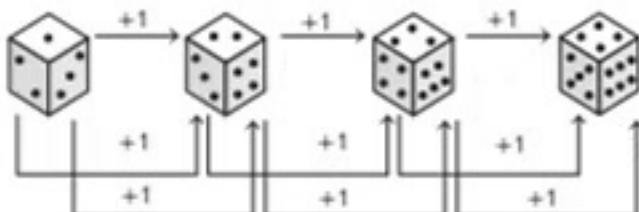
## Answers

1 (2)	2 (1)	3 (3)	4 (4)	5 (2)	6 (2)	7 (4)	8 (3)	9 (2)	10 (4)
11 (1)	12 (2)	13 (1)	14 (2)	15 (2)	16 (1)	17 (3)	18 (1)	19 (3)	20 (3)
21 (1)	22 (1)	23 (3)	24 (2)	25 (4)	26 (3)	27 (3)	28 (3)	29 (2)	30 (3)
31 (4)	32 (2)	33 (4)	34 (2)	35 (1)	36 (2)	37 (2)	38 (1)	39 (2)	40 (1)
41 (1)	42 (4)	43 (2)	44 (2)	45 (4)	46 (1)	47 (3)	48 (1)	49 (2)	50 (1)
51 (4)	52 (4)								

## Hints and Solutions

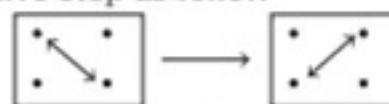
1. The elements are moving from one corner to other in clockwise direction in each step. Hence, answer figure (2) will complete the given series.
2. One half-leaf is added in each step in clockwise direction. Hence, answer figure (1) will complete the given series.
3. The symbols are moving from one side of triangle to other in clockwise direction in each step and the line inside the triangle is same in each alternative figure. Hence, answer figure (3) will complete the series.
4. The symbols are changing their position from one corner to other in anti-clockwise direction in each step. Hence, answer figure (4) will complete the given series.
5. First and third figures are same. So, the fourth figure will be same as second figure.
6. In each successive figure, two lines i.e. 'v' are increasing.
7. In each successive figure, the left most letter is shifted to the right most corner.
8. In each successive figure, a symbol '◎' is increasing.
9. In each successive figure, a vertical line is added to the left most corner and triangle becomes smaller.
10. One small lines is increasing in each successive figure. Therefore, answer figure (4) will the blank space.
11. One small line and a small circle is increasing in subsequent figures. Therefore, answer figure (1) will occupy the blank space.
12. In each successive figure, circles are moving one block in clockwise direction. Therefore, answer figure (2) will occupy the blank space.
13. In each successive figure one line and one small circle is increasing in the design.
14. In each successive figure shaded circle moves half arm in clockwise direction.
15. Each successive figure rotates 90° in clockwise direction to obtain the next figure.
16. In each successive figure designs are moving from one corner to other in clockwise direction.
17. In each successive figure one small circle appears outside the curved line.
18. In each successive figure one small vertical line increases outside the rectangle.
19. In each step, the question figure rotates through 90° clockwise.
20. In each successive figure, a slant line inside the small circle is increasing.
21. In each successive figure, the design rotates 90° in anti-clockwise direction.
22. In each successive figure one upper and lower small rectangle is added.
23. In each step, whole design rotates 90° in clockwise direction.
24. In each step, boy is one step ahead of his previous step.
25. Square is moving 1 arm and circle is moving  $\frac{1}{2}$  arm in anti-clockwise direction.
26. One line is adding to geometrical design in each step.
27. In each step figure rotates 90° clockwise. So, answer figure (3) is the correct answer.

- 28.** In each successive figure middle element rotates  $45^\circ$  clockwise and four corner elements move one position in clockwise direction.
- 29.** In each step, elements are moving from one corner to other in clockwise direction.
- 30.** In each successive figure, two pins are adding at the top of the semicircular.
- 31.** Figure rotates  $90^\circ$  clockwise and in the first figure triangle ( $\Delta$ ) is black, in second figure circle is black and in third figure square is black therefore in fourth figure triangle is black.
- 32.** Shaded part is moving one step anti-clockwise and cross is moving one step clockwise.
- 33.** Arrow is rotating  $45^\circ$ ,  $90^\circ$  and then  $135^\circ$ , in clockwise direction, so answer figure is (4).
- 34.** In each step, shaded and unshaded rectangles are added alternatively in a fixed pattern.
- 35.** Black circle moves 1 section, 2 sections and 3 sections in each step.
- 36.** Two lines are adding subsequently in the design.
- 37.** The dice are following below pattern.



- 38.** In each successive figure, one design is increasing.

- 39.** The figure is moving  $90^\circ$  in anti-clockwise direction and elements are inter changing their place in each step.
- 40.** The shaded part is moving three blocks ahead in clockwise direction.
- 41.** The design is moving  $90^\circ$  in clockwise direction and right corner's side is half eliminated.
- 42.** The design rotates  $180^\circ$  and the horizontal line comes upwards.
- 43.** The middle design rotates  $90^\circ$  in each step and the elements at corner changes their position in each alternative step as follow

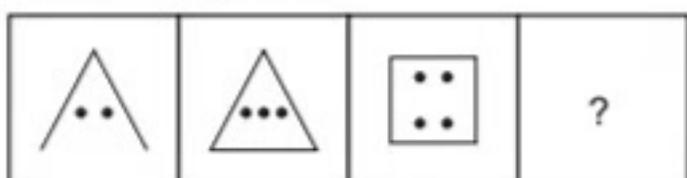


- 44.** In each successive figure, one line is increasing.
- 45.** One line is adding in each subsequent figure.
- 46.** One line is adding at the top of the rectangle subsequently.
- 47.** From first figure to second figure, both the circles change their position. Similarly from third to fourth figure both the circles will change their position.
- 48.** Circles are decreasing by one, subsequently.
- 49.** The series follows below pattern in each step.  
 $L \xrightarrow{+2} N \xrightarrow{+2} P \xrightarrow{+2} [R]$
- 50.** The outer most design comes inside in each step.
- 51.** The design is moving  $90^\circ$  in clockwise direction.
- 52.** The first figure is same as the third figure. Thus, the answer figure will be same as the second figure.

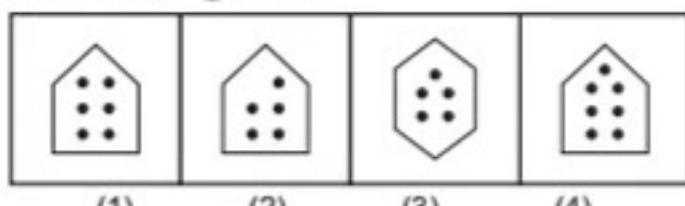
## Practice Exercise

**Directions (Q. Nos. 1–50)** In the following questions three question figures are given and the space for the fourth place has a question mark (?). The question figures are in a series. Choose the figure out of the four answer figures marked as 1, 2, 3 and 4 which may complete the series.

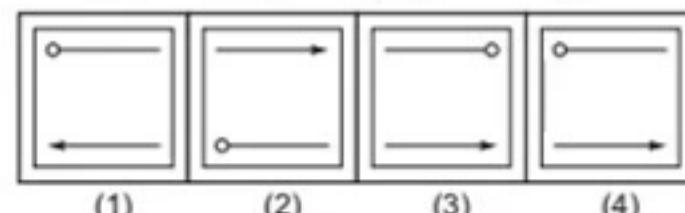
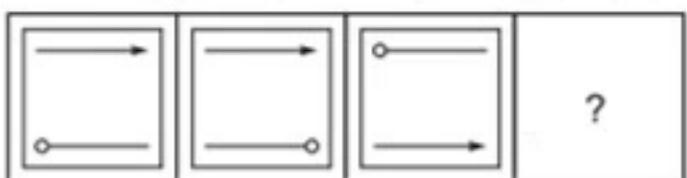
### 1. Question Figures



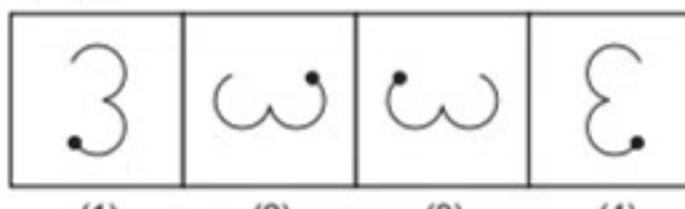
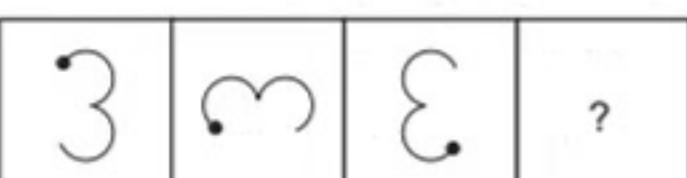
### Answer Figures



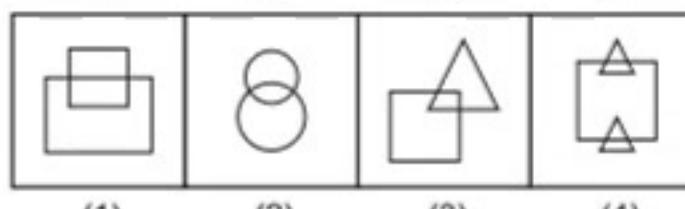
### 2.



### 3.



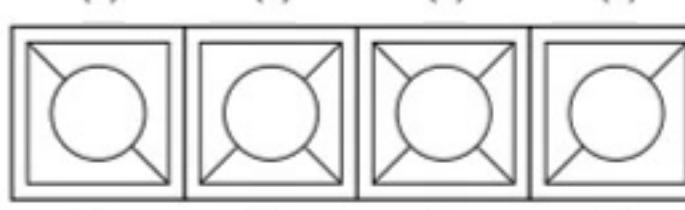
### 4.



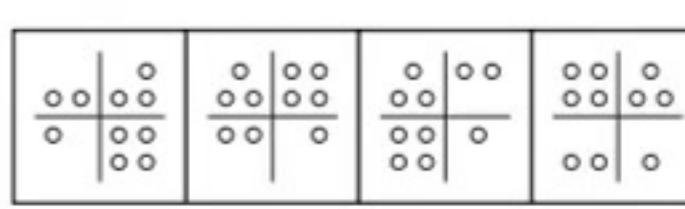
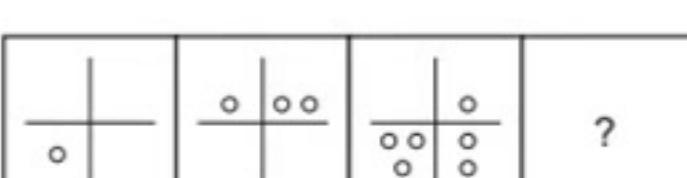
### 5.



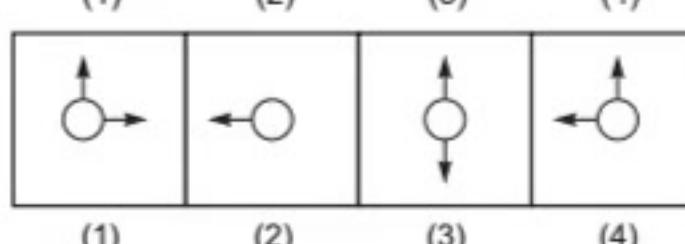
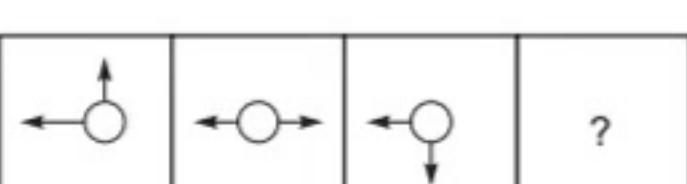
### 6.



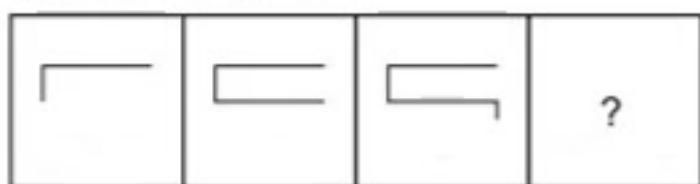
### 7.



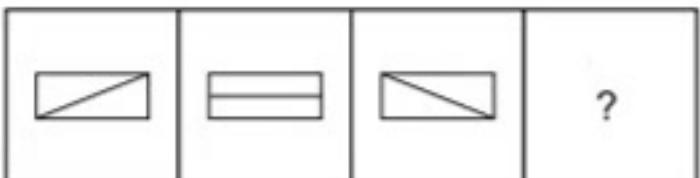
### 8.



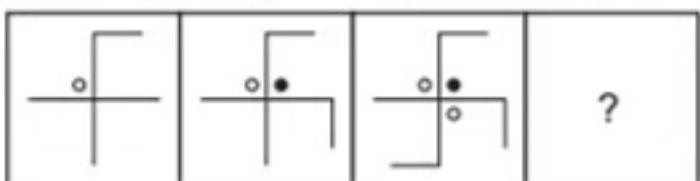
## 9. Question Figures



10.



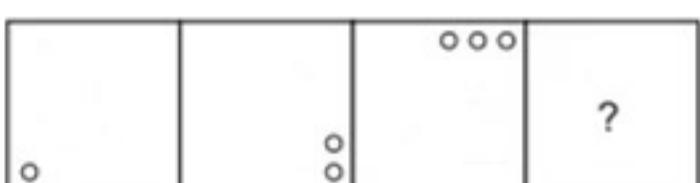
11.



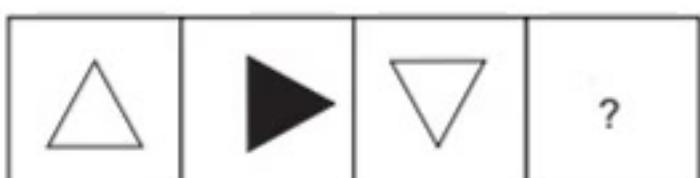
12.



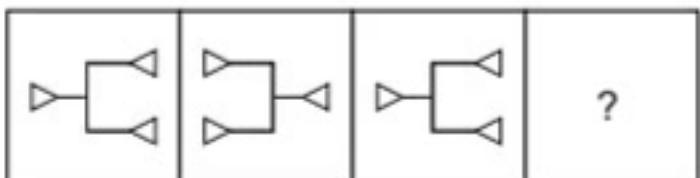
13.



14.



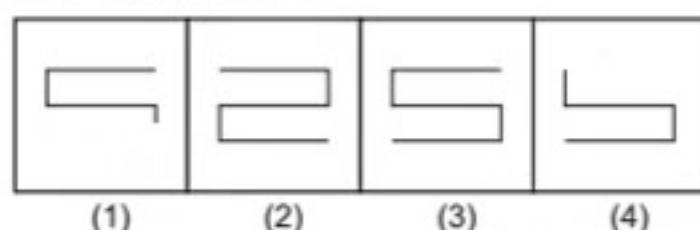
15.



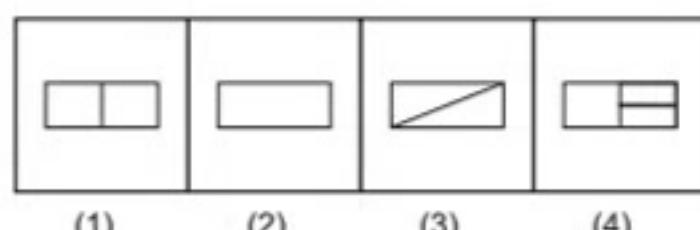
16.



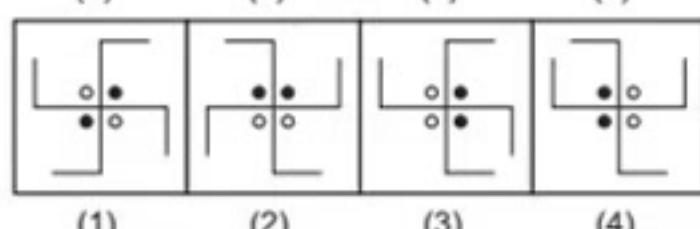
## Answer Figures



(1) (2) (3) (4)



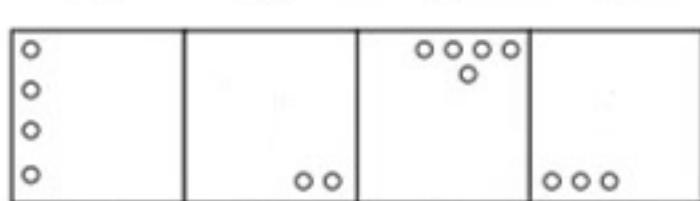
(1) (2) (3) (4)



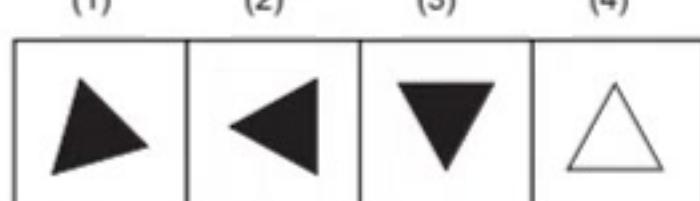
(1) (2) (3) (4)



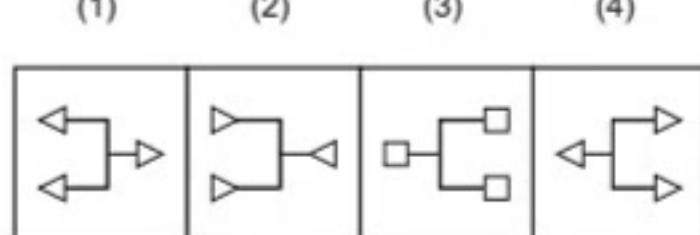
(1) (2) (3) (4)



(1) (2) (3) (4)



(1) (2) (3) (4)



(1) (2) (3) (4)

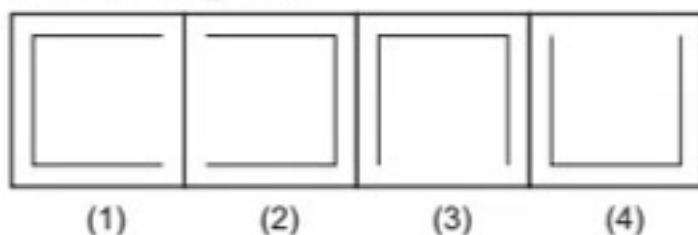


(1) (2) (3) (4)

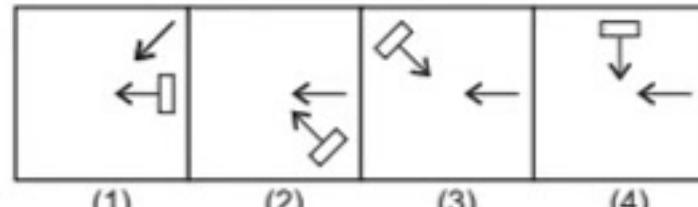
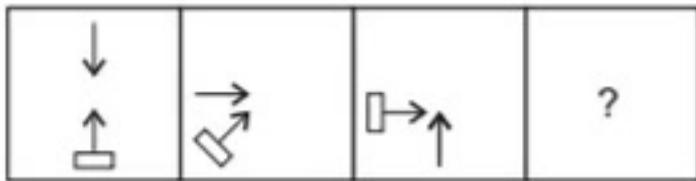
## 17. Question Figures



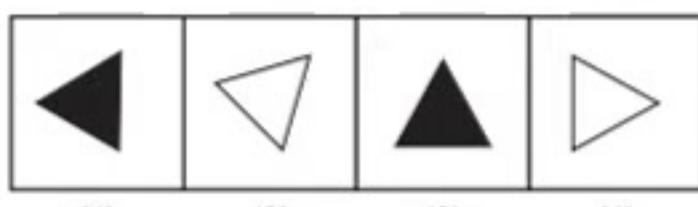
## Answer Figures



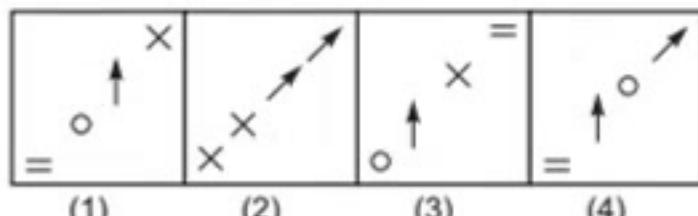
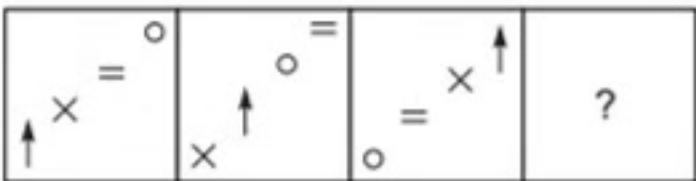
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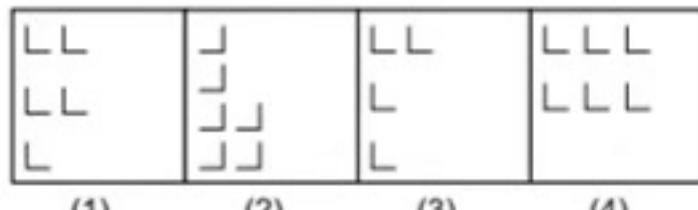
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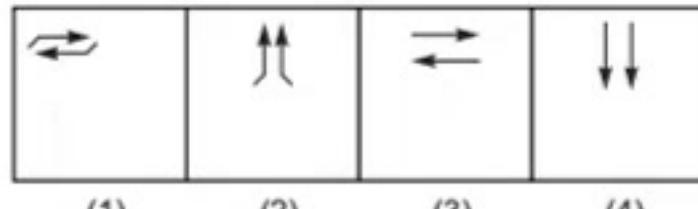
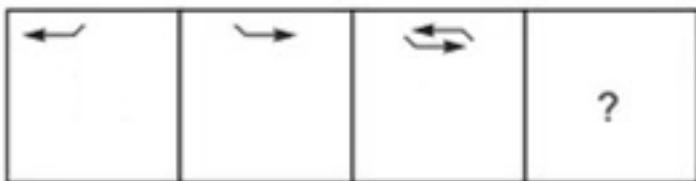
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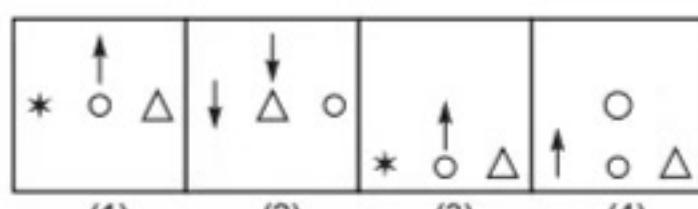
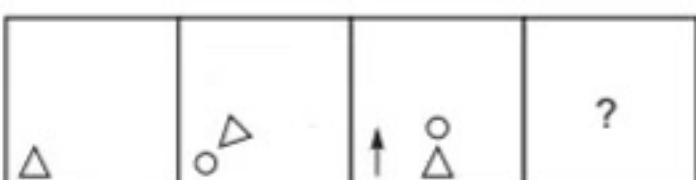
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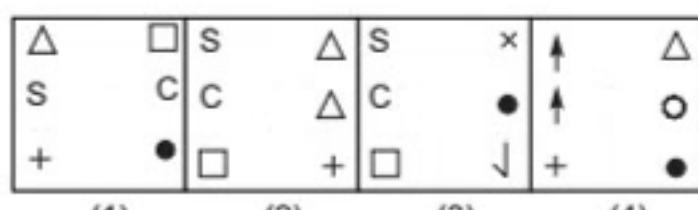
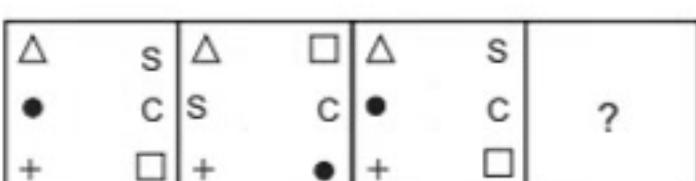
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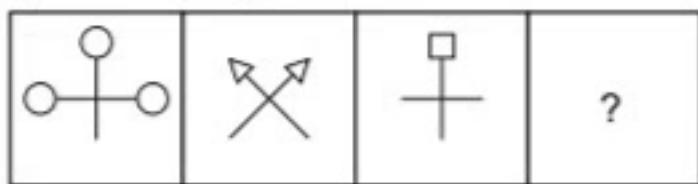
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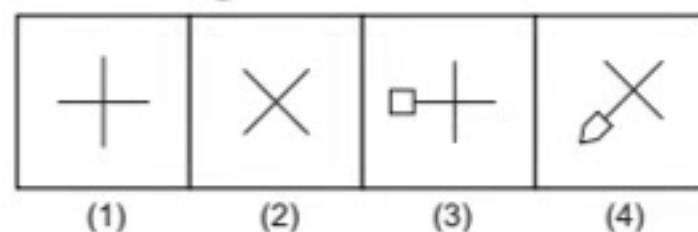
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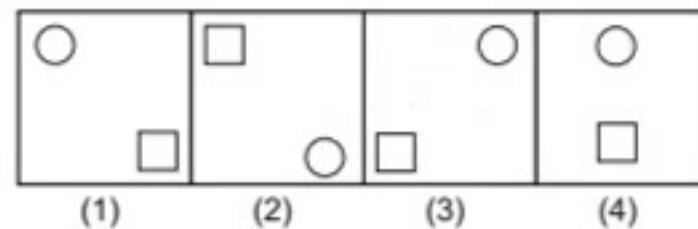
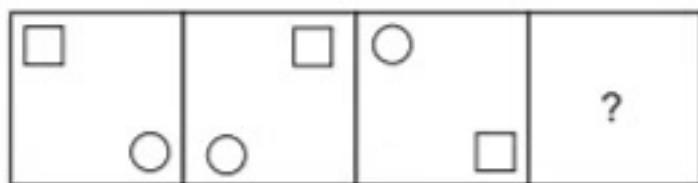
## 25. Question Figures



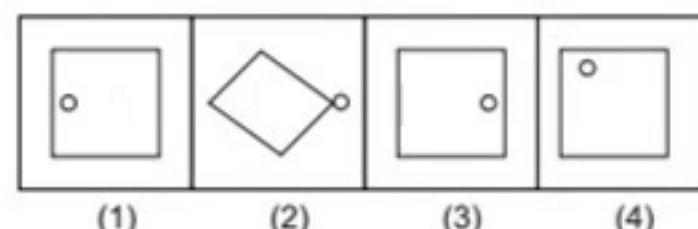
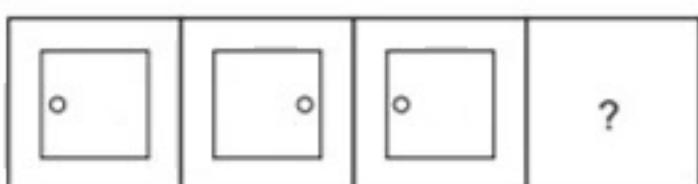
## Answer Figures



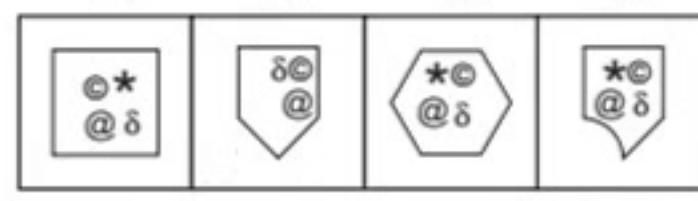
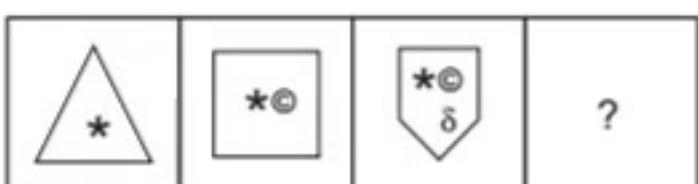
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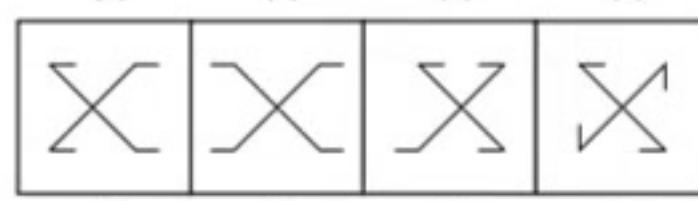
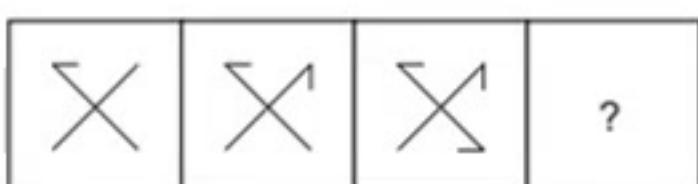
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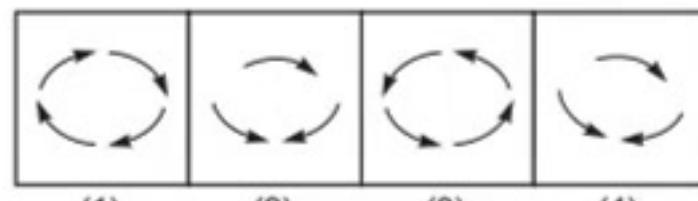
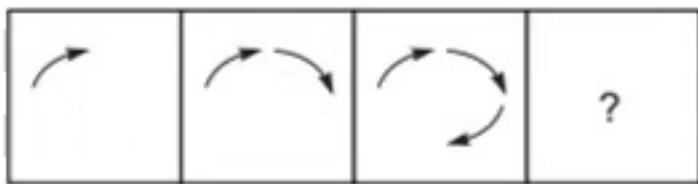
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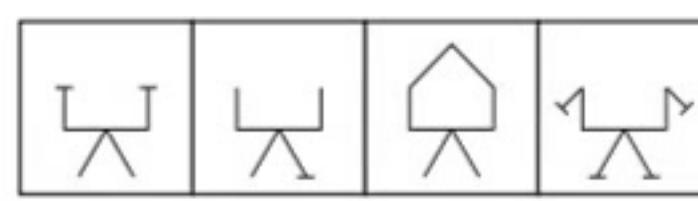
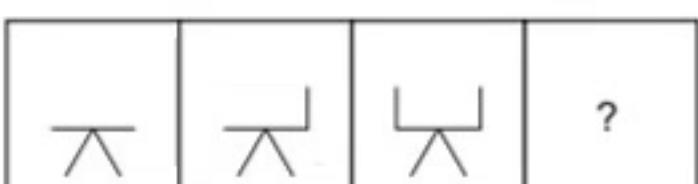
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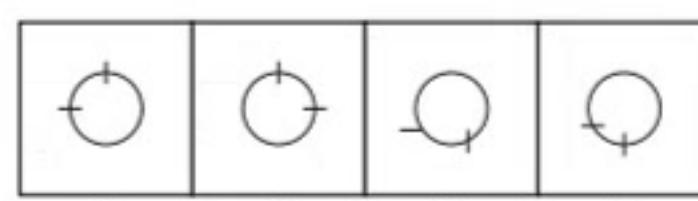
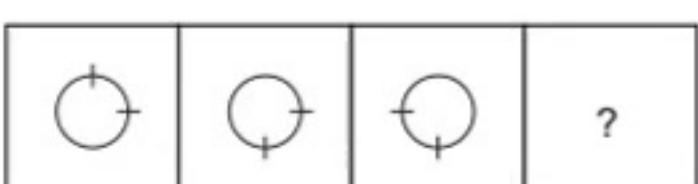
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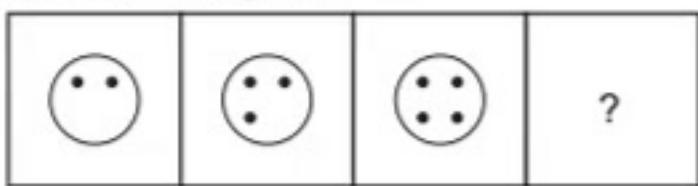
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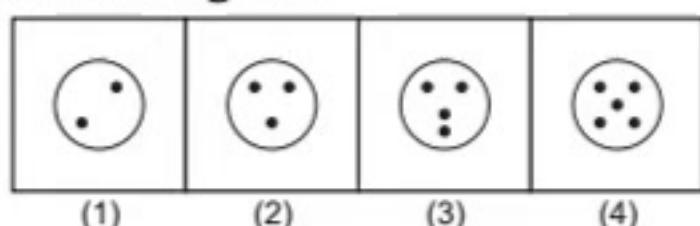
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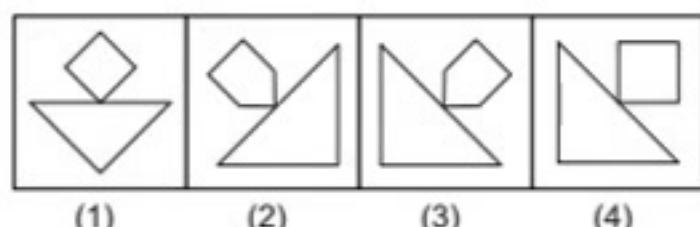
## 33. Question Figures



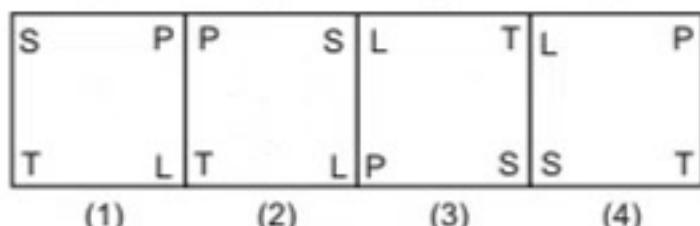
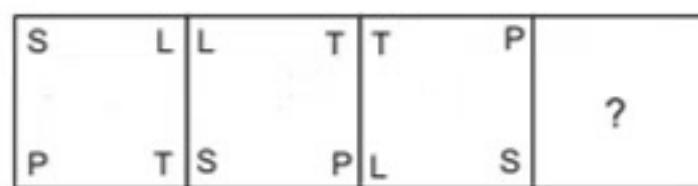
## Answer Figures



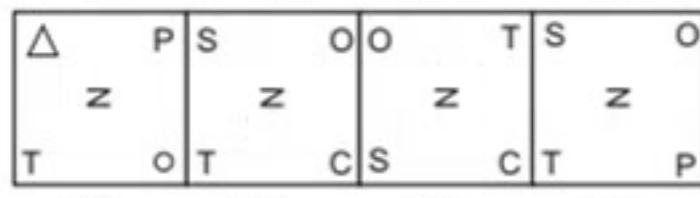
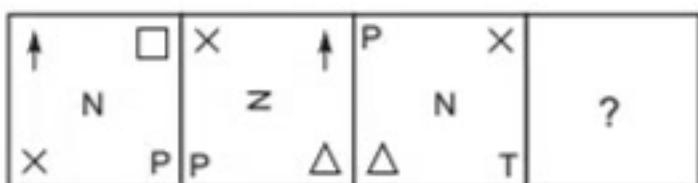
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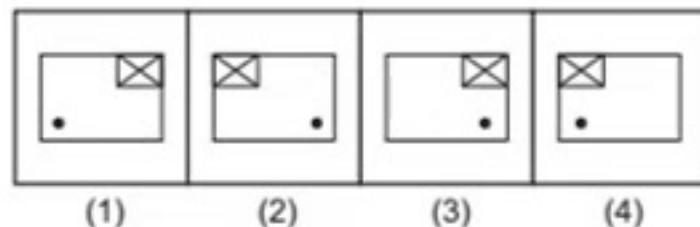
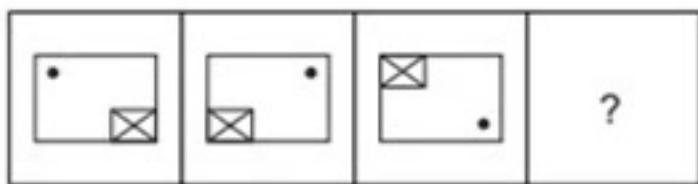
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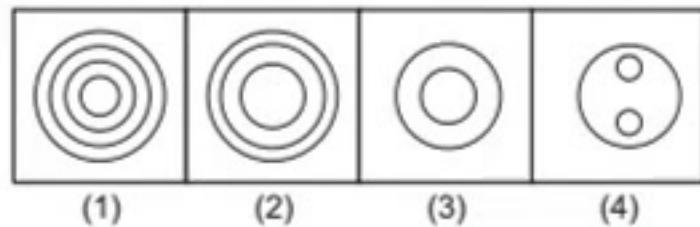
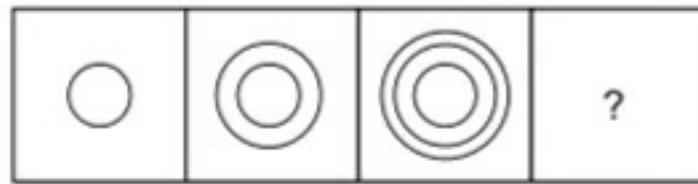
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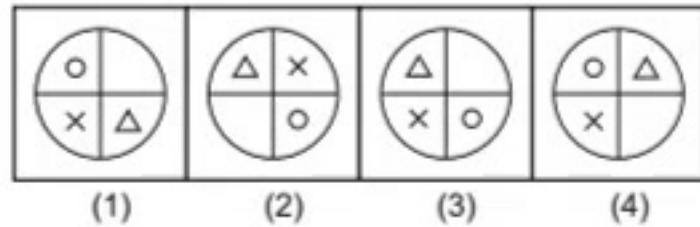
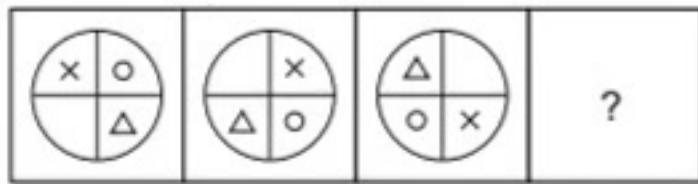
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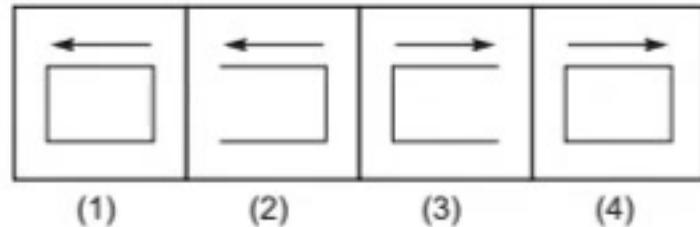
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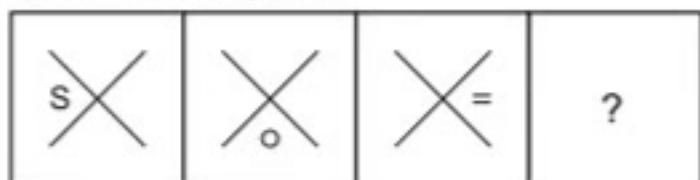
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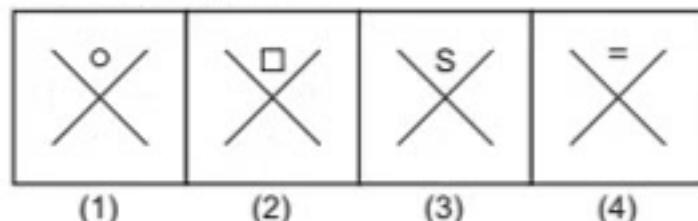
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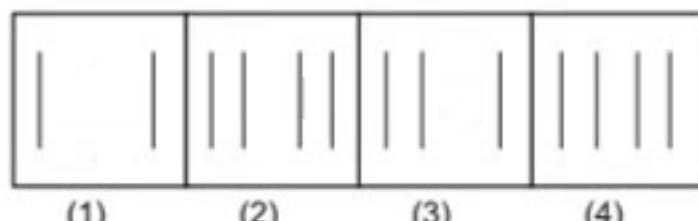
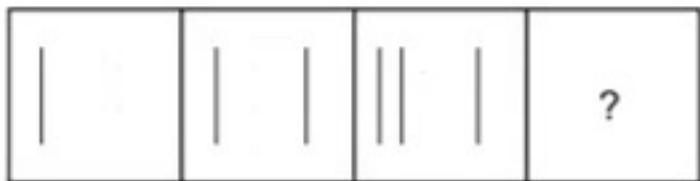
## 41. Question Figures



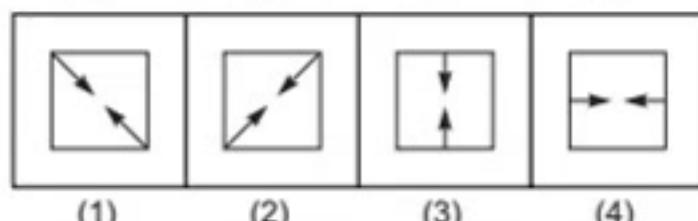
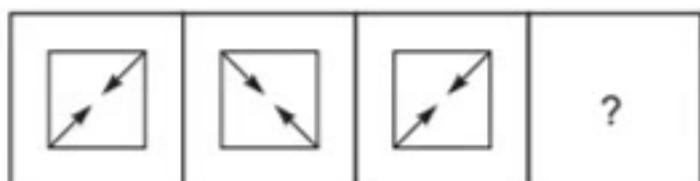
## Answer Figures



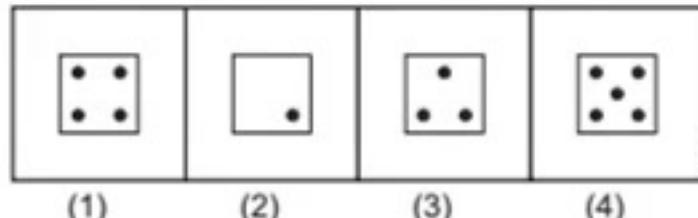
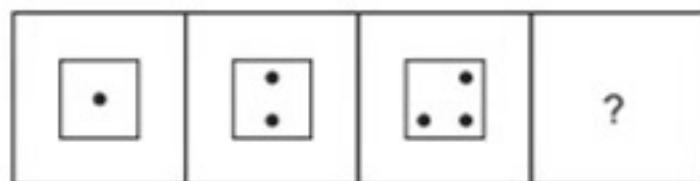
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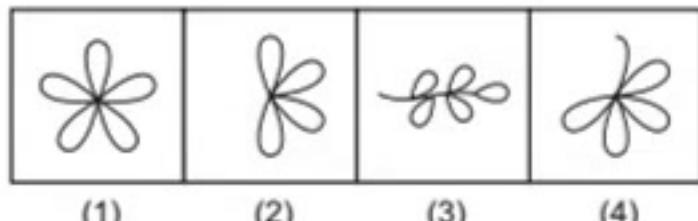
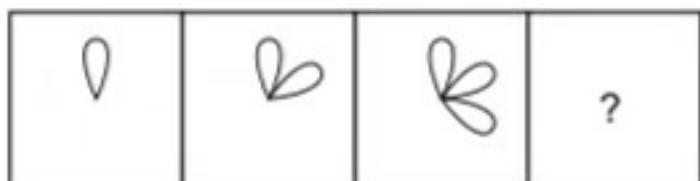
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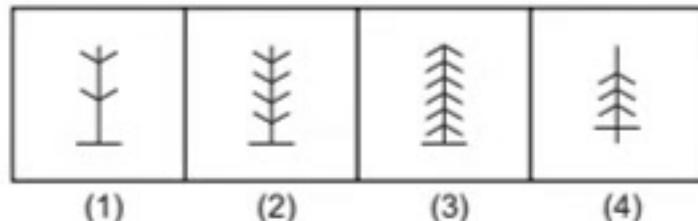
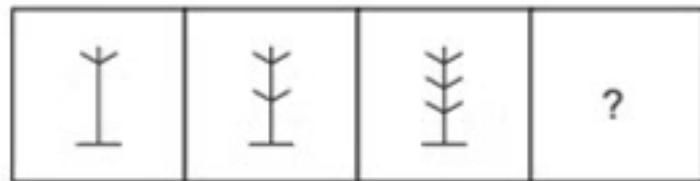
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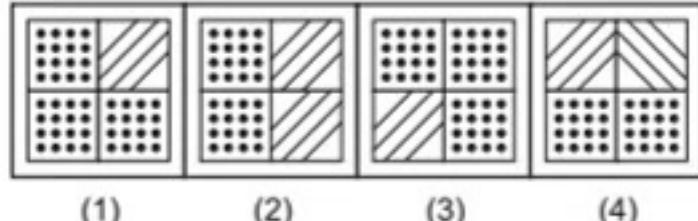
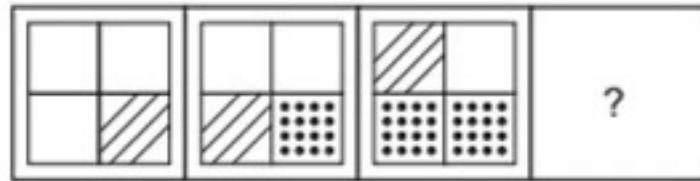
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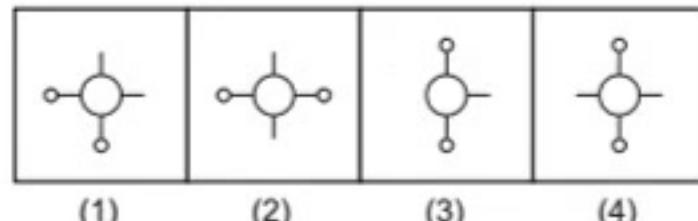
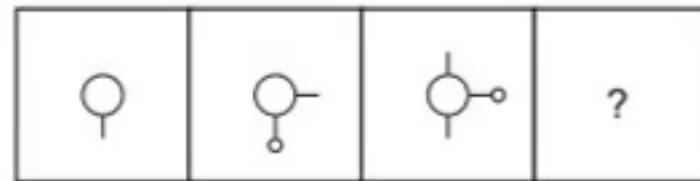
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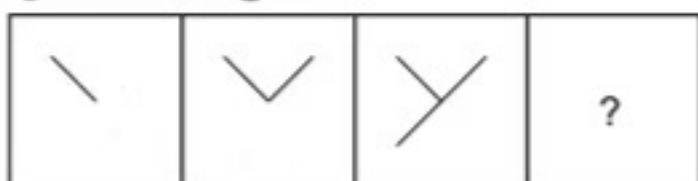
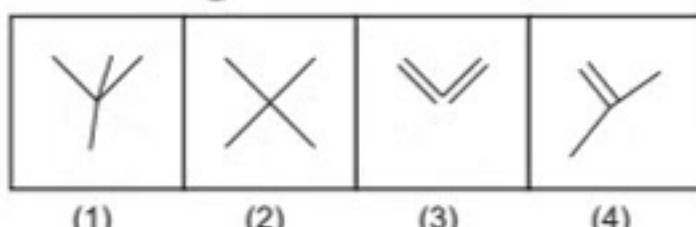
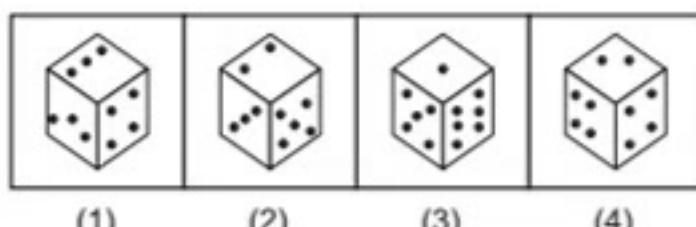
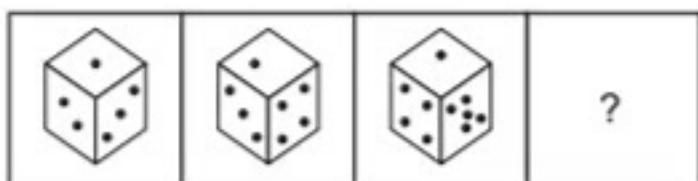


## 47.



## 48.



**49. Question Figures****Answer Figures****50.****Answers**

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

**Hints and Solutions**

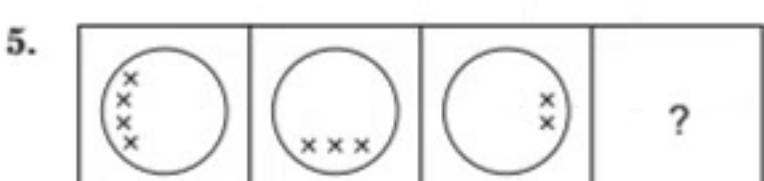
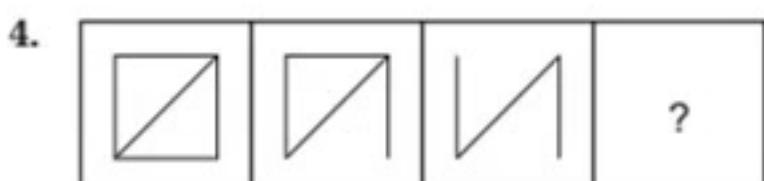
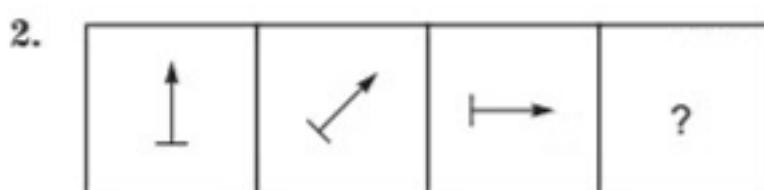
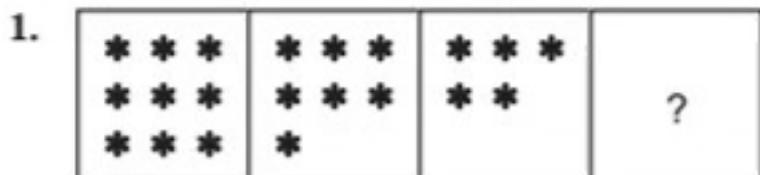
- In each successive figure, one dot and one line is increasing.
- From first to second figure, the pin at the bottom changes its direction. So, the arrow in third figure will change their position in fourth figure.
- The design is rotating  $90^\circ$  in anti-clockwise direction.
- Figure 1 is same as figure 3. Thus, the answer figure will be same as the figure 2.
- The design is moving  $90^\circ$  in clockwise direction.
- In question figures a pattern is being formed in which no line, one line and two lines are drawn from the vertex (vertices) of the square joining the circle. Therefore, answer figure (2) will occupy the blank space.
- The circle is moving in clockwise direction and circle is increasing by one in each successive figures.
- An arrow on the circle is moving  $90^\circ$  in clockwise direction, while the left side arrow is static on its place.
- One line is adding in the successive design and forming a new figure.
- The line inside of the rectangle is moving  $45^\circ$  in clockwise direction.
- In question figures one small line and a small unshaded and shaded circle is increasing alternately. Therefore, answer figure (1) will occupy the blank space.
- The question figure 1 is same as the question figure 3. Thus, the answer figure will be same as the question figure 2.
- The circle is increasing by one and moving in anti-clockwise direction in successive figure.
- The question figure 3 is the reverse of the question figure 1. Thus, the answer figure will be the reverse of the question figure 2.
- The question figure 1 is same as the question figure 3. Thus, the answer figure will be same as the question figure 2.
- In the question figures 1 and 3, the arrow is changing its place. So, the arrow is question figure 2 will change its Position in answer figure.
- Question figures 1, 2 and 3 are being turned in clockwise direction. Therefore, answer figure (4) will occupy the blank space.
- In the figure, the design  $\uparrow$  is moving  $45^\circ$  in clockwise direction and  $\downarrow$  is moving  $90^\circ$  in anti-clockwise direction.

- 19.** The triangle is rotating  $45^\circ$  in clockwise direction with sequence of white to black.
- 20.** From figure 1 to 2 the signs are exchanging its place in the group of two similar pattern will be followed by third figure to get answer figure.
- 21.** The line is increasing by 3 and 4 in the successive figure.
- 22.** In the question figure 1 and 3, the arrow is inverting and turns perpendicularly.
- 23.** All the signs are moving in a proper sequence and a new sign is added at left hand corner each time.
- 24.** The question figure 3 is same as the question figure 1. Thus, the answer figure will be same as the question figure 2.
- 25.** The figure and designs are deleted subsequently.
- 26.** Both designs are moving from one corner to other in clockwise direction.
- 27.** The sign 'O' is shifted to opposite direction.
- 28.** One line is increasing in geometrical figure and one new design comes inside the geometrical figure.
- 29.** One line is adding in clockwise direction in the design.
- 30.** One curved line is adding in clockwise direction.
- 31.** One line is adding subsequently in the design.
- 32.** Cutting lines of the circle are moving  $90^\circ$  in clockwise direction.
- 33.** The number of black dots are increasing by one in each step.
- 34.** The figure is moving  $90^\circ$  in clockwise direction and a line is added.
- 35.** The latters (S, P, T, L) are moving one side in anti-clockwise direction.
- 36.** In each subsequent figure, the central design rotates  $90^\circ$  on its place and the other designs are moving from one corner to other in clockwise direction and a new design comes button right corner.
- 37.** Two designs ( $\bullet$ ,  $\boxtimes$ ) are moving from one corner to other in clockwise direction.
- 38.** In each successive figure one circle increases.
- 39.** The designs are moving  $90^\circ$  in clockwise direction.
- 40.** In each successive figure one line is increasing in clockwise direction and the arrow at the top is reserved.
- 41.** Design is moving  $90^\circ$  in anti-clockwise direction and each time a new figure formed.
- 42.** In each step one line is added to the left and right alternatively.
- 43.** The question figure 3 is same as the question figure 1. Thus, the answer figure will be same as the question figure 2.
- 44.** Black dot in the square are increasing by one.
- 45.** Petals are increasing by one in the design.
- 46.** In the design, the lines are increasing by two.
- 47.** The design is moving  $90^\circ$  in clockwise direction and one new design with 16 dots is adding.
- 48.** The design is moving  $90^\circ$  in anti-clockwise direction and a new design is adding one by one.
- 49.** One new line is adding in the design to form the sign 'X'.
- 50.** The top face of dice remains same while in other two faces one dot is increasing.

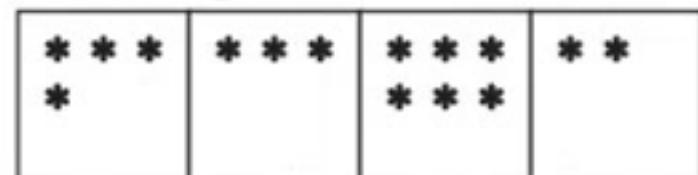
## Self Practice

**Directions (Q. Nos. 1–24)** In the following questions, question figures are given on the left side. These question figures are in a series. Choose the figure out of the answer figures given on the right side which may complete the series.

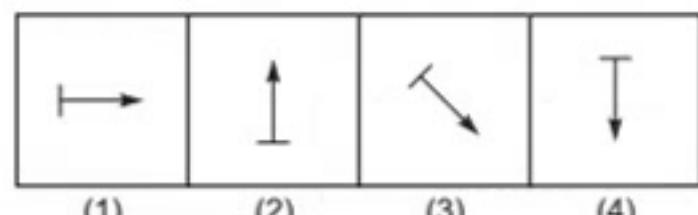
**Question Figures**



**Answer Figures**



(1) (2) (3) (4)



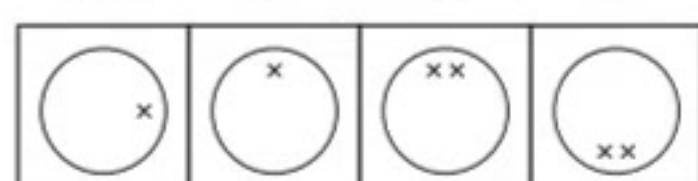
(1) (2) (3) (4)



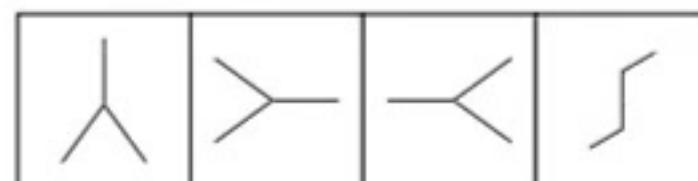
(1) (2) (3) (4)



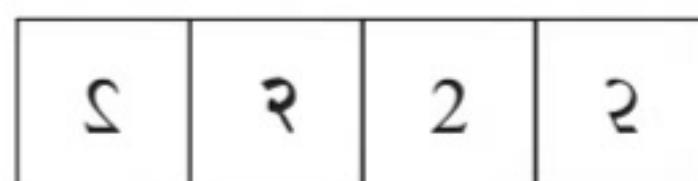
(1) (2) (3) (4)



(1) (2) (3) (4)

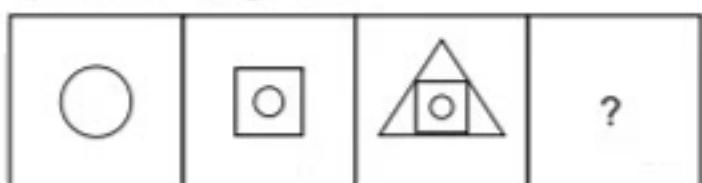


(1) (2) (3) (4)

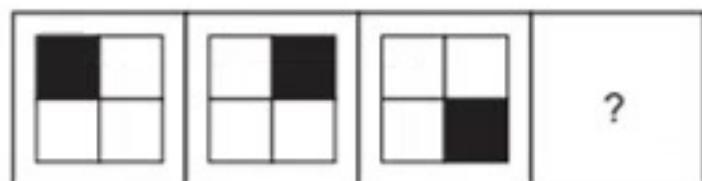


(1) (2) (3) (4)

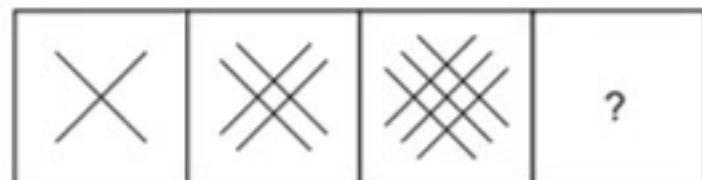
## 8. Question Figures



9.



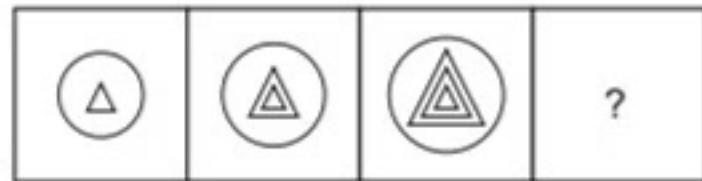
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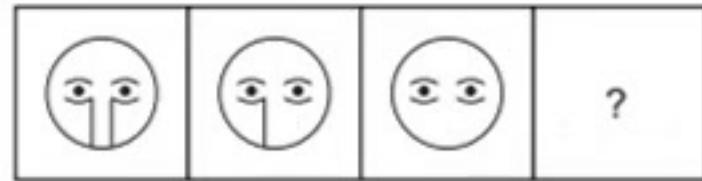
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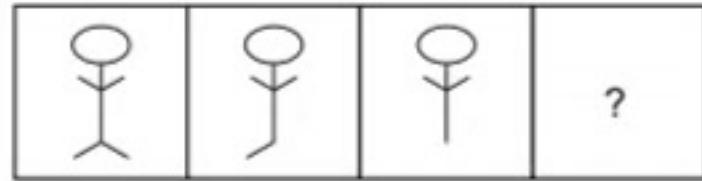
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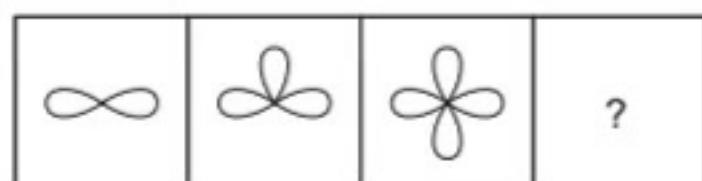
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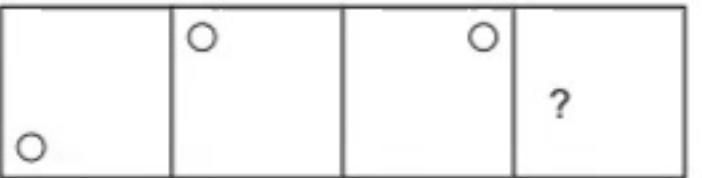
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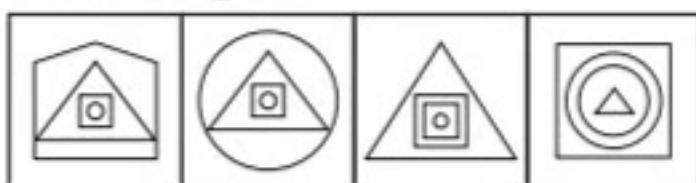
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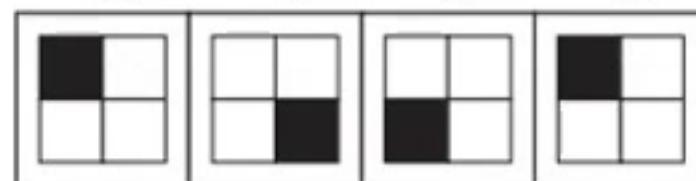
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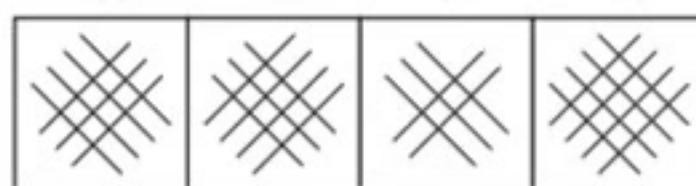
## Answer Figures



(1) (2) (3) (4)



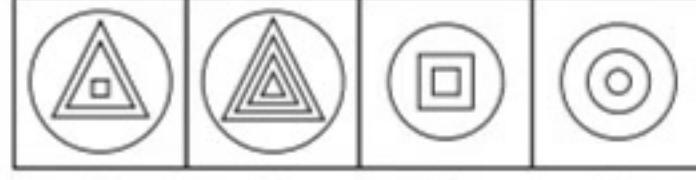
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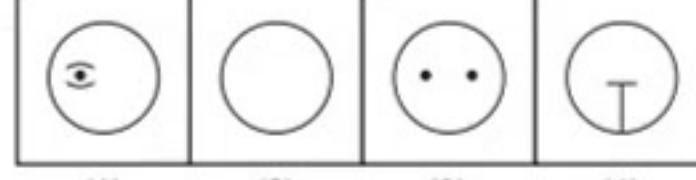
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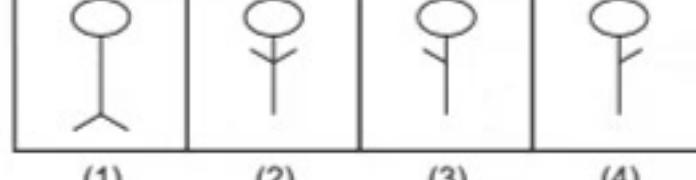
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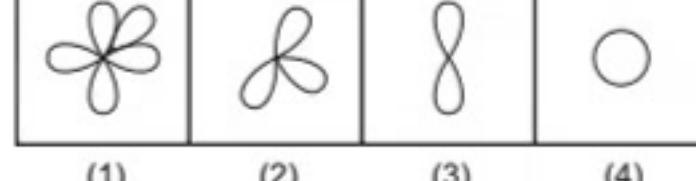
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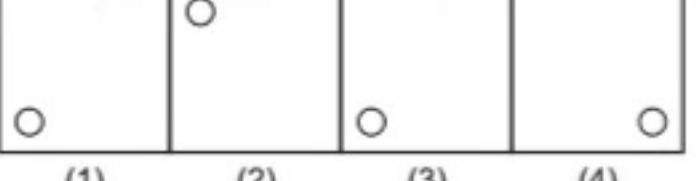
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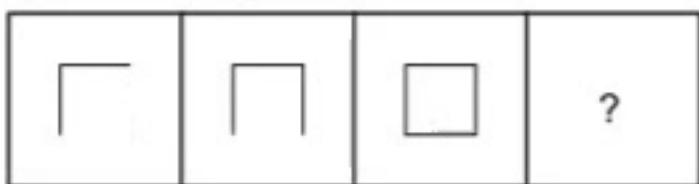
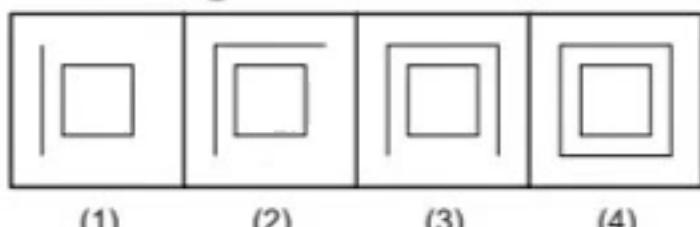
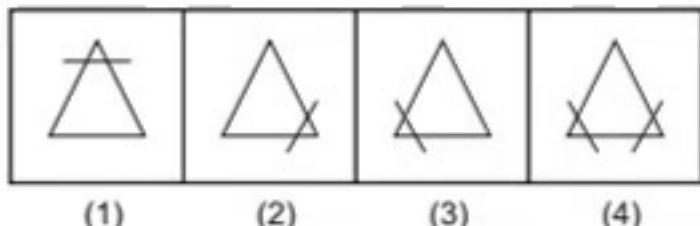
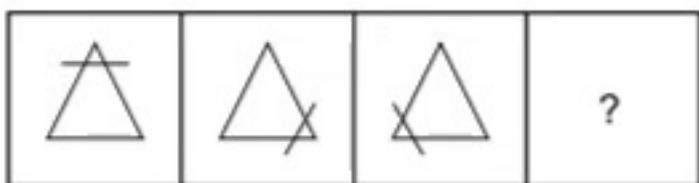
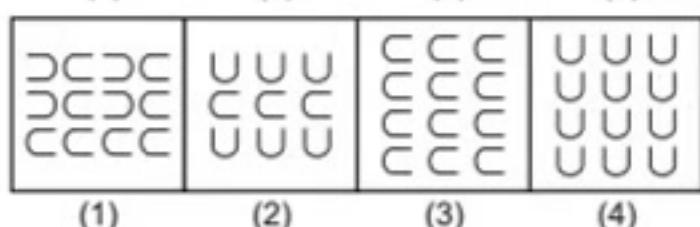
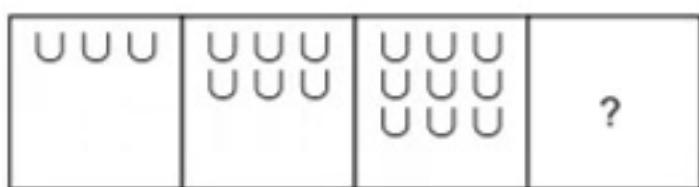
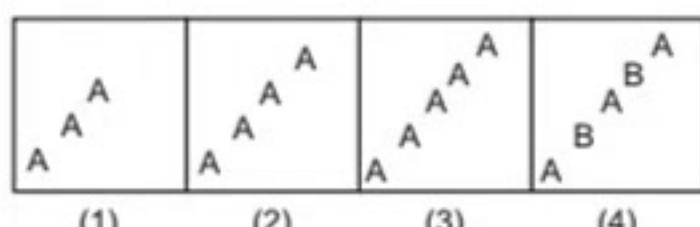
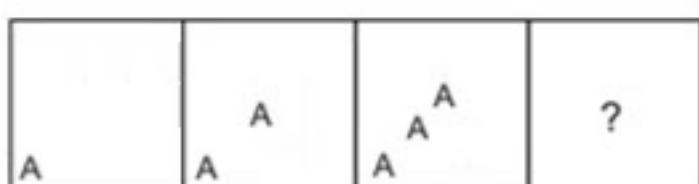
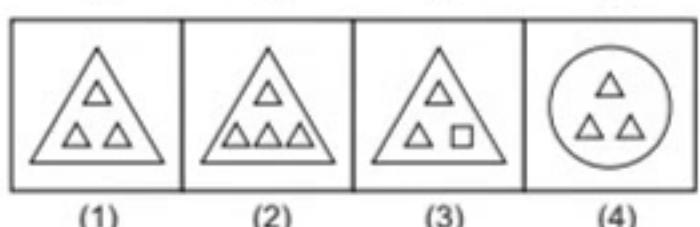
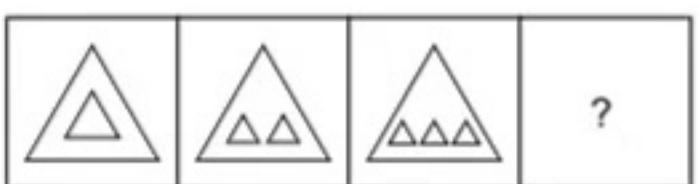
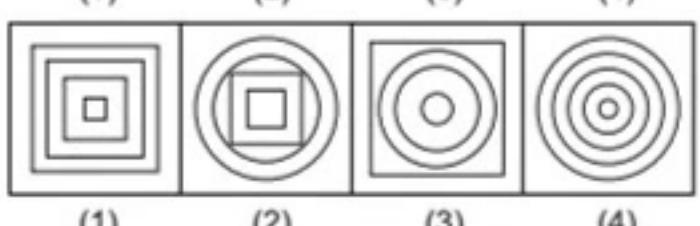
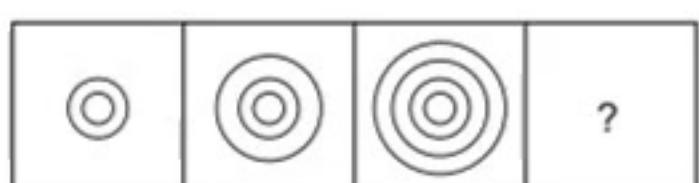
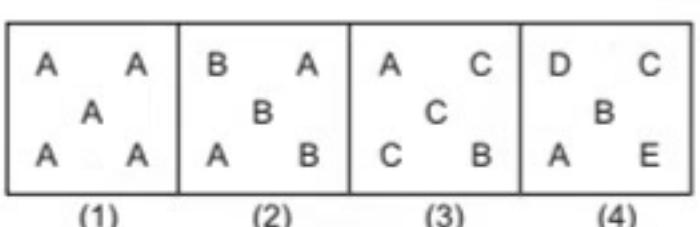
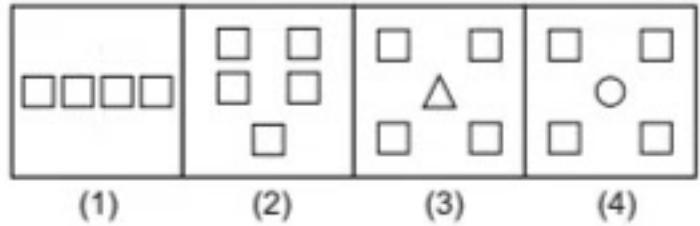
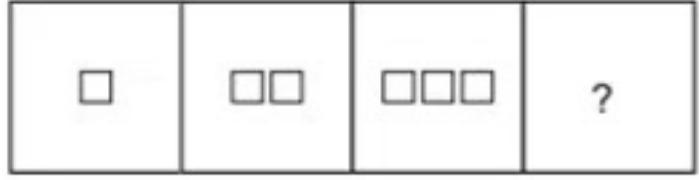
(1) (2) (3) (4)



(1) (2) (3) (4)



(1) (2) (3) (4)

**17. Question Figures****Answer Figures****18.****19.****20.****21.****22.****23.****24.****Answers**

<b>1</b> (2)	<b>2</b> (3)	<b>3</b> (1)	<b>4</b> (3)	<b>5</b> (2)	<b>6</b> (1)	<b>7</b> (1)	<b>8</b> (1)	<b>9</b> (3)	<b>10</b> (4)
<b>11</b> (1)	<b>12</b> (2)	<b>13</b> (1)	<b>14</b> (3)	<b>15</b> (1)	<b>16</b> (4)	<b>17</b> (1)	<b>18</b> (1)	<b>19</b> (4)	<b>20</b> (2)
<b>21</b> (2)	<b>22</b> (4)	<b>23</b> (1)	<b>24</b> (1)						

# CHAPTER 05

# ANALOGY

Analogy refers to ‘correspondence’ or similarity. It is also known as relationship test. In this type, the question figure consists of two sets. Each set has two frames separated by the sign of colon (:). The second set is separated by the sign of (::) from first set. The figures in the first set bear a certain relationship with each other. You have to choose, from the set of answer figures one figure bearing the same relationship to the third figure as there is in the first part of two figures.

Students, while solving these questions must kept following points in mind.

- Look carefully the shape of designs.
- Analyse the rotation of designs.
- Look the mirror image of designs.
- Look carefully the side of designs.
- Look carefully the addition/deletion of designs.
- Look the replacement and rearrangement of designs.

*In this chapter, the changes between figures are based on following*

- Based on size    • Based on position change    • Based on number of side    • Based on rotation

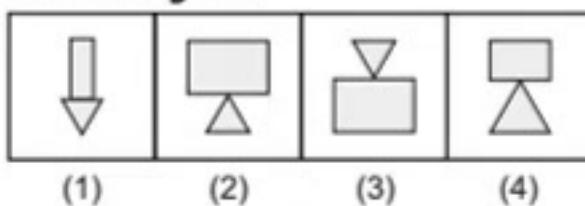
## Type I Based on Size

In this type, larger design becomes smaller and smaller design becomes larger.

Example 1. Question Figures



Answer Figures



Sol. (2) From question figure (1) to (2) bottom large design becomes small and upper small design becomes large. Similar rule will follow from the question figure (3) to answer figure (2).

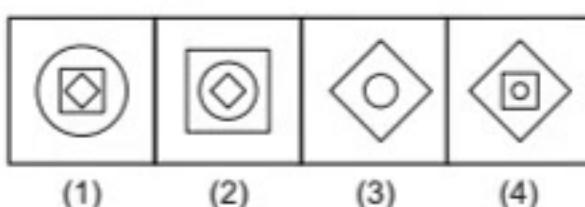
## Type II Based on Position Change

In this type, the shapes change their positions with each other.

Example 2. Question Figures



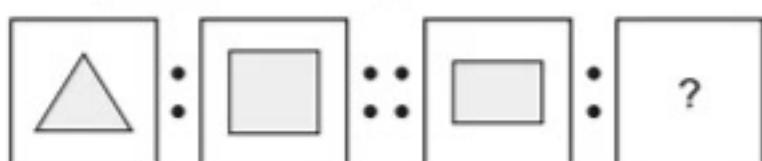
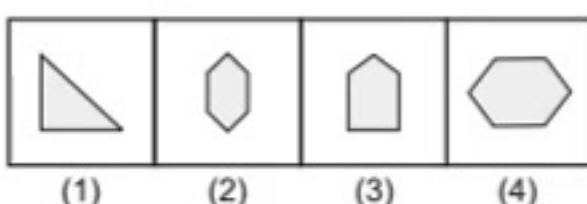
Answer Figures



Sol. (1) From question figure first to second, the innermost shape becomes outermost and the outermost shape becomes innermost. The middle figure has no change. Hence, following the same pattern answer figure (2) will complete the second pair.

**Type III Based on Number of Sides**

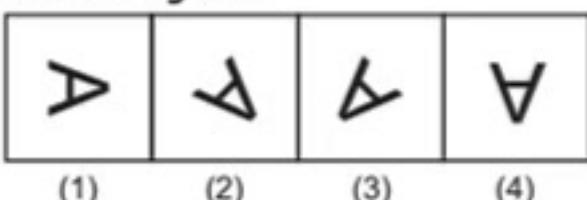
In this type, the number of sides of geometrical figure increases or decreases.

**Example 3. Question Figures****Answer Figures**

Sol. (3) From question figure (1) to (2), triangle becomes square one i.e. one side increases. Similar, rule will follow from question figure (3) to answer figure (3).

**Type IV Based on Rotation**

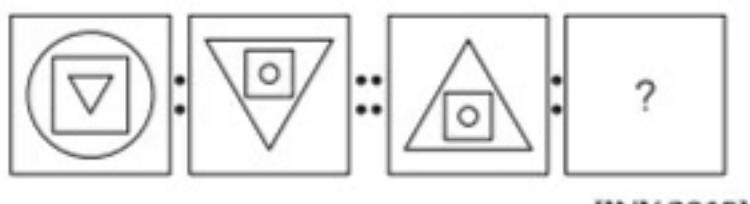
In this type, designs rotate through a certain angle either in clockwise direction or in anti-clockwise direction.

**Example 4. Question Figures****Answer Figures**

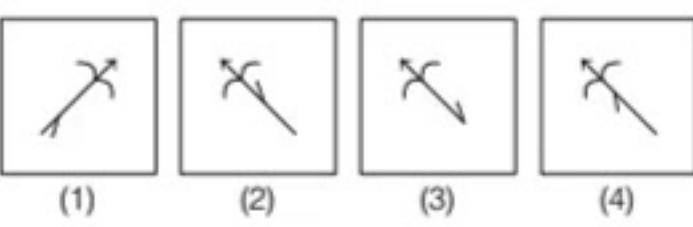
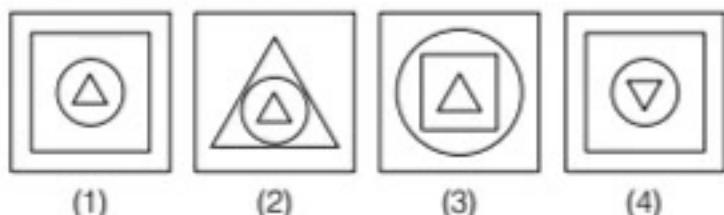
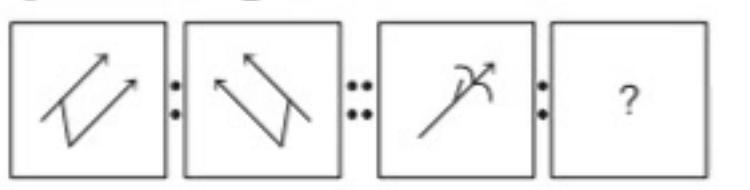
Sol. (4) From question figure (1) to (2), whole design rotates  $135^\circ$  in anti-clockwise direction. Similar rule will follow from question figure (3) to answer figure (4).

## Entrance Corner

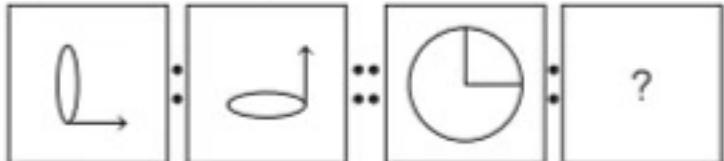
**Directions (Q. Nos. 1-34)** In the following questions, the first two figures in the question figures are related to each other in same way. The same relationship holds between the third figure of the question figure and one of the answer figures 1, 2, 3 and 4. Identify the figure, which can replace the question mark (?).

**1. Question Figures**

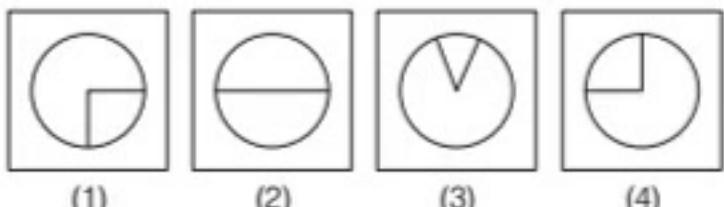
[JNV 2019]

**Answer Figures****Answer Figures****2. Question Figures**

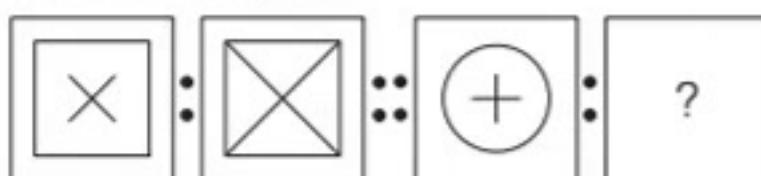
[JNV 2019]

**3. Question Figures**

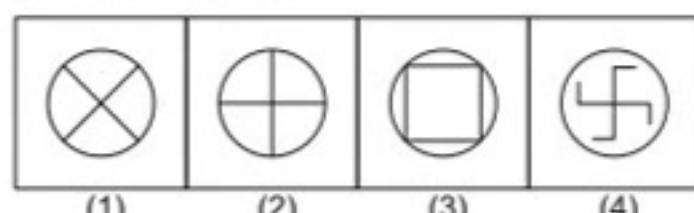
[JNV 2019]

**Answer Figures**

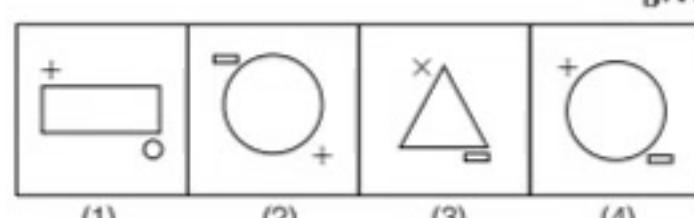
## 4. Question Figures



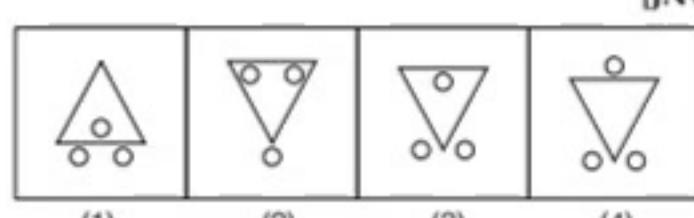
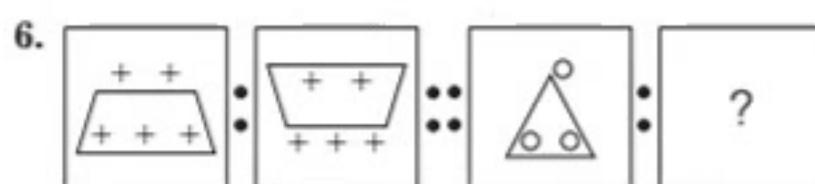
## Answer Figures



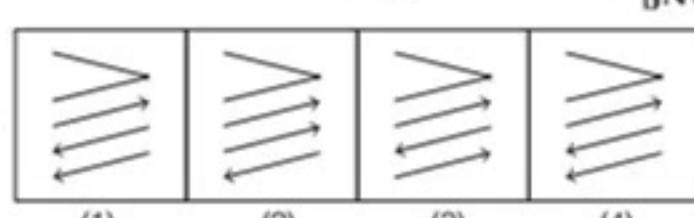
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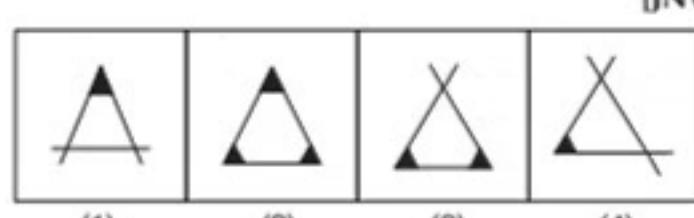
[JNV 2018]



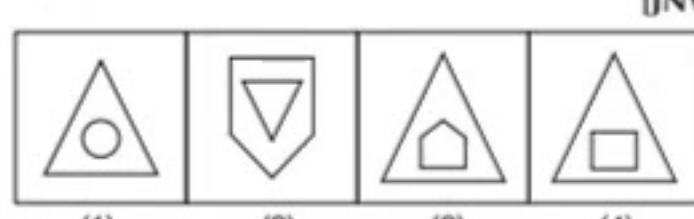
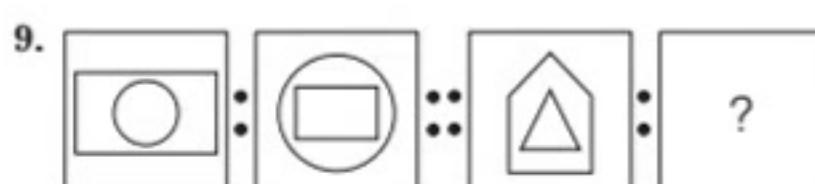
[JNV 2018]



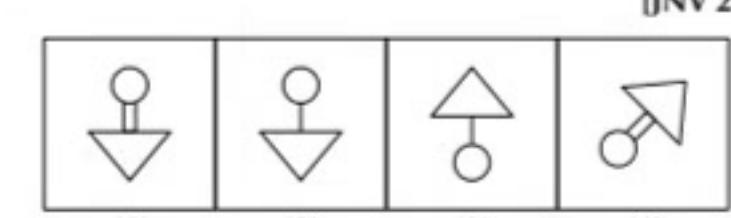
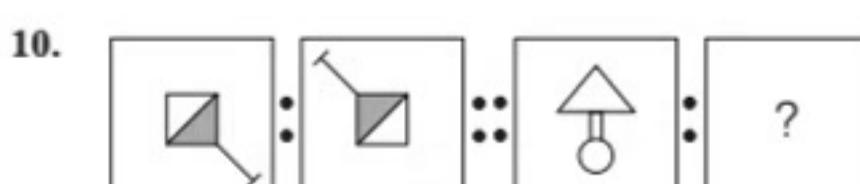
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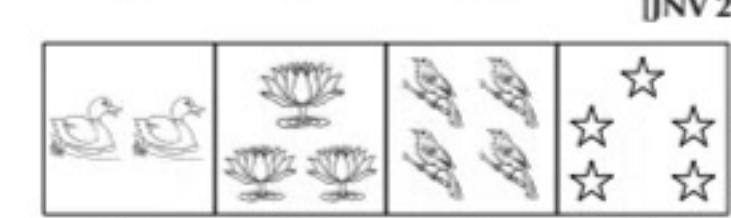
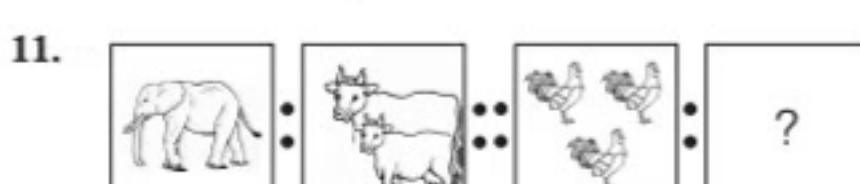
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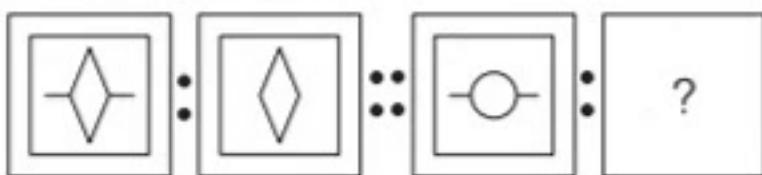
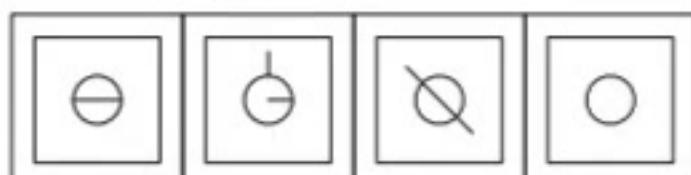
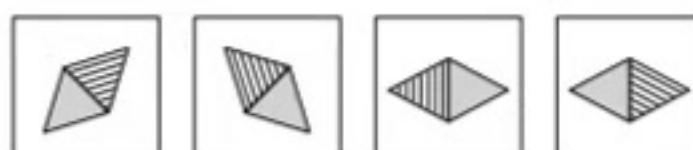
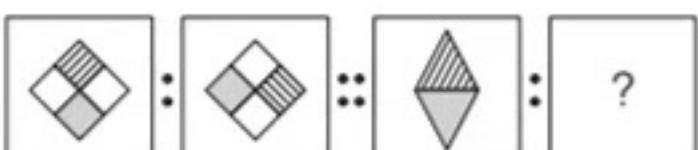
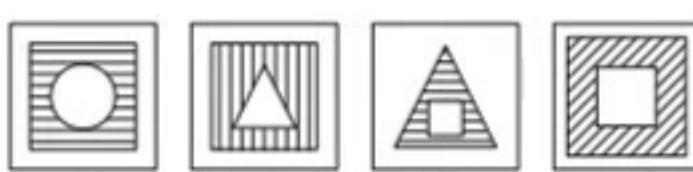
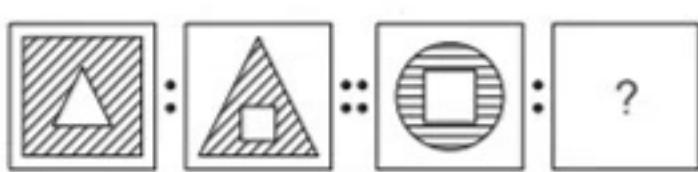
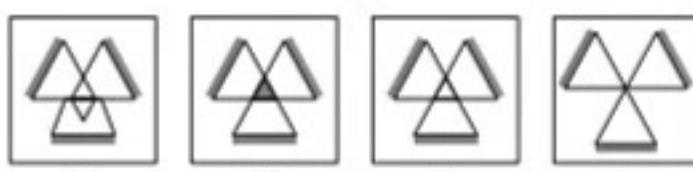
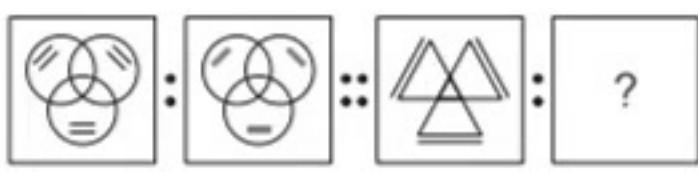
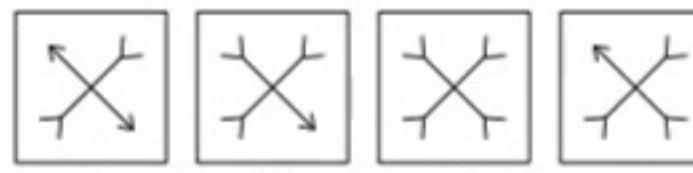
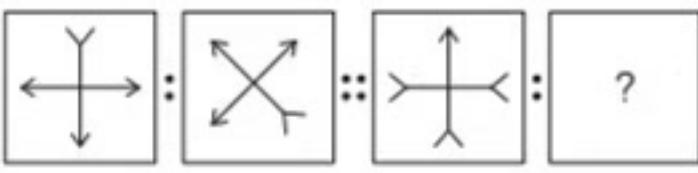
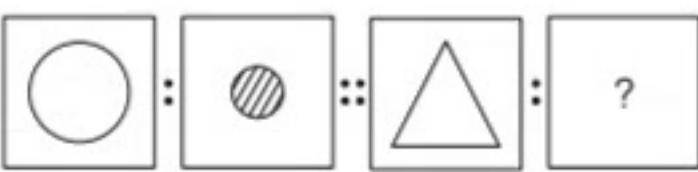
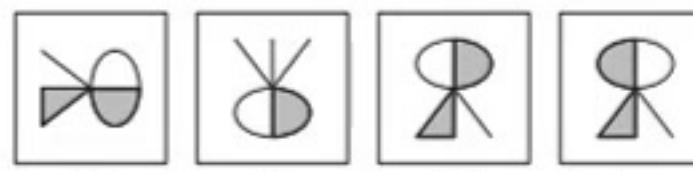
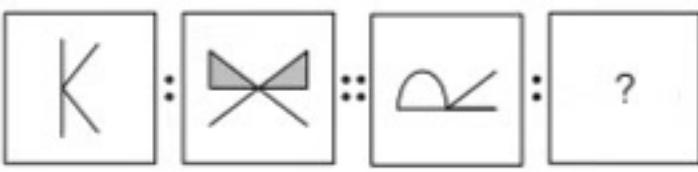
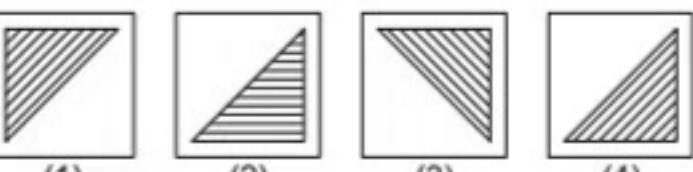
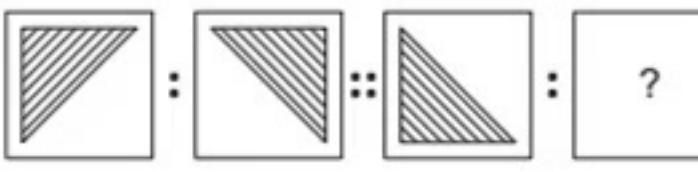
[JNV 2018]



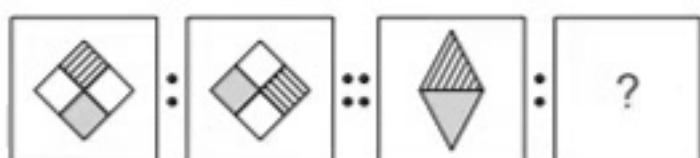
[JNV 2017]



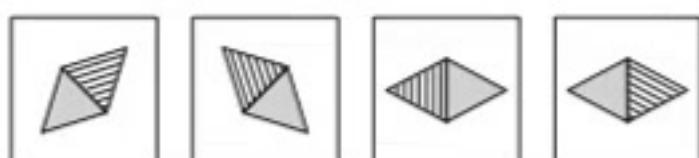
[JNV 2017]

**12. Questions Figures****Answer Figures**(1) (2) (3) (4)  
[JNV 2017]**13.**(1) (2) (3) (4)  
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[JNV 2016]**15.**(1) (2) (3) (4)  
[JNV 2016]**16.**(1) (2) (3) (4)  
[JNV 2015]**17.**(1) (2) (3) (4)  
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[JNV 2015]**19.**(1) (2) (3) (4)  
[JNV 2014]

## 13. Problem Figures

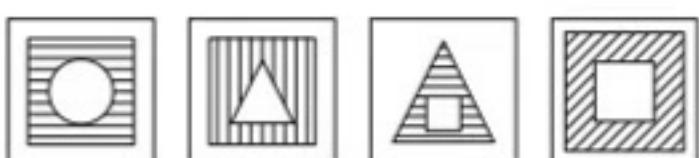
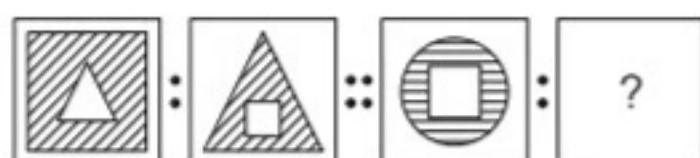


## Answer Figures



[JNV 2016]

14.



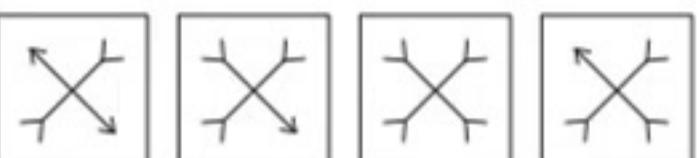
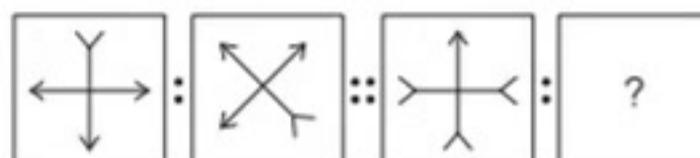
[JNV 2016]

15.



[JNV 2016]

16.



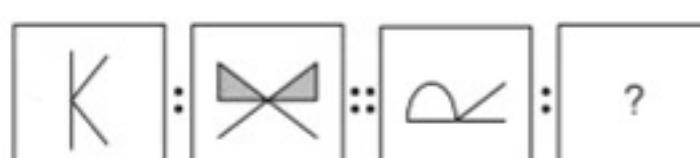
[JNV 2015]

17.



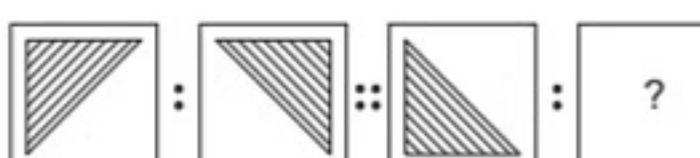
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18.



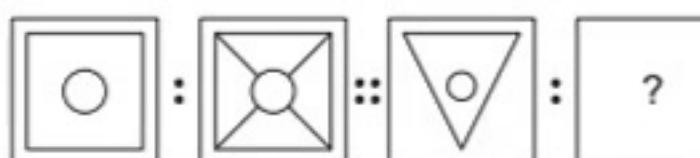
[JNV 2015]

19.



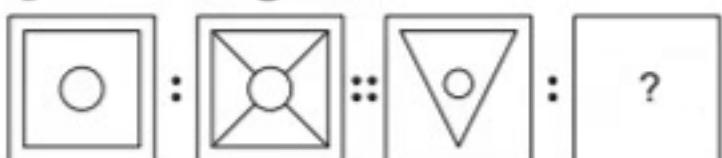
[JNV 2014]

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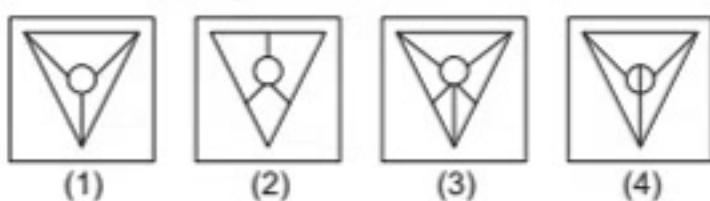


[JNV 2014]

## 20. Questions Figures

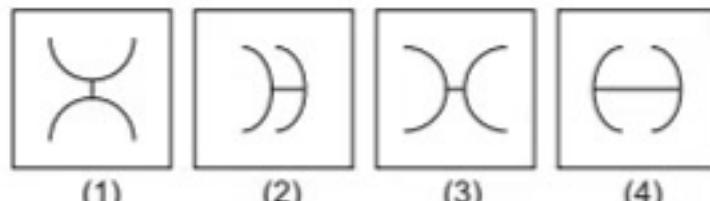


## Answer Figures



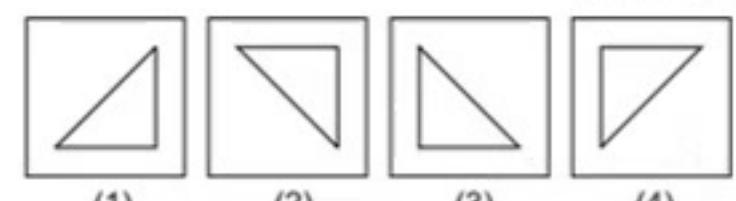
[JNV 2014]

## 21.



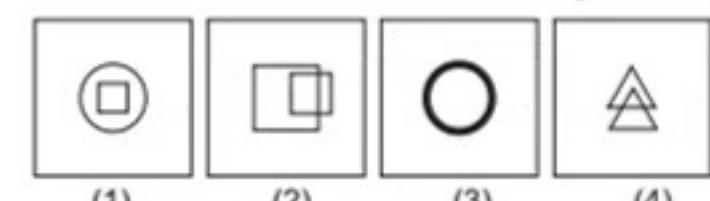
[JNV 2013]

## 22.



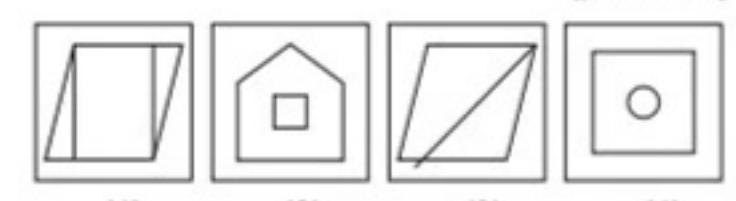
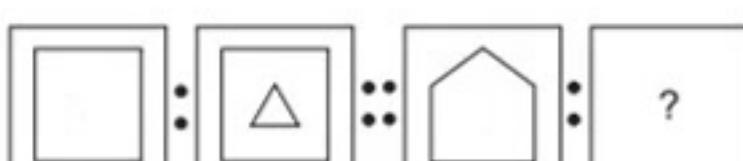
[JNV 2013]

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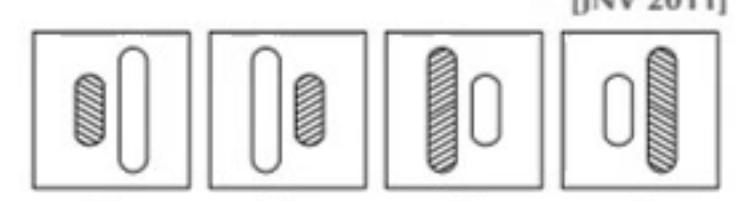
[JNV 2012]

## 24.



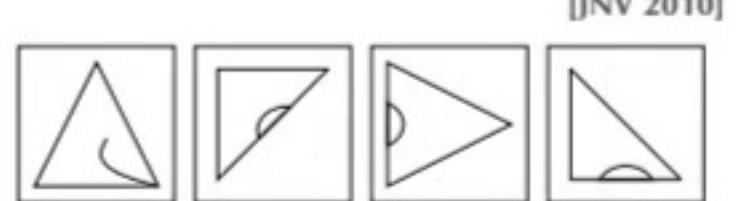
[JNV 2011]

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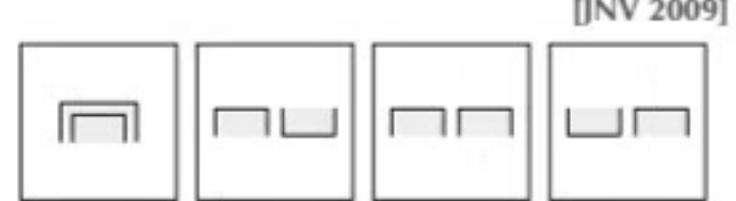
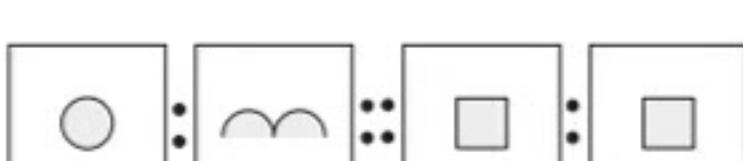
[JNV 2010]

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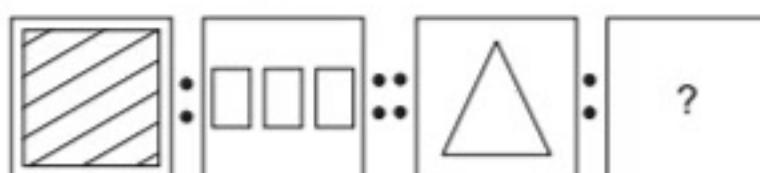
[JNV 2009]

## 27.



[JNV 2008]

## 28. Questions Figures



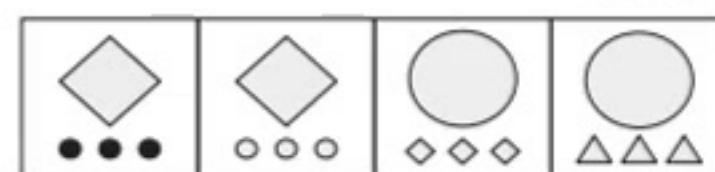
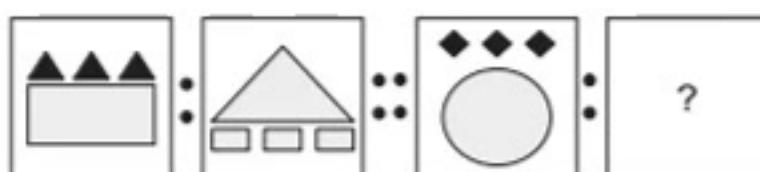
## Answer Figures



(1) (2) (3) (4)

[JNV 2007]

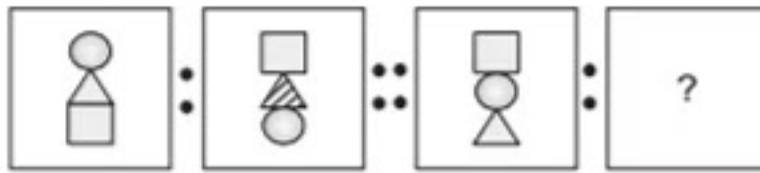
29



(1) (2) (3) (4)

[JNV 2007]

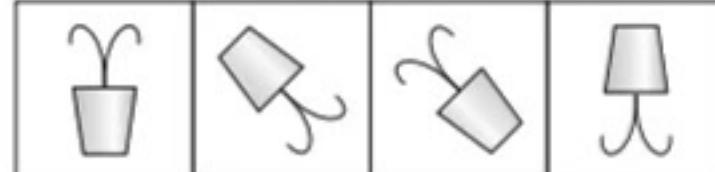
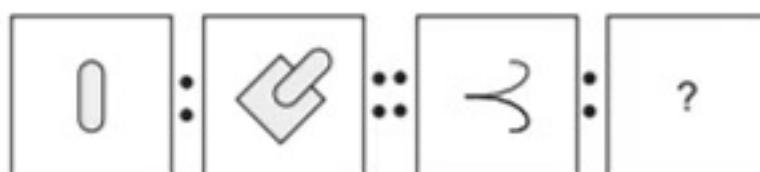
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(1) (2) (3) (4)

[JNV 2005]

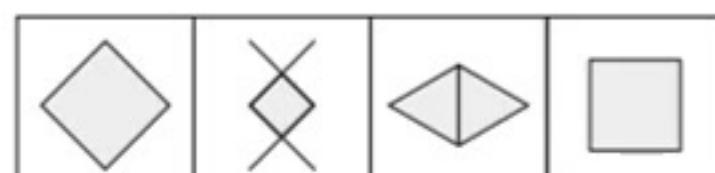
31.



(1) (2) (3) (4)

[JNV 2004]

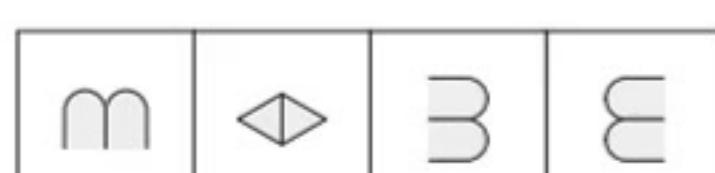
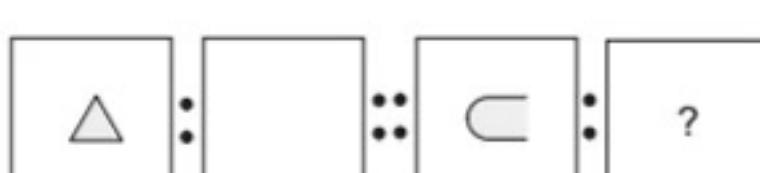
32.



(1) (2) (3) (4)

[JNV 2003]

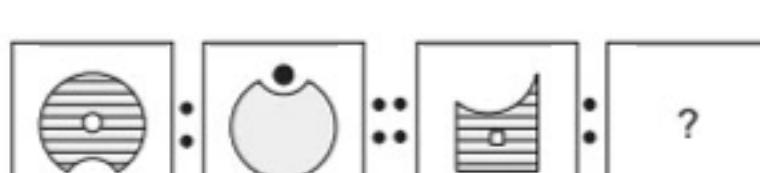
33.



(1) (2) (3) (4)

[JNV 2002]

34.



(1) (2) (3) (4)

## Answers

1 (3)	2 (2)	3 (4)	4 (2)	5 (4)	6 (3)	7 (2)	8 (2)	9 (3)	10 (1)
11 (3)	12 (4)	13 (4)	14 (1)	15 (3)	16 (2)	17 (2)	18 (4)	19 (4)	20 (1)
21 (4)	22 (1)	23 (2)	24 (2)	25 (1)	26 (2)	27 (3)	28 (3)	29 (2)	30 (2)
31 (2)	32 (3)	33 (4)	34 (1)						

## Hints and Solutions

1. The innermost element is enlarged and becomes the outermost element. The outermost element reduces in size and becomes the inner most element. Hence, figure (3) is the correct answer.
2. Second figure is the mirror image of first figure. Hence, answer figure (2) will replace the question mark.
3. From first figure to second figure, whole figure is rotated  $90^\circ$  anti-clockwise. Hence, answer figure (4) is correct choice.
4. From first figure to second the inner element is enlarged. Hence, answer figure (2) is the correct choice.
5. From first figure to second, upper element enlarged and becomes the middle element, lower element becomes upper element and middle element becomes lower element.
6. From first figure to second, whole figure rotates  $180^\circ$  and inner designs come outside and outer designs come inside.
7. Whole figure rotates  $90^\circ$  in Clockwise direction.
8. The corners of the geometrical figure become shaded and the enlarged edges removed.
9. Inner shape becomes outer and vice-versa
10. From question figure (1) to (2), whole figure rotates through  $180^\circ$ , the same changes occurs from question figure (3) to answer figure (1).
11. From question figure (1) to (2), there is an increment of one design, the same changes occurs from question figure (3) to the answer figure (3).
12. From question figure (1) to (2), the two smaller lines, adjoining main figure are disappeared, same changes occur from question figure (3) to answer figure (4).
13. The design is rotating  $90^\circ$  in clockwise direction.
14. From question figure (1) to (2) position of figures are inter-changed. Similar, rule follows from the question figure (3) to answer figure (1).
15. From question figure (1) to (2) lines become shaded. Similar, rule will follow from the question figure (3) to answer figure (3).
16. From question figure (1) to (2), whole design rotates  $135^\circ$  in clockwise direction. Similar, rule follows from question figure (3) to answer figure (2).
17. From question figure (1) to (2), circle becomes smaller and shaded. Similar, rule follows from question figure (3) to answer figure (2).
18. From question figure (1) to (2), whole figure rotates  $90^\circ$  clockwise direction and two shaded design comes to opposite it. Similar, rule follows from question figure (3) to answer figure (4).
19. Second figure is the mirror image of first figure.
20. Likewise circle is connected to all of the corners of squares. Similarly circle will be connected to all of the vertices of triangle.
21. From curved Question figure (1) to (2) curved lines go to opposite direction and middle small line becomes large. Similar rule follows from the question figure (3) to answer figure (4).
22. Second figure is the mirror image of first figure.
23. In first pair, first figure becomes double. Similarly, this rule follows in third figure.
24. From first figure to second, a geometrical shape with a lesser edge appears inside the design in first figure.
25. From question figure (1) to (2), lower element becomes upper and shaded. Similarly answer figure (1) will be obtained from question figure (3).
26. First figure is moving  $90^\circ$  clockwise to get the second figure. Similarly third figure is moving  $90^\circ$  clockwise get the fourth figure.
27. From question figure (1) to (2) whole design divides into two parts. Similar, rule follows from the question figure (3) to answer figure (3).

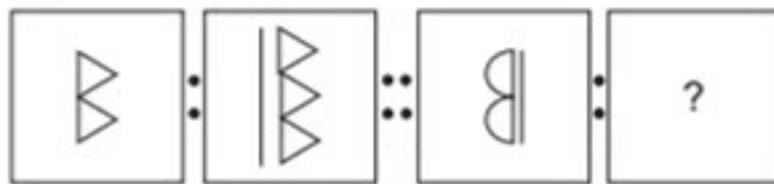
28. Larger figure becomes smaller and thrice in number. Also, shaded figure becomes unshaded and vice-versa.
29. Smaller figure becomes larger and vice versa. Single figure becomes thrice and vice-versa. Also, shaded figure becomes unshaded.
30. In question figures first and second the upper figure and lower figure interchange their positions and the middle figure becomes shaded. Answer figure (2) will occupy the blank space marked with the sign of interrogation.

31. The design is moving  $45^\circ$  in clockwise direction and a new larger design appears.
32. Both the half designs joined together to form a single design.
33. From first figure to second, similar design appears in opposite direction.
34. Whole figure is inverted and becomes unshaded. The smaller shape inside the main figure comes outside and becomes shaded.

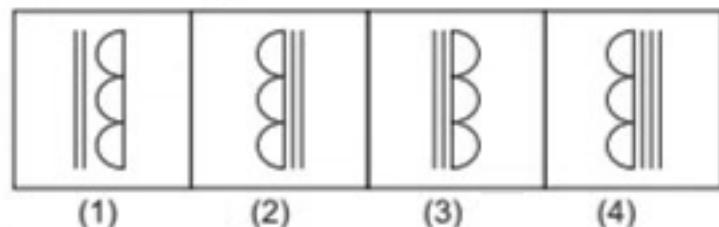
## Practice Exercise

**Directions (Q. Nos. 1-55)** In the following questions, the first two figures in the question figures are related to each other in same way. The same relationship holds between the third figure of the question figure and one of the answer figures 1, 2, 3 and 4 Identify the figure, which can replace the question mark (?).

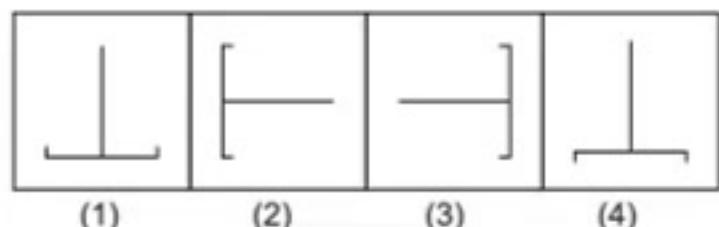
1. **Question Figures**



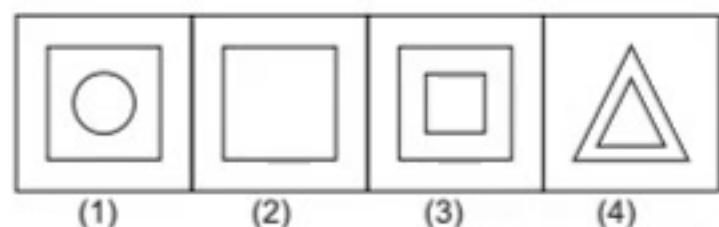
**Answer Figures**



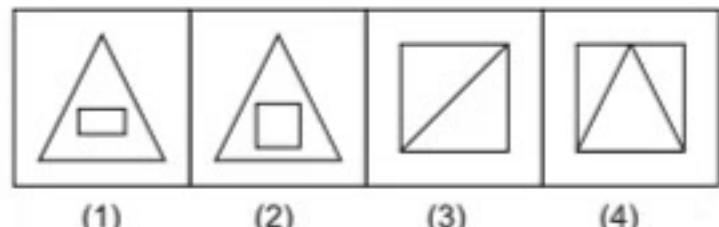
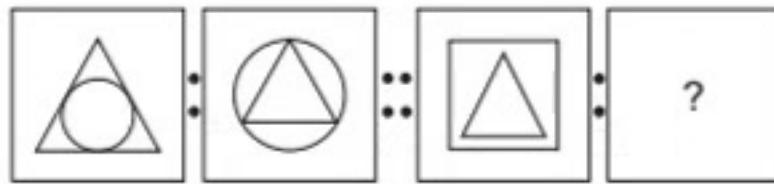
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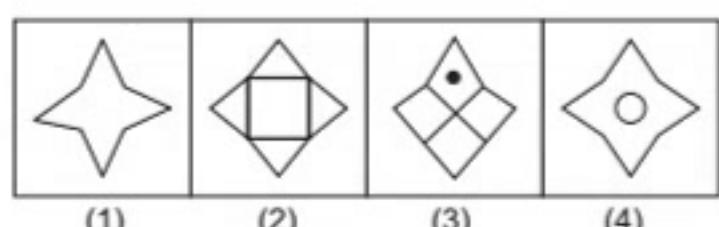
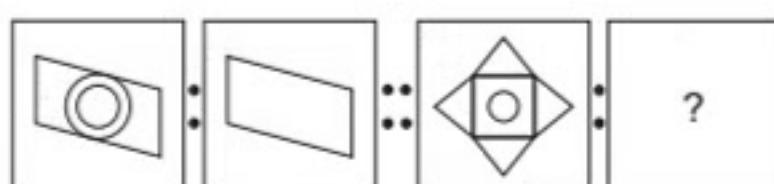
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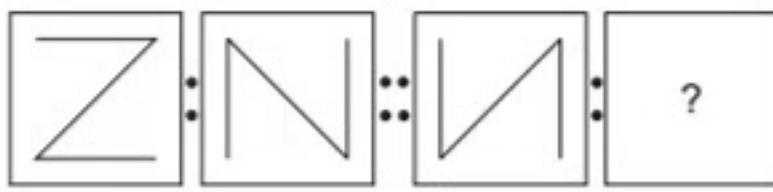
4.



5.



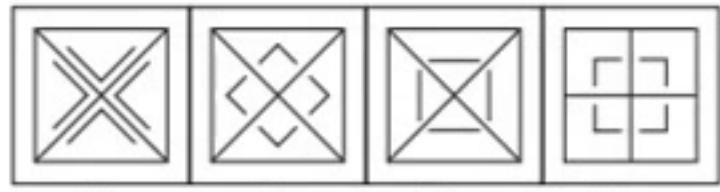
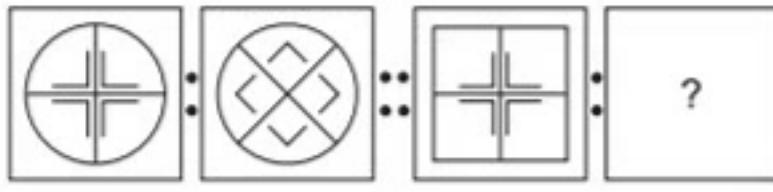
## 6. Question Figures



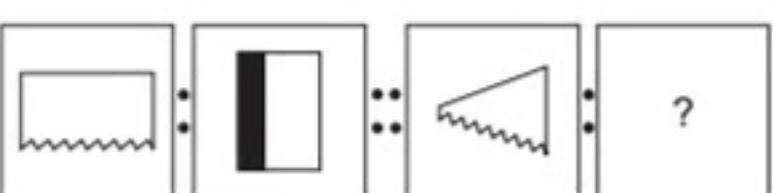
## Answer Figures



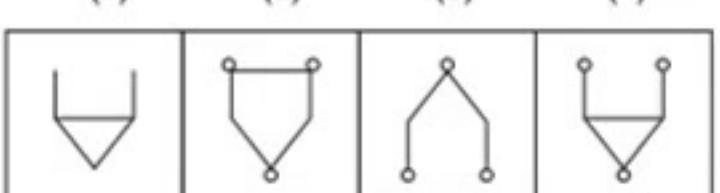
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8.



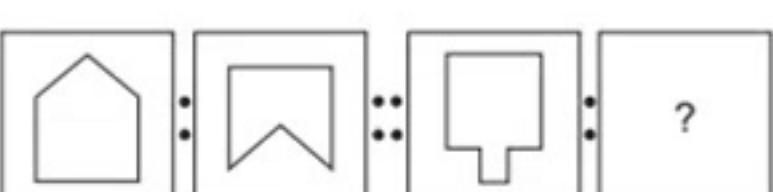
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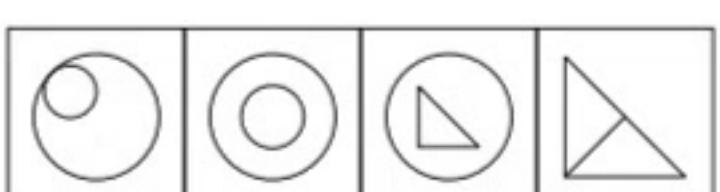
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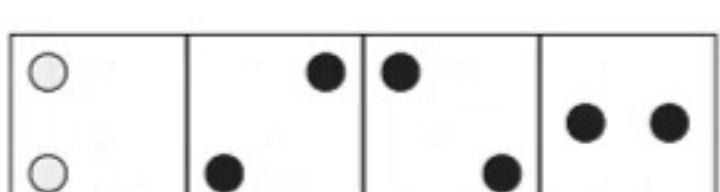
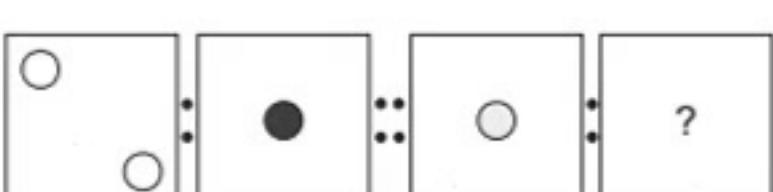
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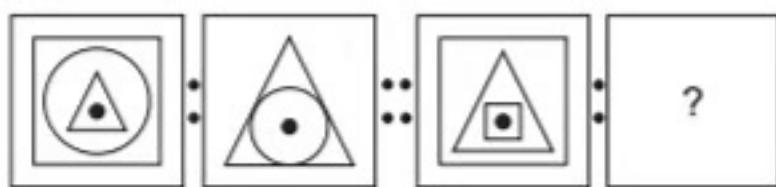
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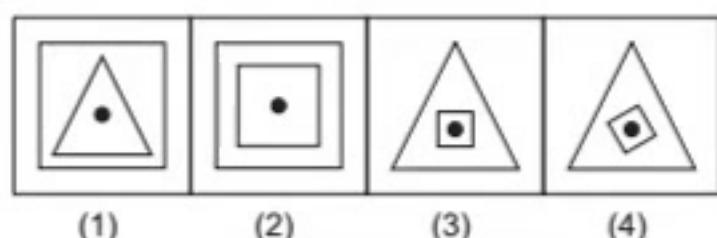
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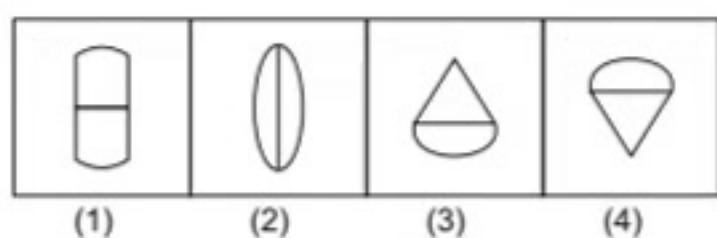
## 14. Question Figures



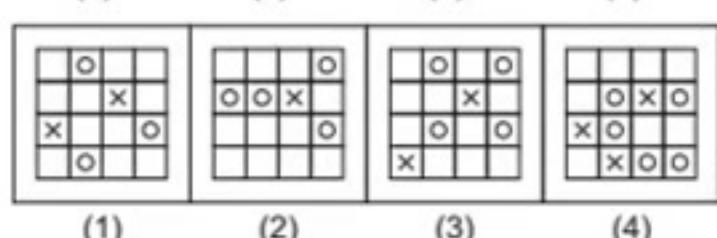
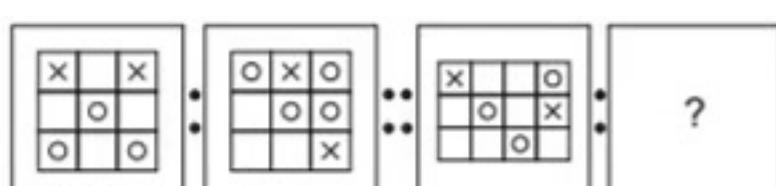
## Answer Figures



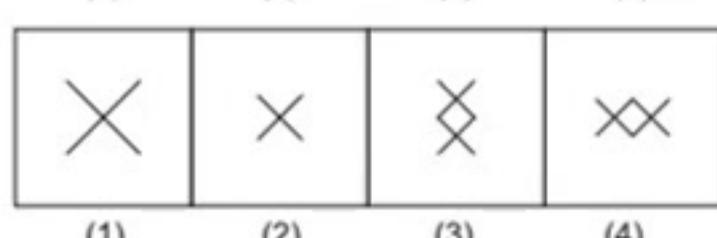
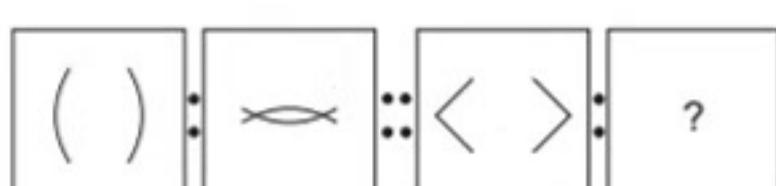
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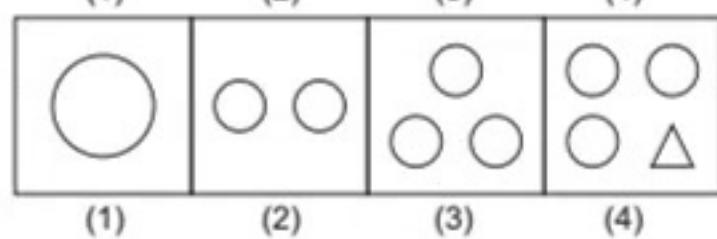
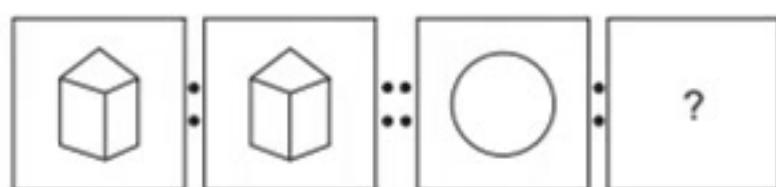
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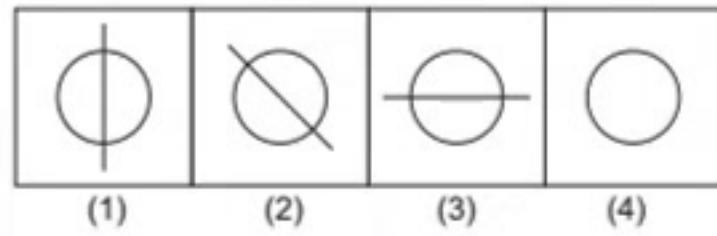
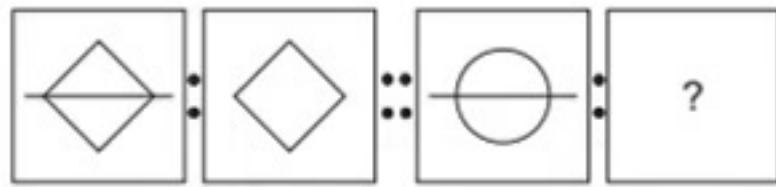
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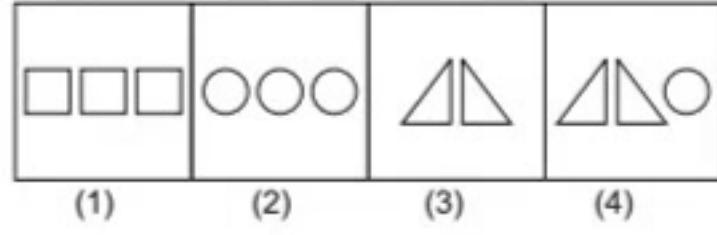
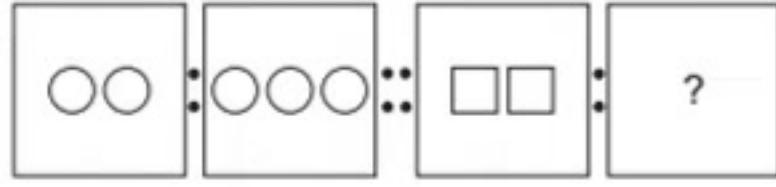
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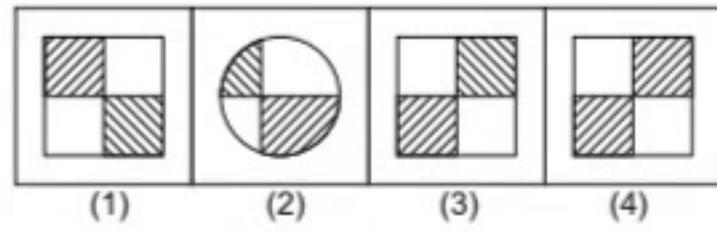
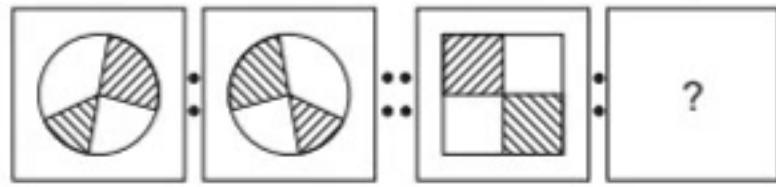
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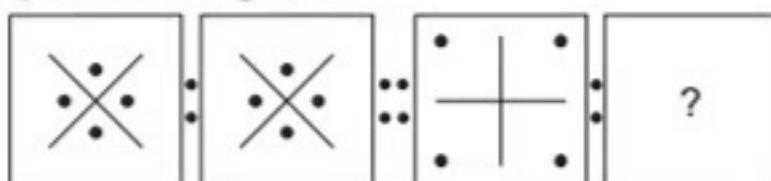
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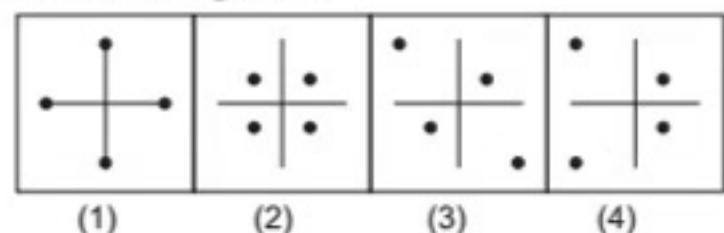
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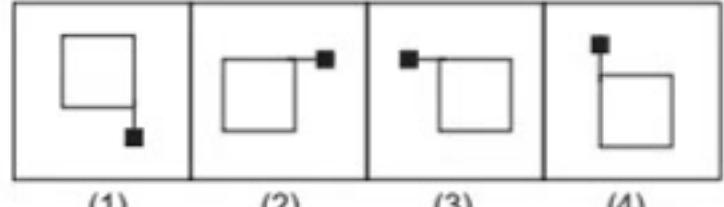
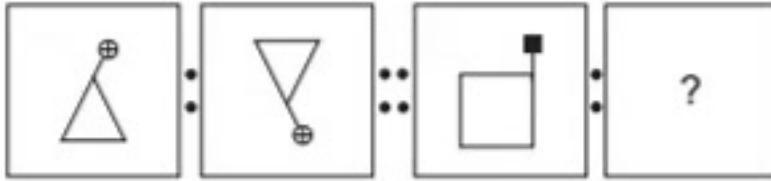
## 22. Question Figures



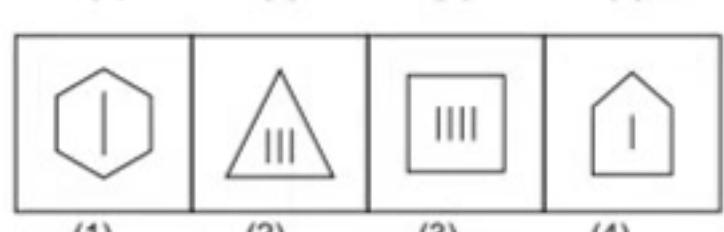
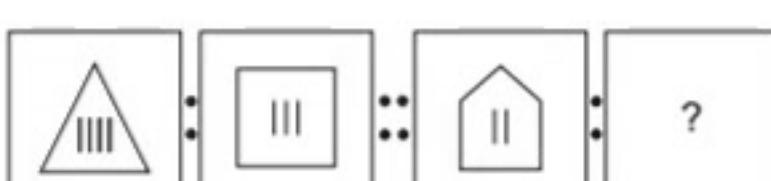
## Answer Figures



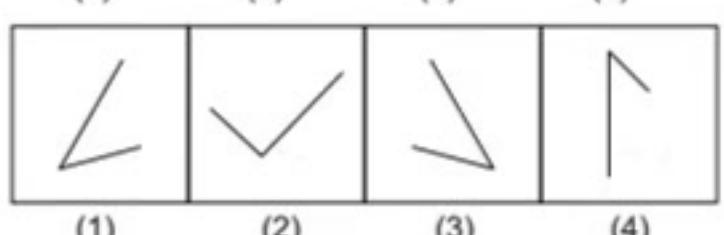
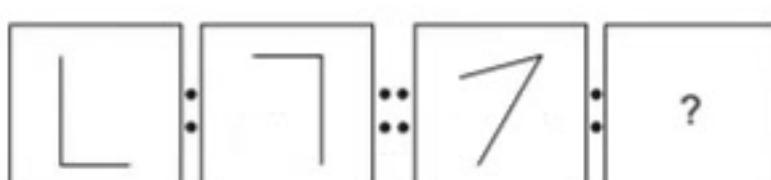
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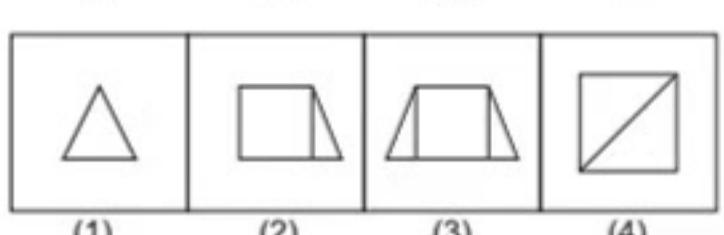
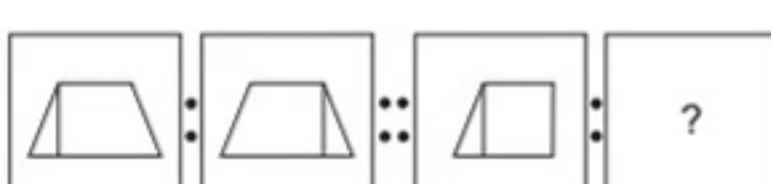
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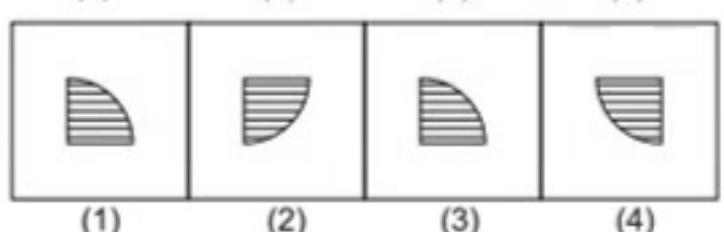
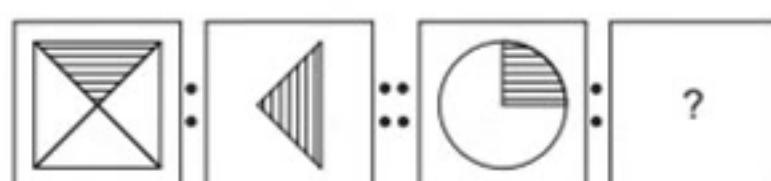
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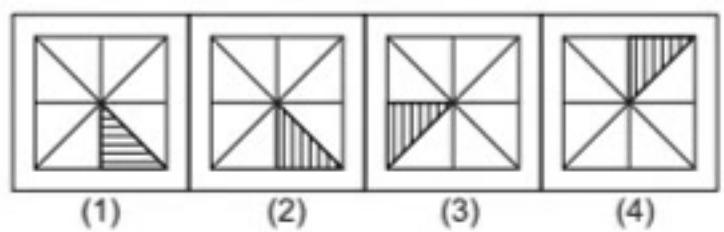
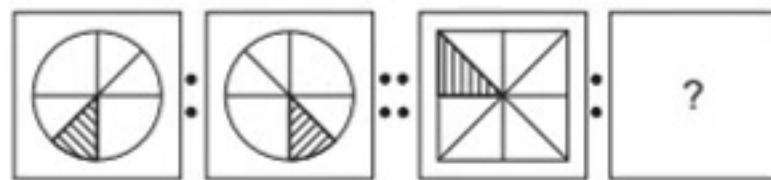
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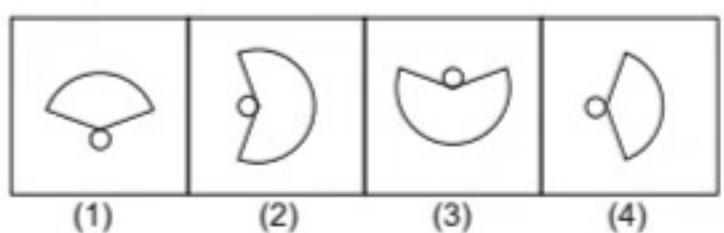
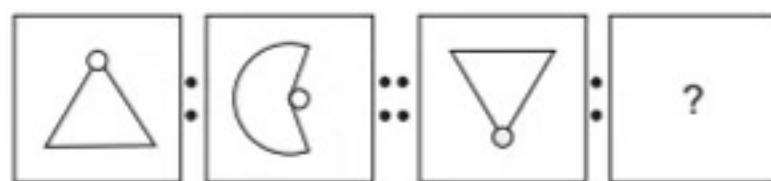
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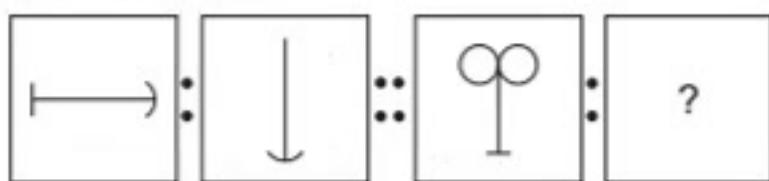
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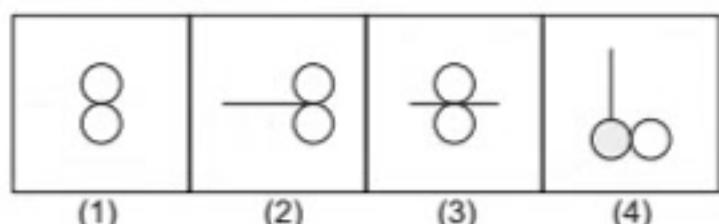
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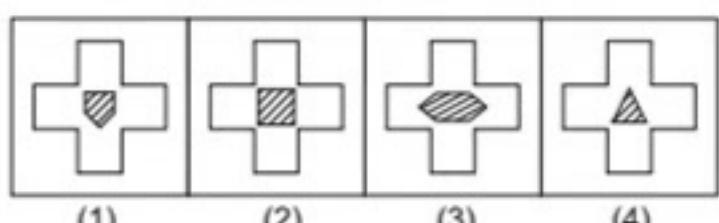
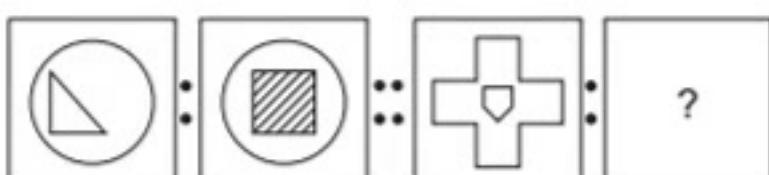
## 30. Question Figures



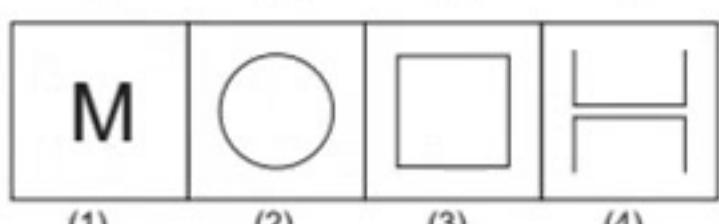
## Answer Figures



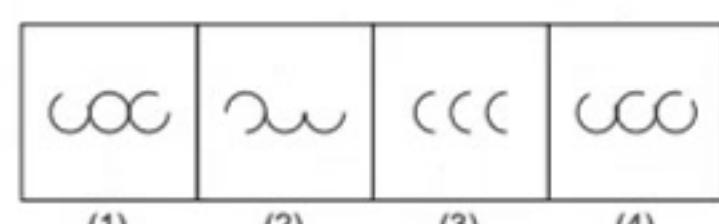
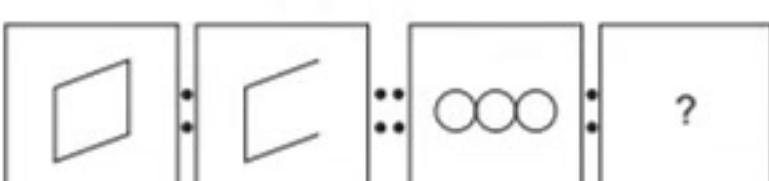
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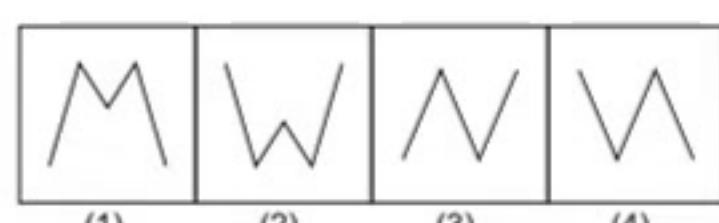
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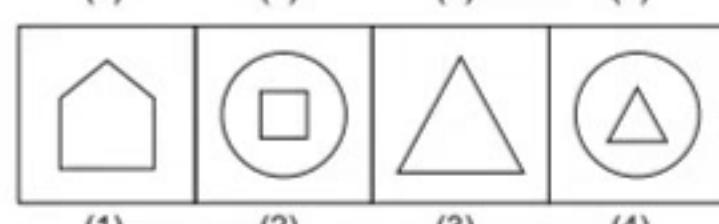
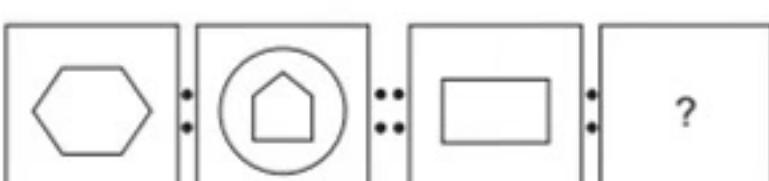
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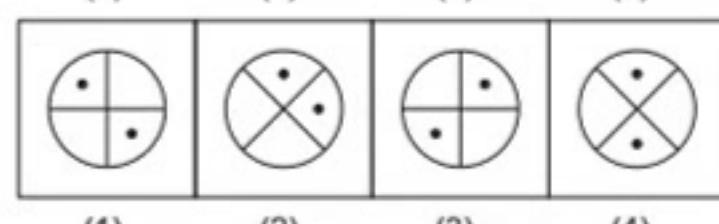
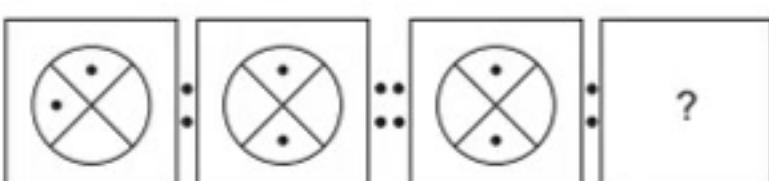
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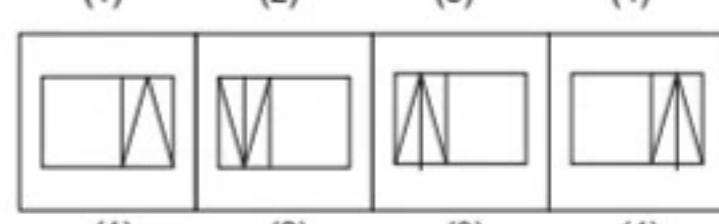
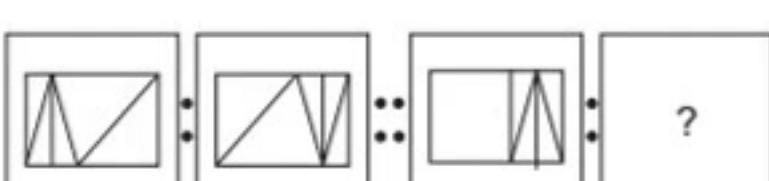
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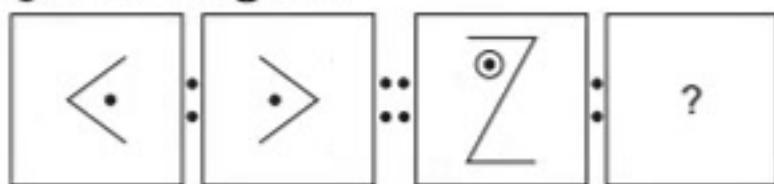
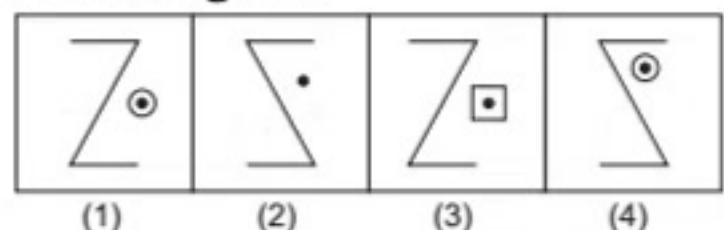
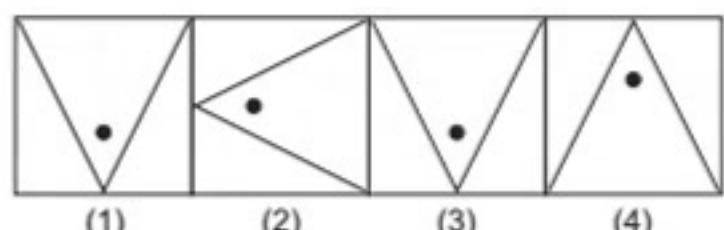
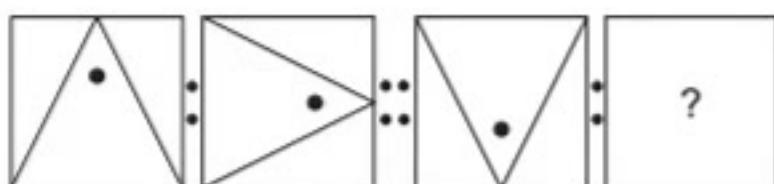
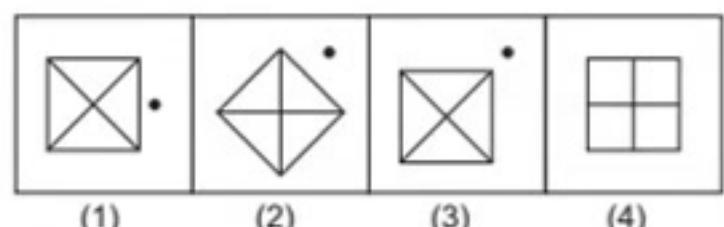
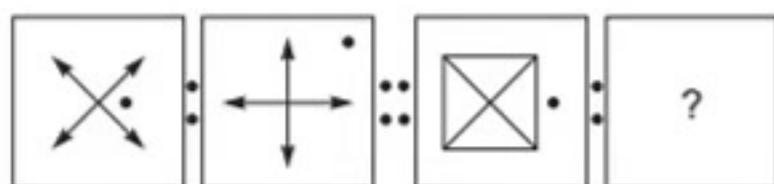
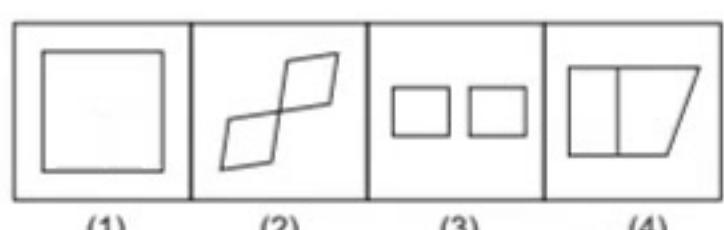
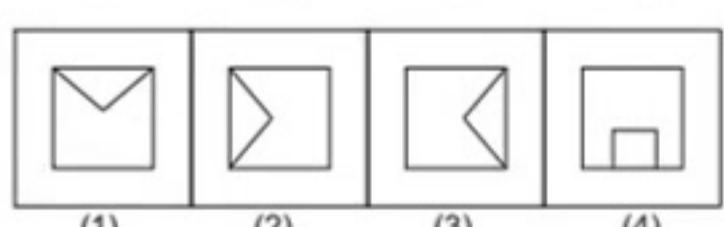
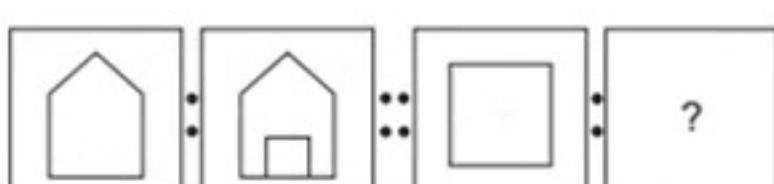
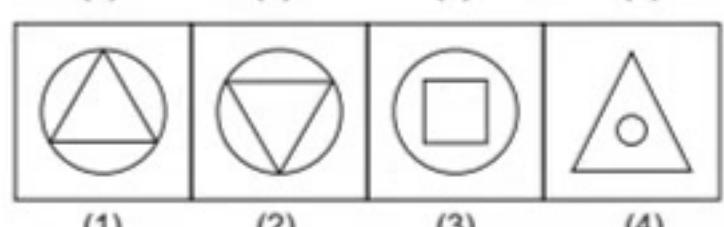
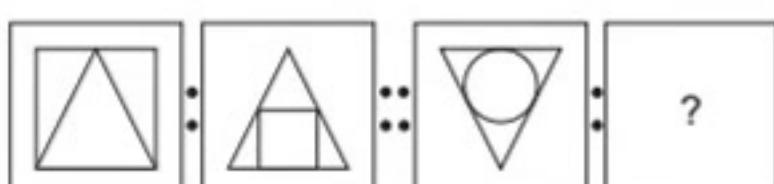
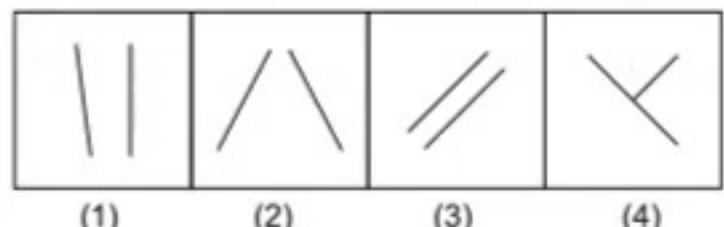
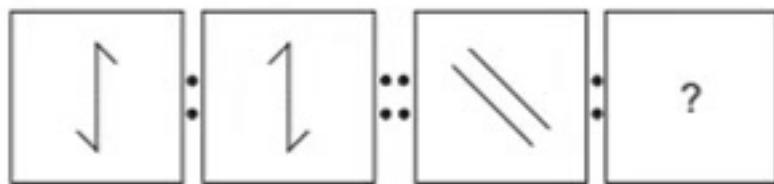
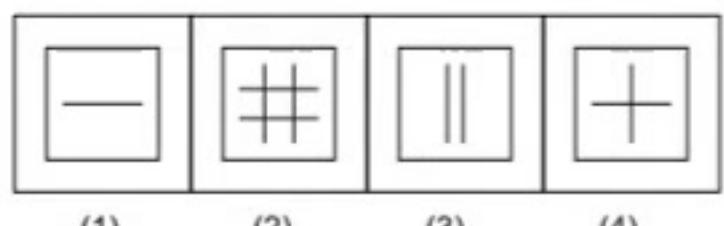
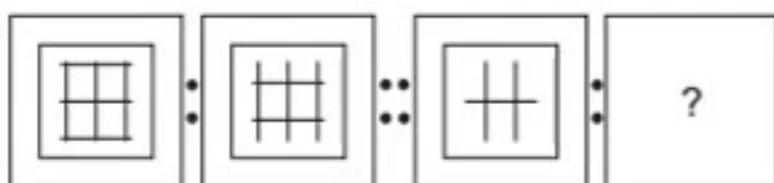


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37.

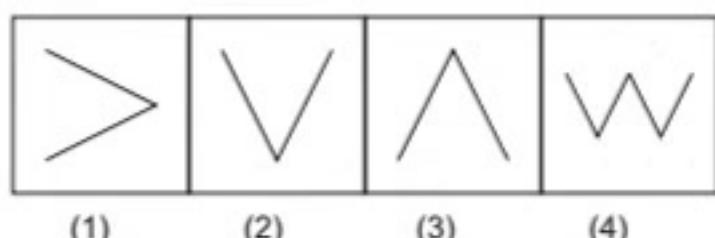


**38. Question Figures****Answer Figures****39.****40.****41.****42.****43.****44.****45.**

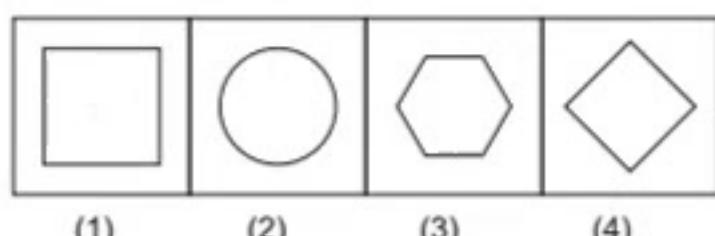
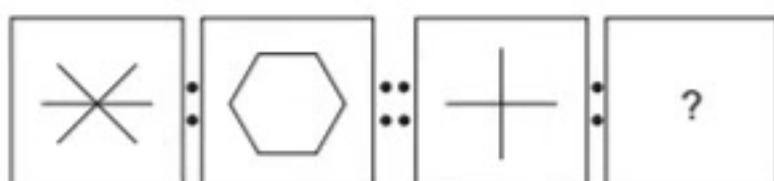
## 46. Question Figures



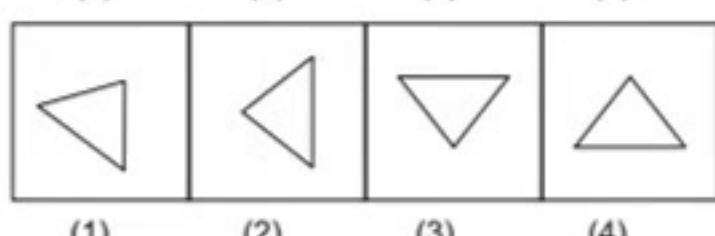
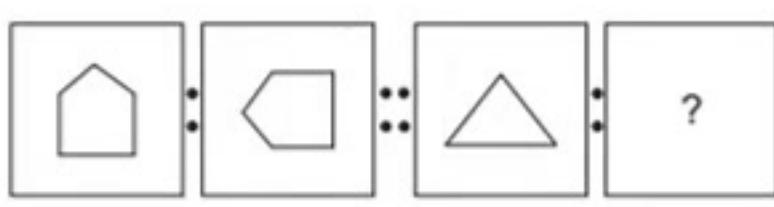
## Answer Figures



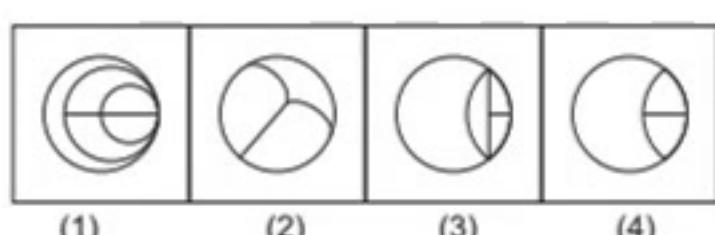
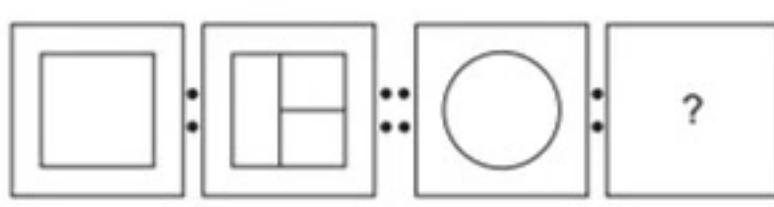
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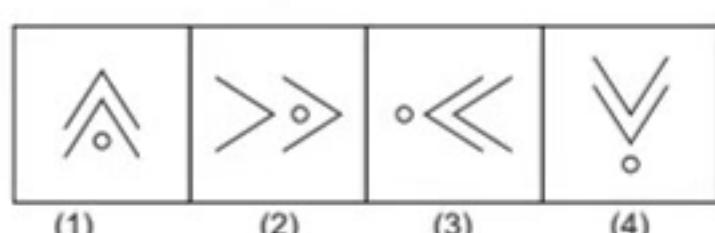
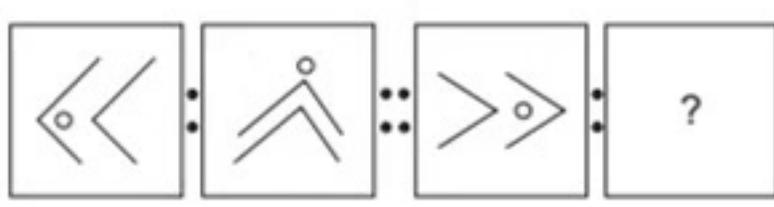
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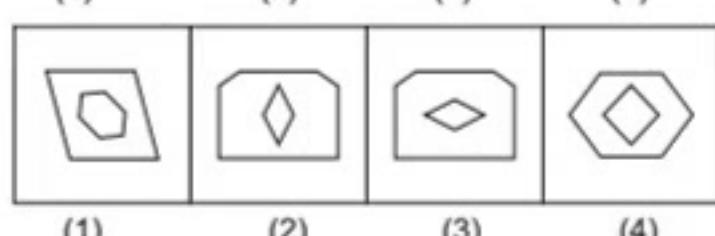
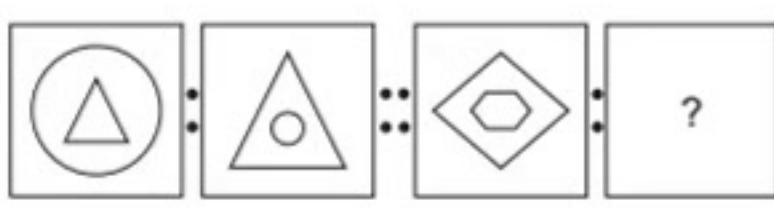
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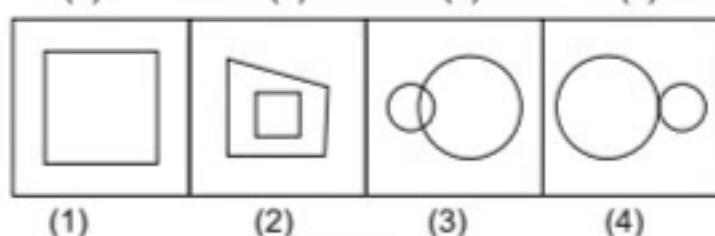
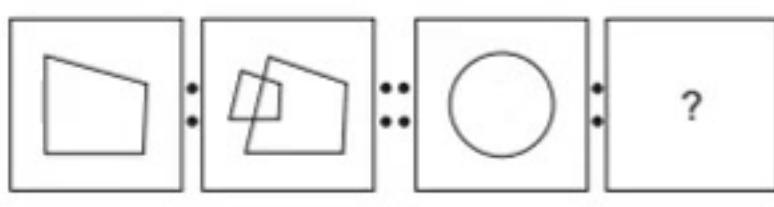
50.



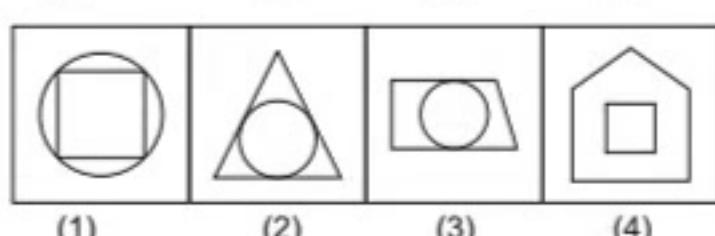
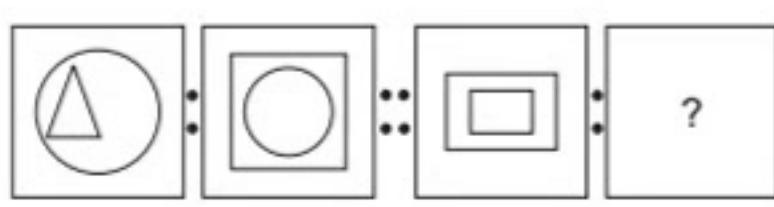
51.

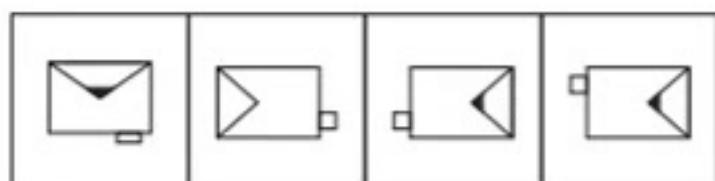
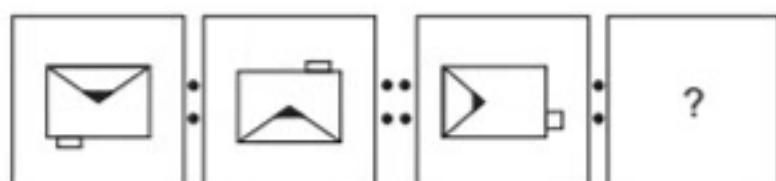


52.



53.



**54. Question Figures****Answer Figures****55.****Answers**

1 (2)	2 (1)	3 (3)	4 (2)	5 (1)	6 (3)	7 (2)	8 (2)	9 (4)	10 (2)
11 (4)	12 (2)	13 (3)	14 (1)	15 (1)	16 (3)	17 (4)	18 (1)	19 (4)	20 (1)
21. (3)	22. (2)	23. (1)	24. (1)	25. (1)	26. (2)	27. (2)	28. (4)	29. (2)	30. (2)
31. (3)	32. (3)	33. (4)	34. (1)	35. (4)	36. (2)	37. (2)	38. (4)	39. (2)	40. (2)
41. (3)	42. (4)	43. (2)	44. (3)	45. (3)	46. (1)	47. (4)	48. (2)	49. (4)	50. (4)
51. (4)	52. (3)	53. (4)	54. (4)	55. (4)					

**Hints and Solutions**

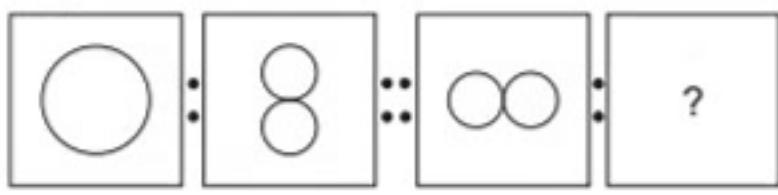
- In the second figure, one design is added with a line.
- The second figure is formed by rotating. The first figure by  $180^\circ$ .
- The first question figure has four sides and the second question figure has three sides with same figure inside. Similarly, the question figure should have four sides in place of five sides with same figure inside.
- From first figure to second, inner shape becomes outer and vice-versa.
- From first figure to second, the inner design disappears.
- From first figure to second, whole design rotates through  $90^\circ$  clockwise.
- From figure (1) to (3) inner design remains same and the circle changes to rectangle.
- The zig-zag portion of first figure becomes shaded and then the figure is turned  $90^\circ$  clockwise.
- The design gets reversed and the circles appear at the edge of design.
- The question figure 3 is same as the question figure 1. Thus, the answer figure will be same as the question figure 2.
- Whole figure rotates through  $180^\circ$  and the outer part flips inside.
- The triangle becomes double similarly circle becomes double.
- The question figure 3 is same as the question figure 2. Similarly the answer figure will be same as the question figure 1. Also, shaded becomes unshaded and vice-versa.
- Inner two designs are changing their place and outer design is deleted.
- Both the designs are inverted and joined to form a new figure.
- From first figure to second. The number of circle is increasing by one and the number of 'x' remains same.
- The arcs in 1st figure intersect each other in 2nd figure, then the resulting figure is moved  $90^\circ$ .
- The question figure is same as the question figure 2. Similarly the answer figure will be same as the question figure 3.

19. In the question figures, the line segment is removed.
20. Two circles becomes three circles. Thus, two squares will become three squares.
21. The design is moving  $90^\circ$  in anti-clockwise direction.
22. In the figures, the dots move closure to the centre.
23. The design is inverted on its axis.
24. In the figures, the number of sides of the design are increasing by one and the number of internal lines are decreasing by one.
25. The design is rotating through  $180^\circ$ .
26. Second figure is the mirror image of first figure.
27. The shaded part comes out and moves  $90^\circ$  clockwise.
28. Second figure is the mirror image of first figure.
29. Third figure is obtained by rotating the first figure through  $180^\circ$ . Similarly, fourth figure will be obtained by rotating the second figure through  $180^\circ$ .
30. The design is moving  $90^\circ$  in clockwise direction and the small line attached to it is removed.
31. The number of sides of the inner design are increasing by one and gets shaded.
32. Two half designs are joining and forming a full design.
33. In the designs, one arm or side is removed.
34. The question figure 3 is inverted design of the question figure 1. Thus, the answer figure will be the inverted design of the question figure 2.
35. The side of the design is decreasing by one and comes inside of the circle.
36. In the designs, one dot is moving  $90^\circ$  anti-clockwise.
37. The right side design get reversed and comes at left side and the left side design get reversed and comes at right side.
38. Second figure is the mirror image of the first figure.
39. The design is moving  $90^\circ$  in clockwise direction.
40. The design is moving  $45^\circ$  clockwise and the black dot shifts at the right corner.
41. From first figure to second, the design becomes double.
42. A square is forming on the base of the design.
43. The inner design comes outside and the outer design goes inside.
44. Second figure is the inverted image of first.
45. In the inner design, the horizontal line is decreasing by one and the verticle line remains same.
46. The design is rotating  $180^\circ$ .
47. The design is formed by joining the ends of the line.
48. The design is rotating  $90^\circ$  anti-clockwise.
49. The design is dividing into three parts and two parts are equal.
50. The designs are moving  $90^\circ$  in clockwise direction and circle is shifted outside.
51. The inner design comes outside and the outer design goes inside.
52. One same design is intersecting on its left side.
53. Outer design comes inside and by increasing one side the inner design becomes outer design.
54. The design is formed by joining the outer lines.
55. The upper design comes downward and the lower design goes upward.

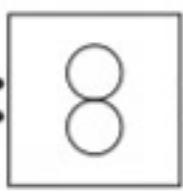
## Self Practice

**Directions (Q. Nos. 1-23)** In the following questions, the first two figures in the question figures are related to each other in same way. The same relationship holds between the third figure of the question figure and one of the answer figures 1, 2, 3 and 4. Identify the figure, which can replace the question mark (?).

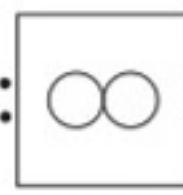
**1. Question Figures**



⋮



⋮



⋮

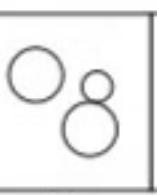


?

**Answer Figures**



(1)



(2)

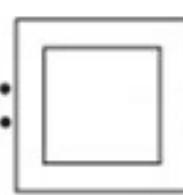
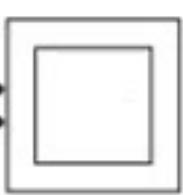


(3)



(4)

**2.**



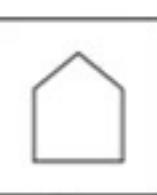
(1)



(2)

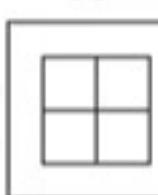
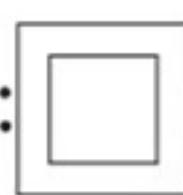
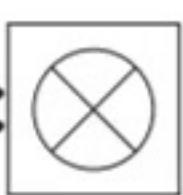
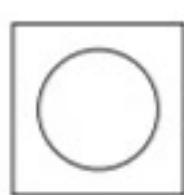


(3)

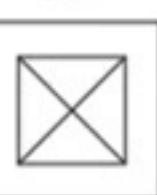


(4)

**3.**



(1)



(2)

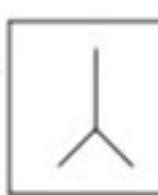
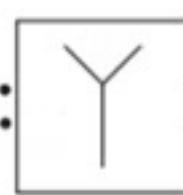
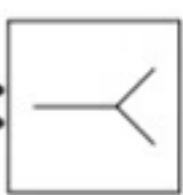
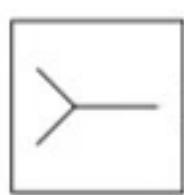


(3)

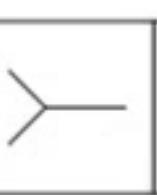


(4)

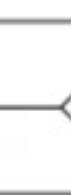
**4.**



(1)



(2)

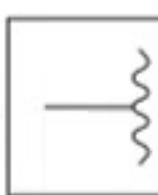
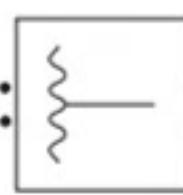
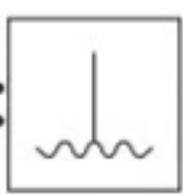
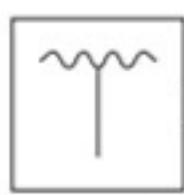


(3)

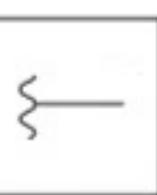


(4)

**5.**



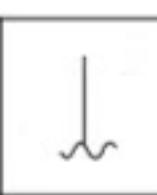
(1)



(2)

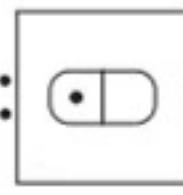
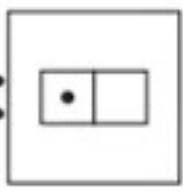
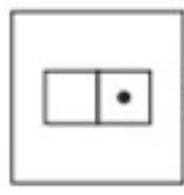


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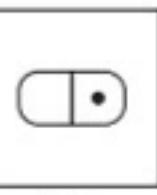


(4)

**6.**



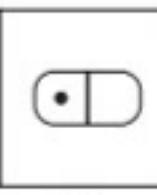
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(2)

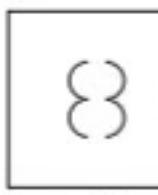
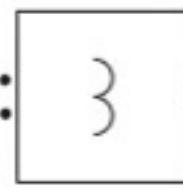
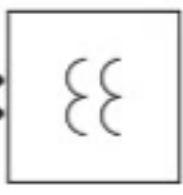
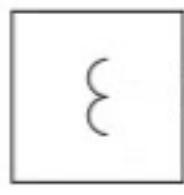


(3)



(4)

**7.**



(1)



(2)

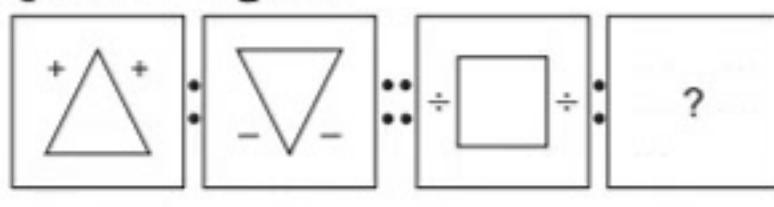


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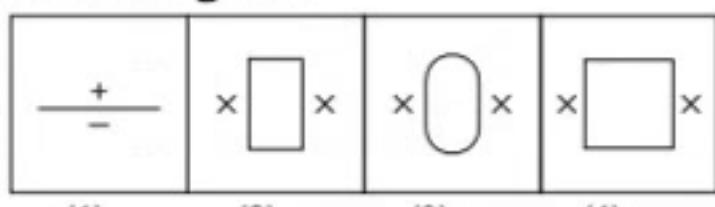


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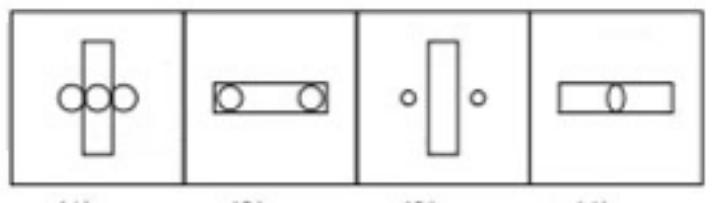
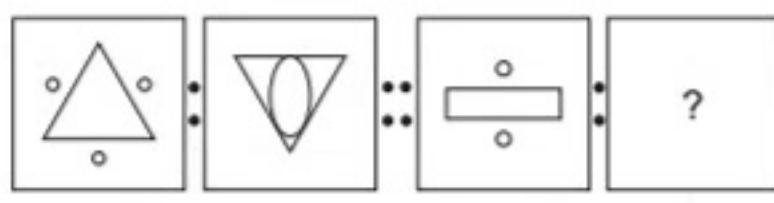
## 8. Question Figures



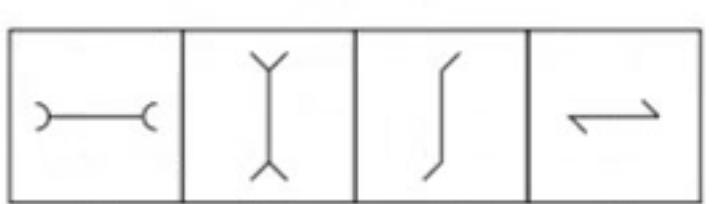
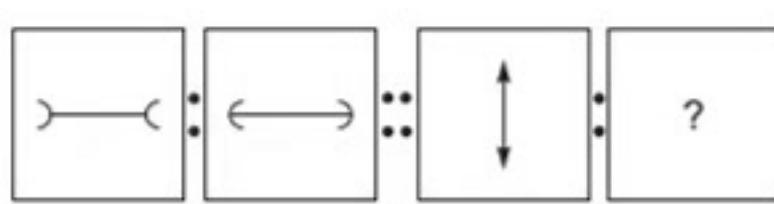
## Answer Figures



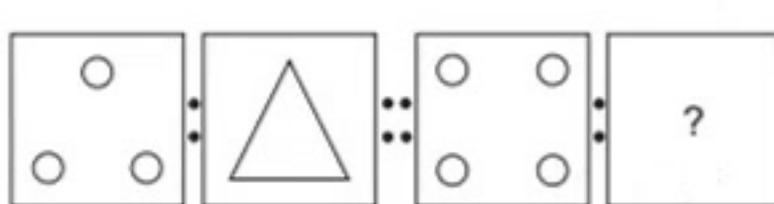
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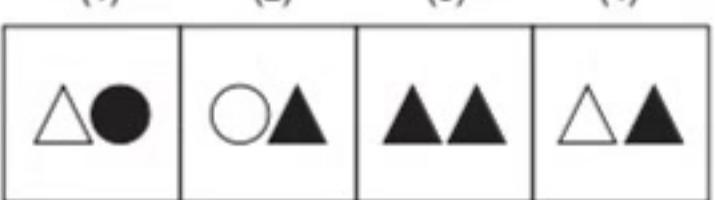
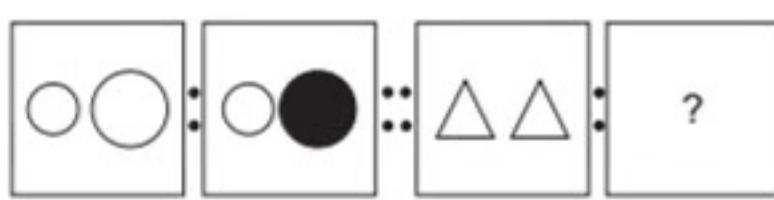
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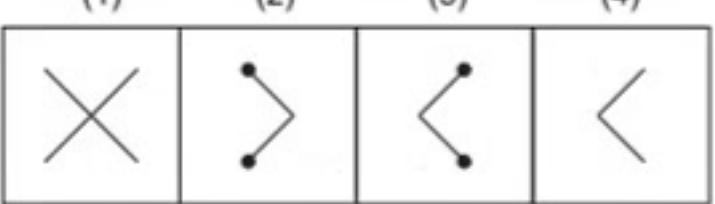
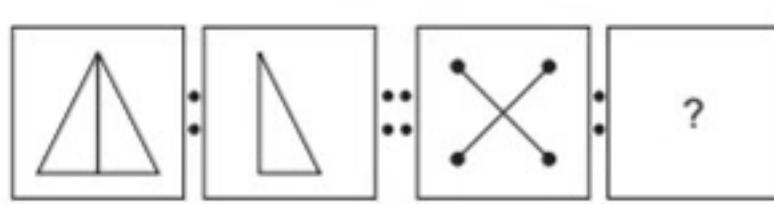
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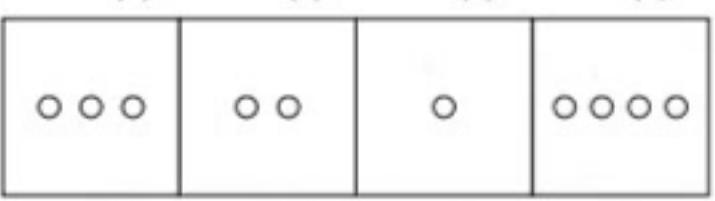
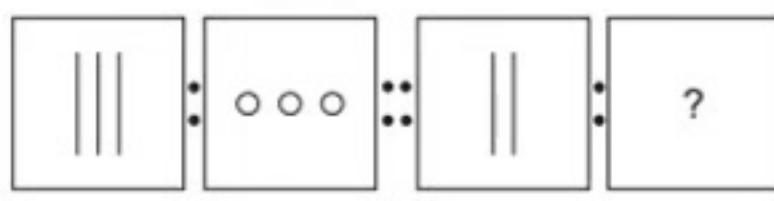
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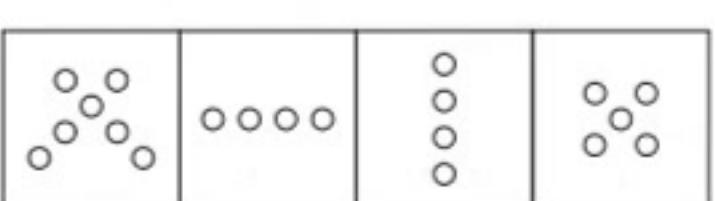
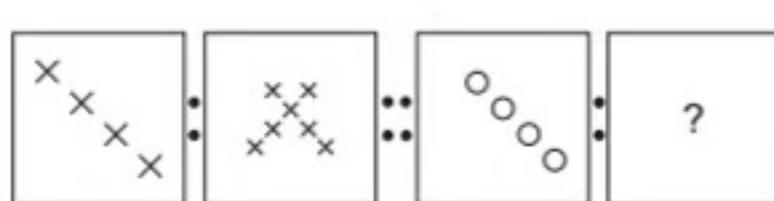
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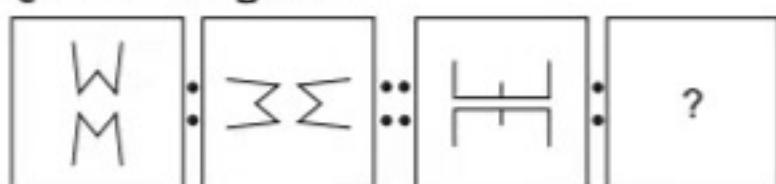
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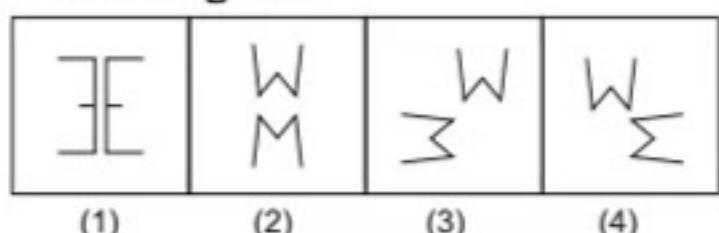
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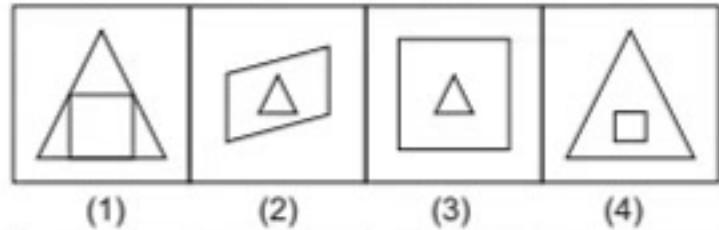
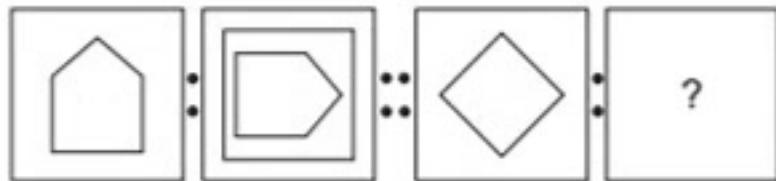
## 16. Question Figures



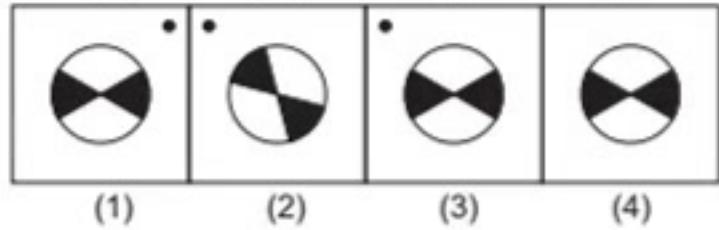
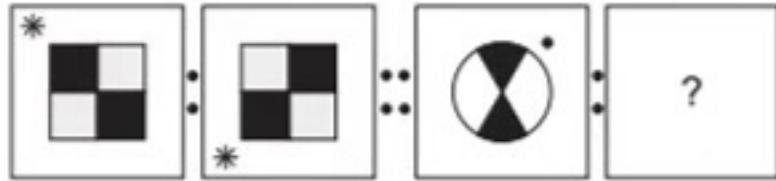
## Answer Figures



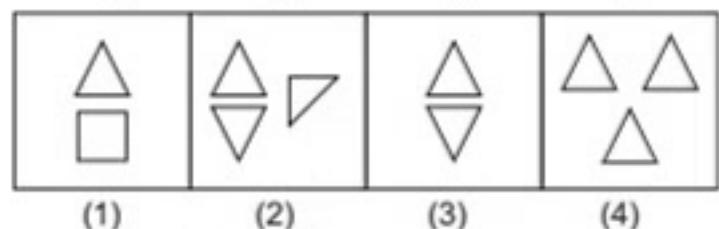
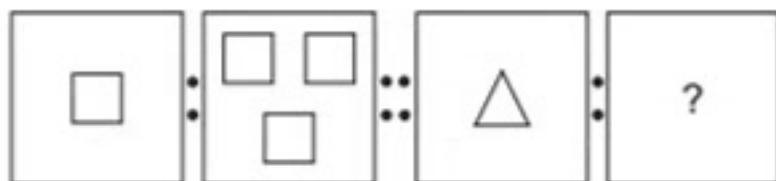
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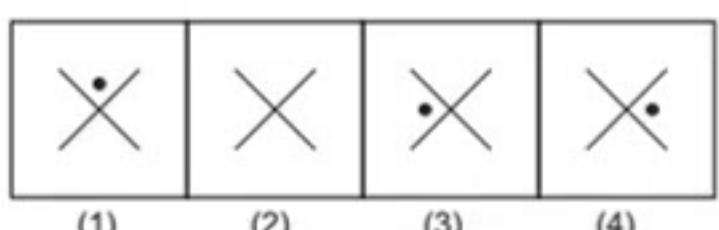
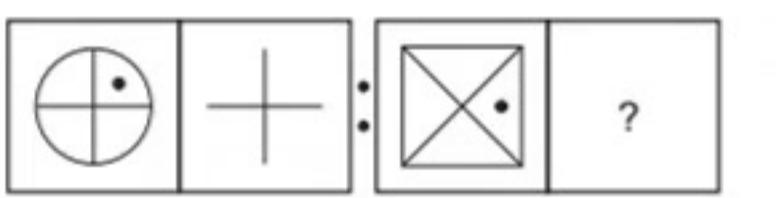
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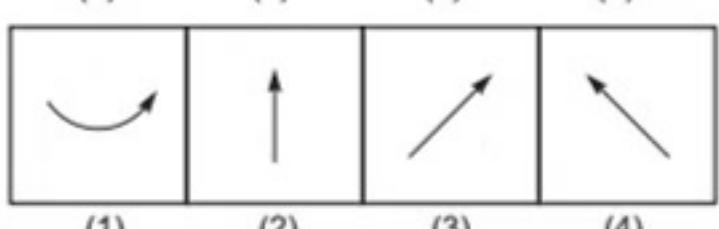
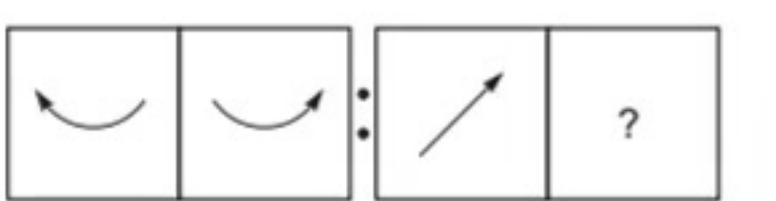
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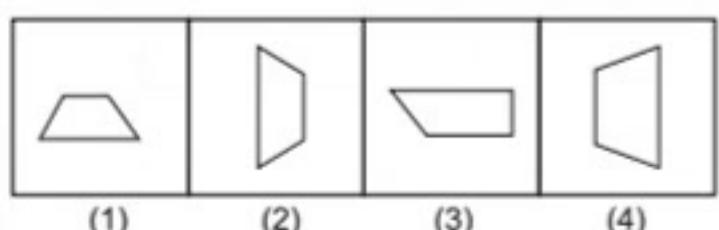
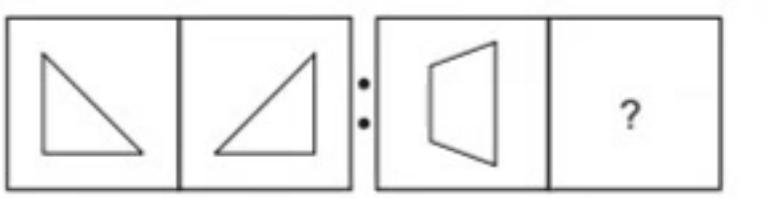
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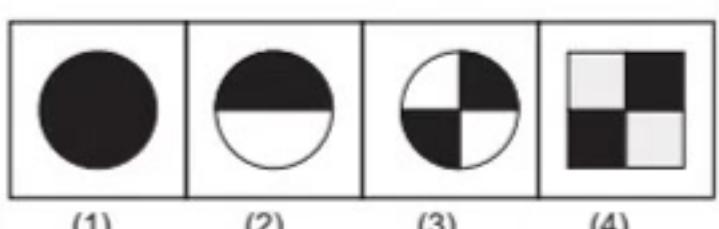
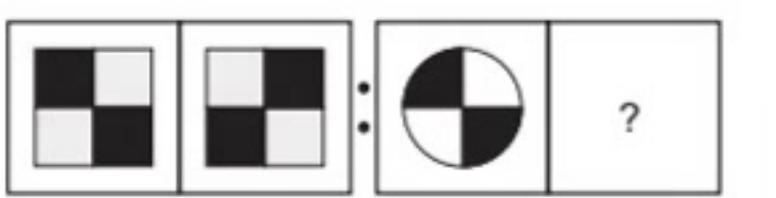
21.



22.



23.

**Answers**

<b>1</b> (1)	<b>2</b> (4)	<b>3</b> (2)	<b>4</b> (1)	<b>5</b> (1)	<b>6</b> (2)	<b>7</b> (2)	<b>8</b> (4)	<b>9</b> (4)	<b>10</b> (2)
<b>11</b> (1)	<b>12</b> (4)	<b>13</b> (3)	<b>14</b> (2)	<b>15</b> (1)	<b>16</b> (1)	<b>17</b> (4)	<b>18</b> (3)	<b>19</b> (4)	<b>20</b> (2)
<b>21</b> (4)	<b>22</b> (2)	<b>23</b> (3)							

# CHAPTER

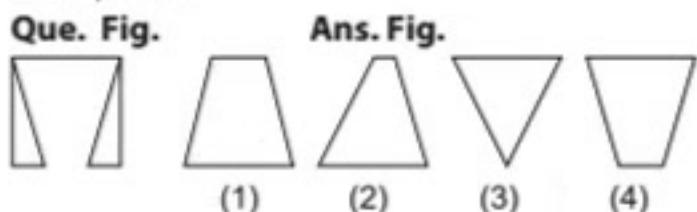
# 06

# GEOMETRICAL FIGURE COMPLETION

Geometrical figure completion test is based on formation of a square/circle/triangle by joining the piece given in the question figure with an another piece given in one of the options.

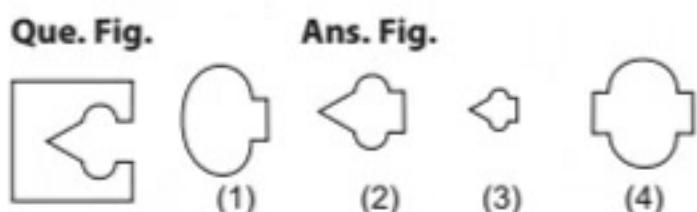
In the questions based on geometrical figure completion, a question figure which represents an incomplete square/circle/triangle is given, followed by four answer figures and only one of these four answer figures is appropriate to make a complete square/circle/triangle with the piece given in the question figure. A candidate is required to find out the correct answer figure.

#### Example 1.



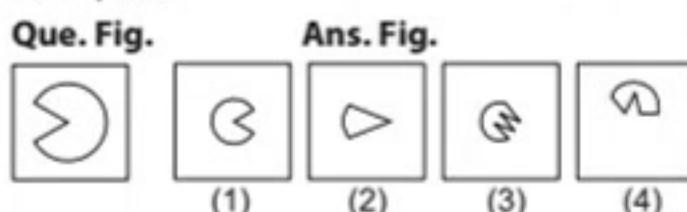
Sol. (4) Answer figure (4) will complete the question figure of square.

#### Example 2.



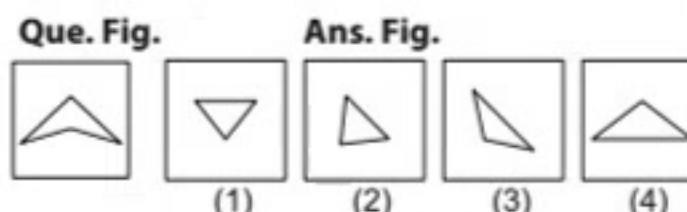
Sol. (2) Answer figure (2) will complete the question figure of square.

#### Example 3.



Sol. (2) Answer figure (2) will complete the question figure of circle.

#### Example 4.



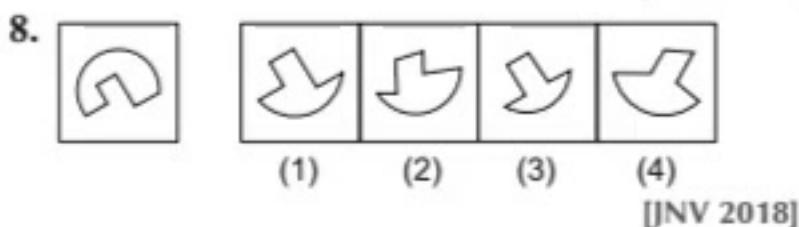
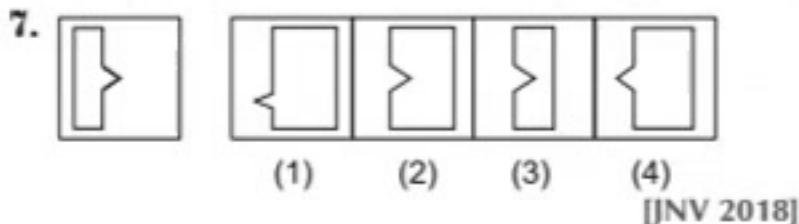
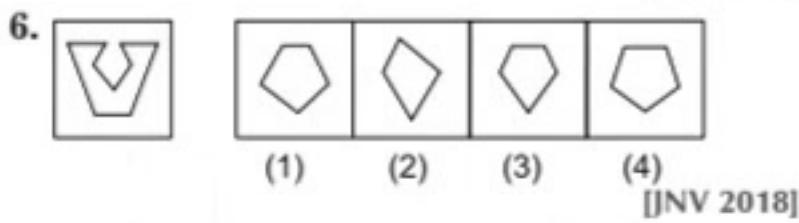
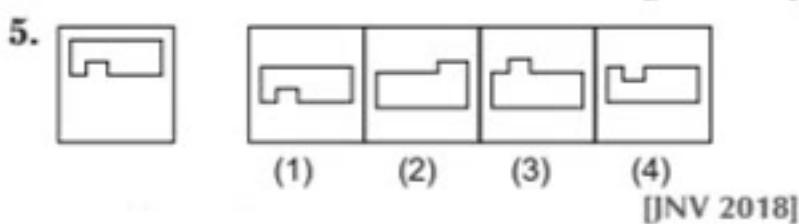
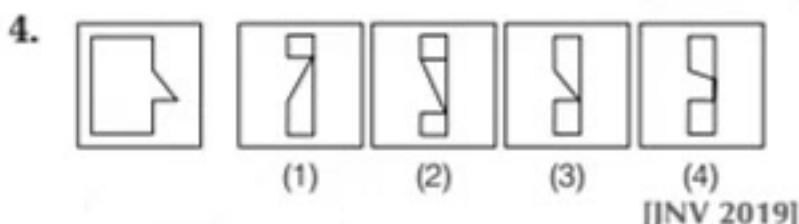
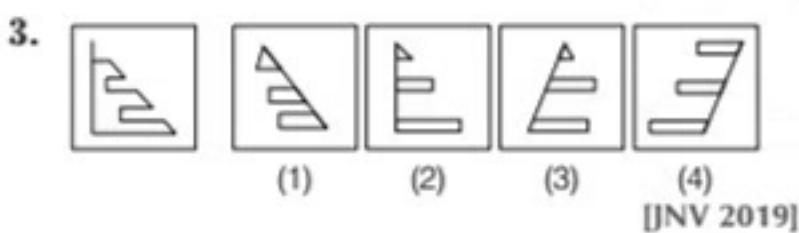
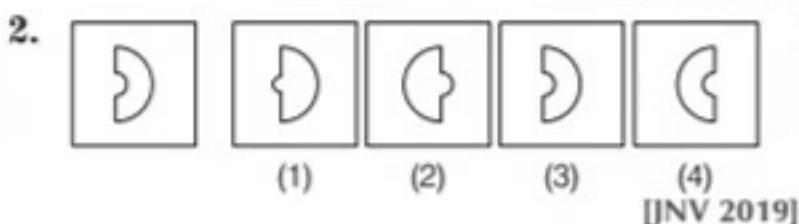
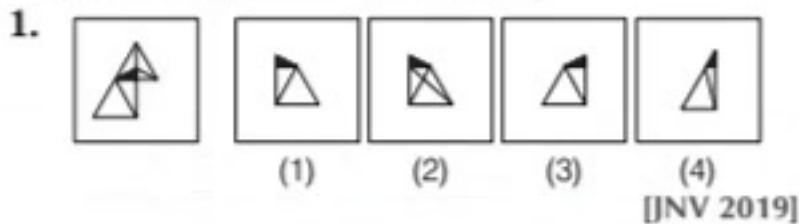
Sol. (4) Answer figure (4) will complete the question figure of triangle.

# Entrance Corner

**Directions (Q. Nos. 1-43)** In the following questions, one part of a geometrical figure (square, circle, triangle) is given on the left hand side that is question figure and the other one is among the four answer figures marked as (1), (2), (3) and (4) on the right hand side. Find the figure on the right hand side that completes the geometrical figure. Encircle the number given below the answer figures.

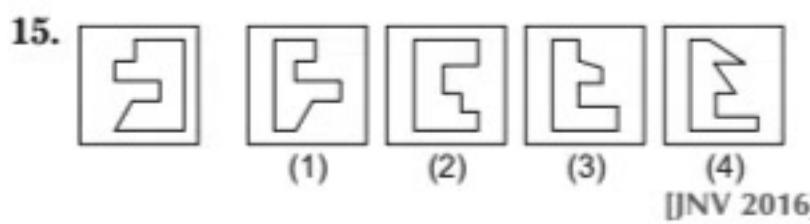
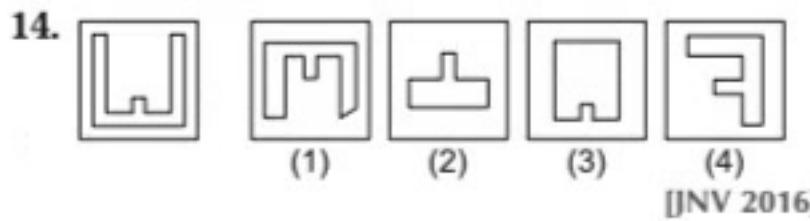
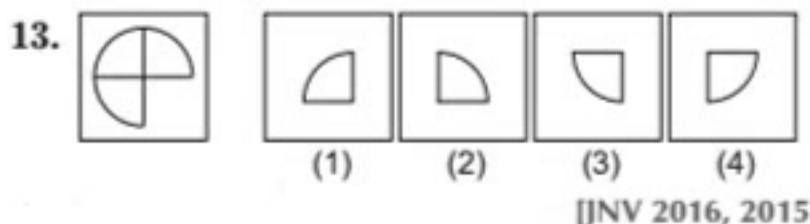
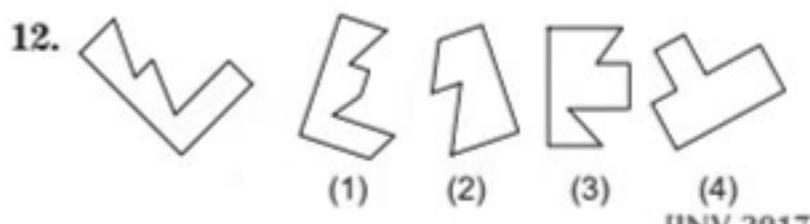
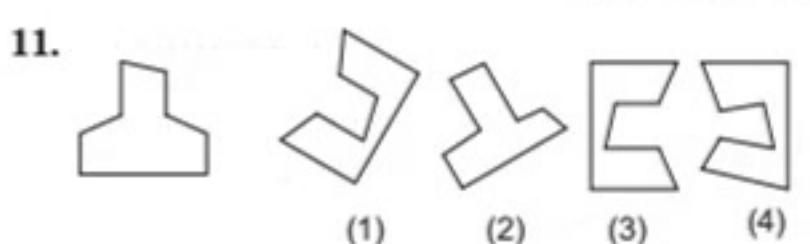
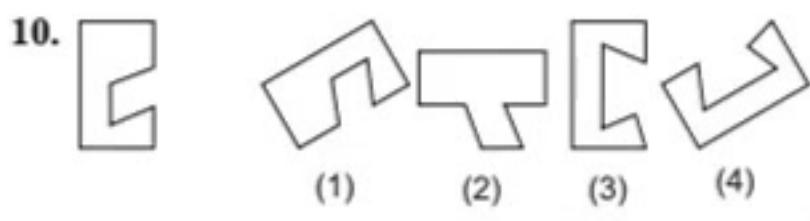
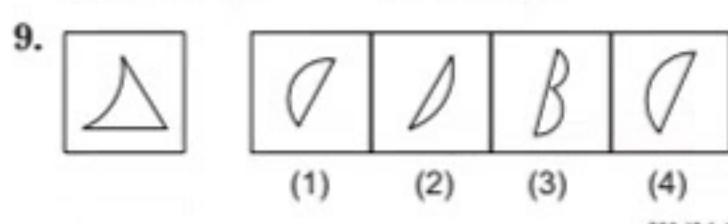
**Ques. Fig.**

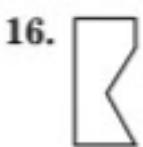
**Ans. Fig.**



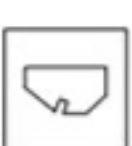
**Ques. Fig.**

**Ans. Fig.**



**Ques. Fig.****Ans. Fig.**

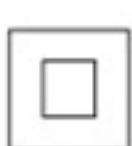
16. [JNV 2015, 2003]



17. [JNV 2015]



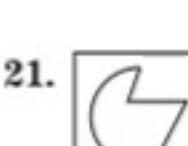
18. [JNV 2015]



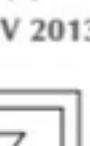
19. [JNV 2014]



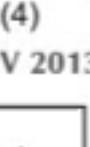
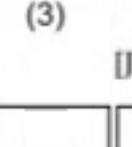
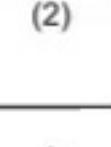
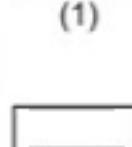
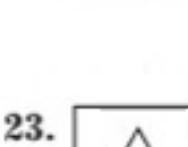
20. [JNV 2014]



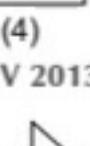
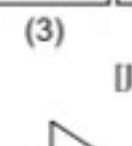
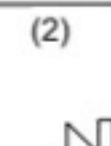
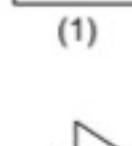
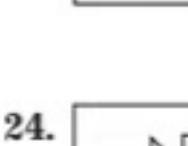
21. [JNV 2013]



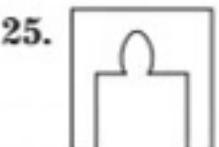
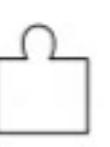
22. [JNV 2013]



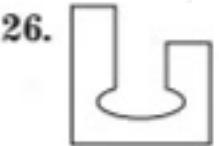
23. [JNV 2013]



24. [JNV 2012]

**Ques. Fig.****Ans. Fig.**

[JNV 2012]



[JNV 2011]



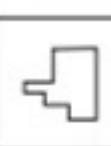
[JNV 2011]



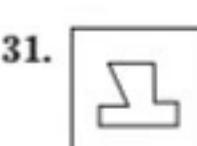
[JNV 2010]



[JNV 2010]



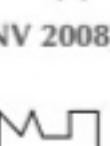
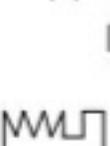
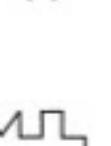
[JNV 2009]



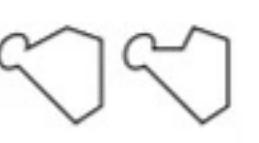
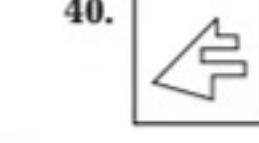
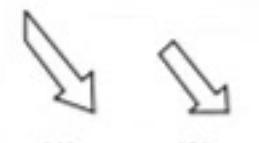
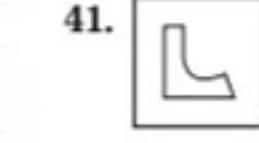
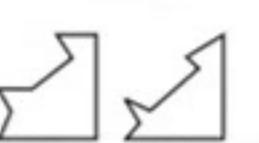
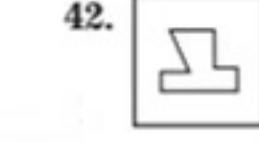
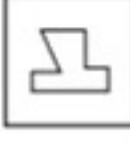
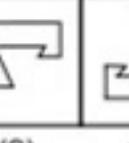
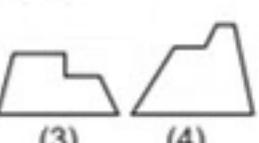
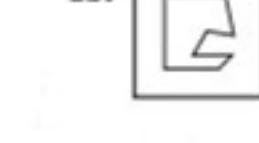
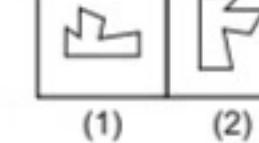
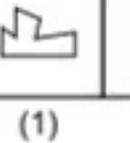
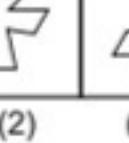
[JNV 2009]



[JNV 2008]



[JNV 2007]

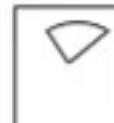
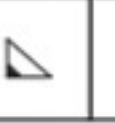
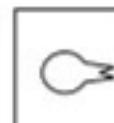
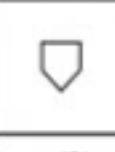
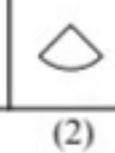
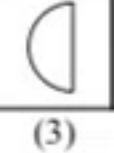
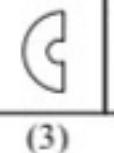
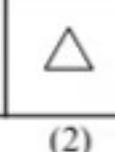
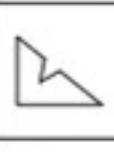
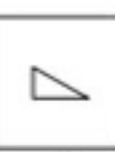
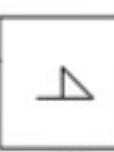
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|---|--|---|---|
| 34.    |             | 39.    |             |
| 35.    |             | 40.    |             |
| 36.   |         | 41.   |         |
| 37.  |     | 42.  |     |
| 38.  |     | 43.  |     |

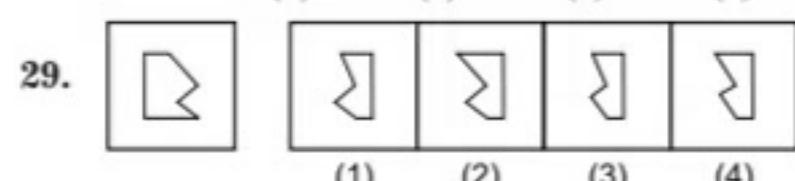
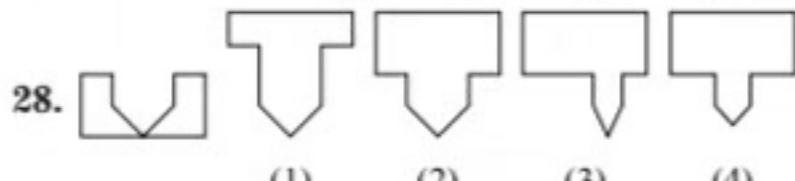
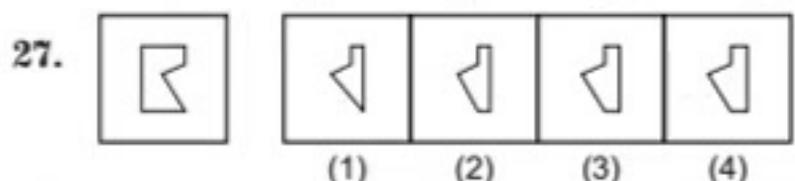
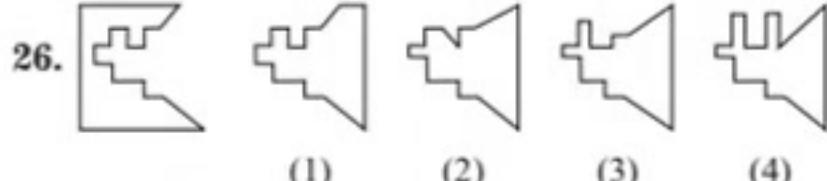
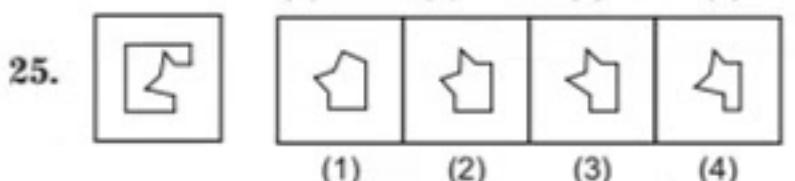
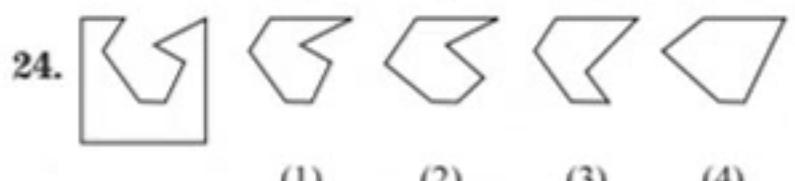
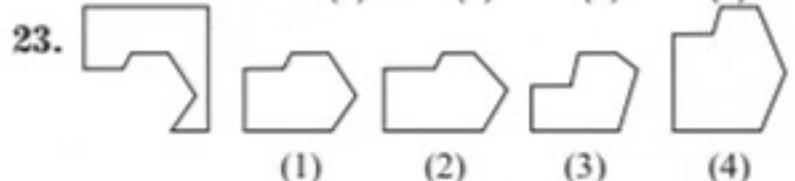
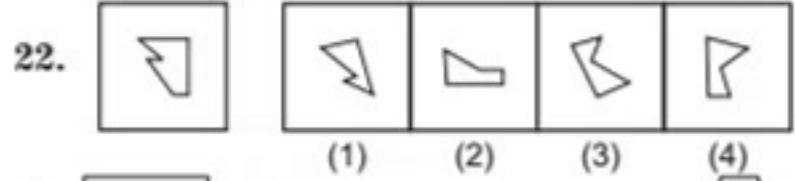
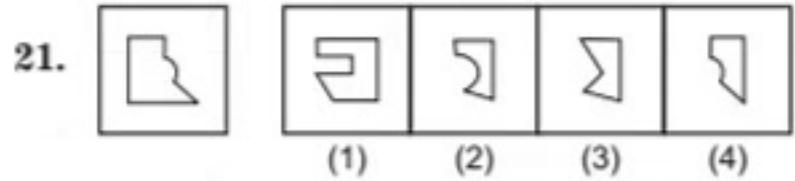
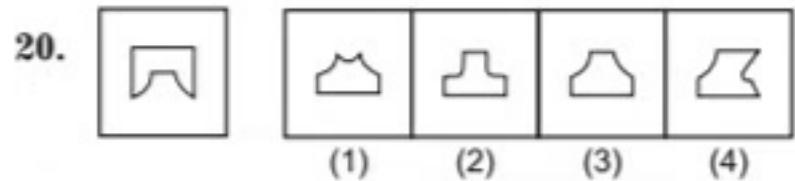
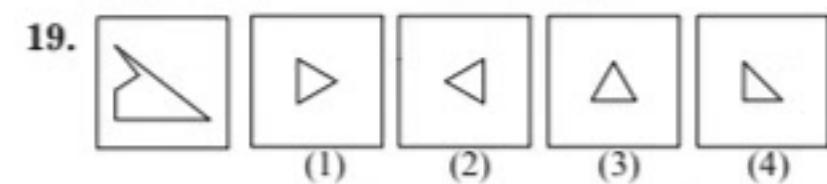
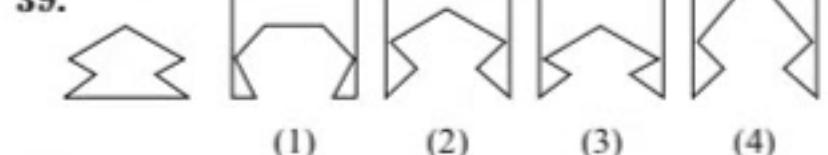
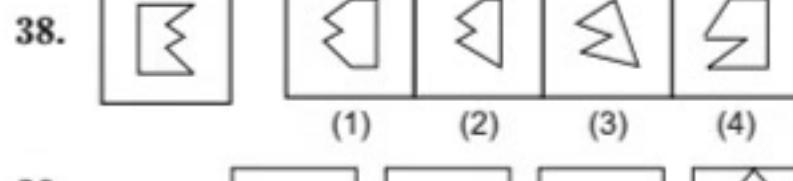
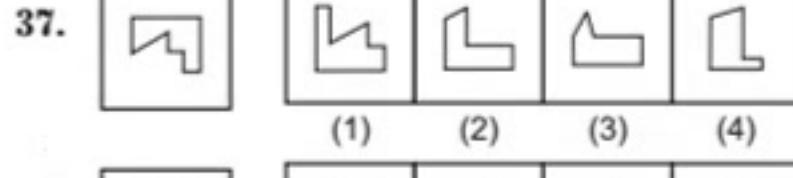
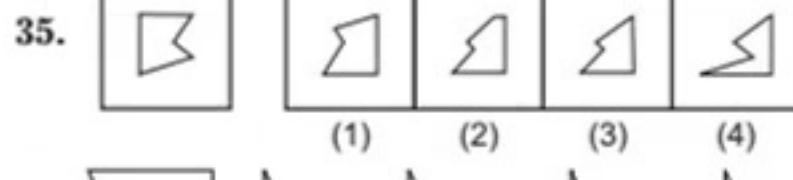
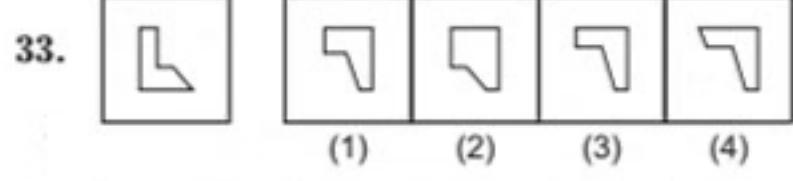
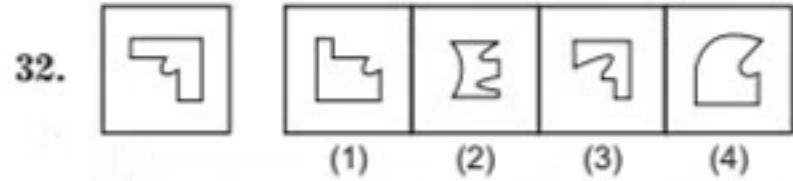
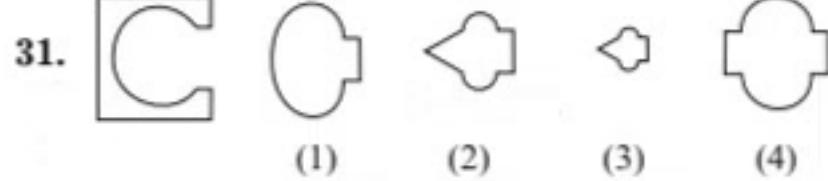
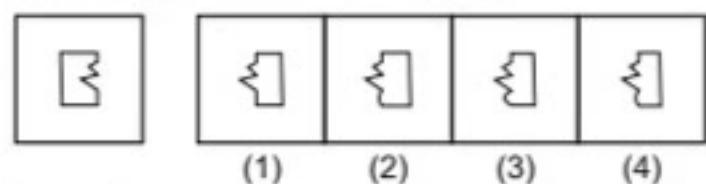
**Answers**

<b>1 (1)</b>	<b>2 (2)</b>	<b>3 (1)</b>	<b>4 (3)</b>	<b>5 (3)</b>	<b>6 (3)</b>	<b>7 (2)</b>	<b>8 (1)</b>	<b>9 (2)</b>	<b>10 (2)</b>
<b>11 (3)</b>	<b>12 (2)</b>	<b>13 (4)</b>	<b>14 (3)</b>	<b>15 (1)</b>	<b>16 (1)</b>	<b>17 (1)</b>	<b>18 (1)</b>	<b>19 (1)</b>	<b>20 (3)</b>
<b>21 (1)</b>	<b>22 (2)</b>	<b>23 (2)</b>	<b>24 (2)</b>	<b>25 (1)</b>	<b>26 (1)</b>	<b>27 (1)</b>	<b>28 (1)</b>	<b>29 (4)</b>	<b>30 (2)</b>
<b>31 (4)</b>	<b>32 (4)</b>	<b>33 (2)</b>	<b>34 (1)</b>	<b>35 (4)</b>	<b>36 (1)</b>	<b>37 (3)</b>	<b>38 (1)</b>	<b>39 (3)</b>	<b>40 (3)</b>
<b>41 (4)</b>	<b>42 (4)</b>	<b>43 (2)</b>							

## Practice Exercise

**Directions (Q. Nos. 1-40)** In the following questions, one part of a square is given on the left hand side that is question figure and the other one is among the four answer figures marked as (1), (2), (3) and (4) on the right hand side. Find the figure on the right hand side that completes the square. Encircle the number given below the answer figures.

- | Que. Fig. | Ans. Fig.   |   |   |   | Que. Fig.  | Ans. Fig. |   |   |   |   |   |
|-----------|---|---|---|---|--|-----------|---|---|---|---|---|
| 1.        |    |    |    |    |    | 10.       |    |    |    |    |    |
| 2.        |   |   |   |   |   | 11.       |   |   |   |   |   |
| 3.        |  |  |  |  |  | 12.       |  |  |  |  |  |
| 4.        |  |  |  |  |  | 13.       |  |  |  |  |  |
| 5.        |  |  |  |  |  | 14.       |  |  |  |  |  |
| 6.        |  |  |  |  |  | 15.       |  |  |  |  |  |
| 7.        |  |  |  |  |  | 16.       |  |  |  |  |  |
| 8.        |  |  |  |  |  | 17.       |  |  |  |  |  |
| 9.        |  |  |  |  |  | 18.       |  |  |  |  |  |

**Que. Fig.****Que. Fig.**

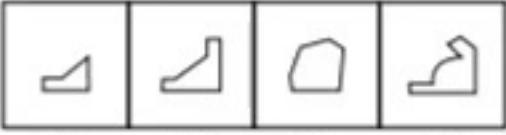
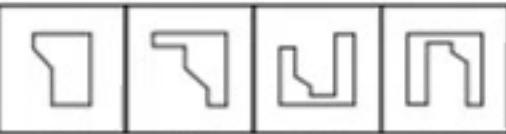
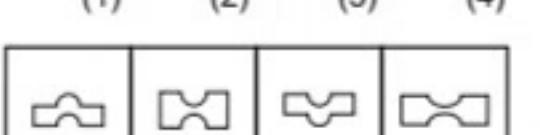
## Answers

<b>1</b> (2)	<b>2</b> (3)	<b>3</b> (1)	<b>4</b> (4)	<b>5</b> (2)	<b>6</b> (2)	<b>7</b> (1)	<b>8</b> (3)	<b>9</b> (2)	<b>10</b> (3)
<b>11</b> (2)	<b>12</b> (1)	<b>13</b> (1)	<b>14</b> (3)	<b>15</b> (3)	<b>16</b> (4)	<b>17</b> (2)	<b>18</b> (3)	<b>19</b> (1)	<b>20</b> (3)
<b>21</b> (4)	<b>22</b> (1)	<b>23</b> (1)	<b>24</b> (1)	<b>25</b> (4)	<b>26</b> (1)	<b>27</b> (3)	<b>28</b> (2)	<b>29</b> (2)	<b>30</b> (1)
<b>31</b> (1)	<b>32</b> (1)	<b>33</b> (2)	<b>34</b> (4)	<b>35</b> (4)	<b>36</b> (3)	<b>37</b> (1)	<b>38</b> (1)	<b>39</b> (3)	<b>40</b> (1)

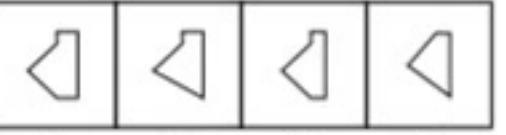
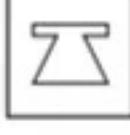
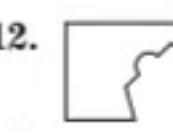
## Self Practice

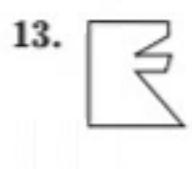
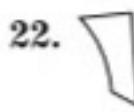
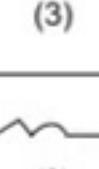
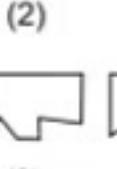
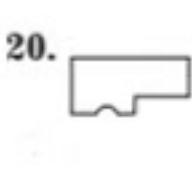
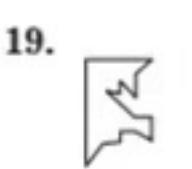
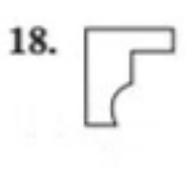
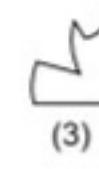
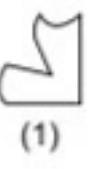
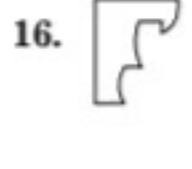
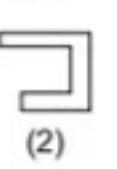
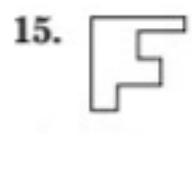
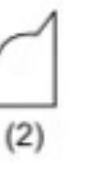
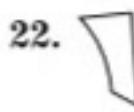
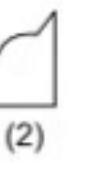
**Directions (Q. Nos. 1-30)** In the following questions, one part of a square is given on the left hand side that is question figure and the other one is among the four answer figures marked as (1), (2), (3) and (4) on the right hand side. Find the figure on the right hand side that completes the square.

**Que. Fig. Ans. Fig.**

1.  
2.  
3.  
4.  
5.  
6.  

**Que. Fig. Ans. Fig.**

7.  
8.  
9.  
10.  
11.  
12.  

**Que. Fig.****Ans. Fig.****Que. Fig.****Ans. Fig.****Que. Fig.****Ans. Fig.**

### Answers

<b>1 (1)</b>	<b>2 (1)</b>	<b>3 (3)</b>	<b>4 (3)</b>	<b>5 (4)</b>	<b>6 (2)</b>	<b>7 (1)</b>	<b>8 (4)</b>	<b>9 (4)</b>	<b>10 (1)</b>
<b>11 (1)</b>	<b>12 (1)</b>	<b>13 (3)</b>	<b>14 (1)</b>	<b>15 (4)</b>	<b>16 (2)</b>	<b>17 (3)</b>	<b>18 (4)</b>	<b>19 (1)</b>	<b>20 (1)</b>
<b>21 (4)</b>	<b>22 (1)</b>	<b>23 (4)</b>	<b>24 (3)</b>	<b>25 (2)</b>	<b>26 (2)</b>	<b>27 (1)</b>	<b>28 (2)</b>	<b>29 (3)</b>	<b>30 (1)</b>

# **CHAPTER**

# **07**

# **MIRROR IMAGE**

The reflection of an object into the mirror is called mirror image or we can say that the figure obtained by putting a mirror in front of the real figure is called mirror image.

The questions based on mirror image are divided in two parts, i.e. first part which is known as question figure and in second part there are four answer figures. The student is required to find out the correct mirror image of the given problem figure.

While solving the problems, the students should follow some points

- If the position of mirror is not clear in the question, then use the mirror at the right side of an object.
- In the mirror image of an object lower and upper part remain constant while left and right get interchanged.
- In mirror image left part of an object becomes right part and right part becomes left part.

## **Mirror Image of Capital Letter**

Letter	Mirror Image	Letter	Mirror Image	Letter	Mirror Image
A	A	J	L	S	Z
B	B	K	K	T	T
C	C	L	J	U	U
D	D	M	M	V	V
E	E	N	N	W	W
F	F	O	O	X	X
G	G	P	Q	Y	Y
H	H	Q	Q	Z	S
I	I	R	Я	—	—

**Note** Unchanged image of letters are A, H, I, M, O, T, U, V, W, X . (10 letters)

## **Mirror Image of Small Letters**

Letter	Mirror Image	Letter	Mirror Image	Letter	Mirror Image
a	a	j	i	s	z
b	d	k	κ	t	f
c	o	l	l	u	u
d	b	m	m	v	v
e	e	n	n	w	w
f	†	o	o	x	x
g	g	p	q	y	χ
h	h	q	p	z	s
i	i	r	ı	—	—

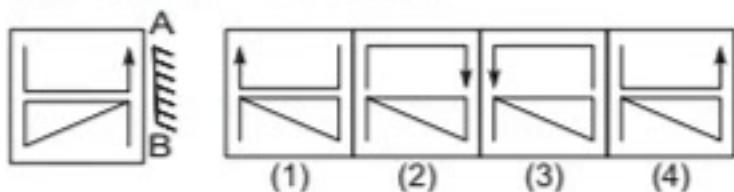
## **Mirror Image of Numbers**

Number	1	2	3	4	5	6	7	8	9
Mirror Image	†	Σ	ε	↳	ϛ	ϛ	τ	8	ε

To understand the concept of the mirror image. Let us look on some of the following examples.

**Example 1.** Which of the following answer figure would be the exact mirror image of question figure?

**Ques. Fig. Ans. Fig.**

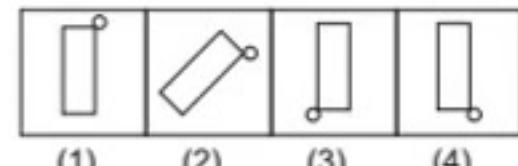
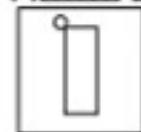


Sol. (1) Answer figure (1) is the exact mirror image of question figure.

**Example 2.**

**Ques. Fig. Ans. Fig.**

A // B

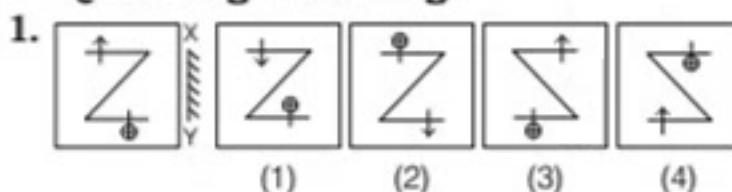


Sol. (3) Answer figure (3) is the exact mirror image of the question figure.

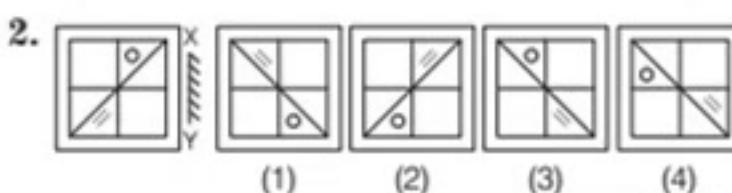
## Entrance Corner

**Directions (Q.Nos. 1-18)** In the given questions, there is a question figure and four answer figures (1), (2), (3) and (4). Find out the correct answer figure when a mirror is held on XY line.

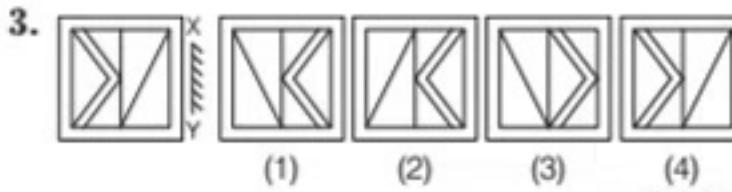
**Ques. Fig. Ans. Fig.**



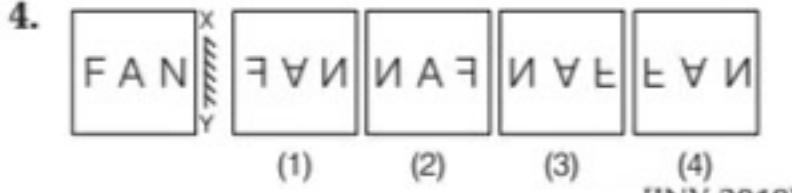
[JNV 2019]



[JNV 2019]

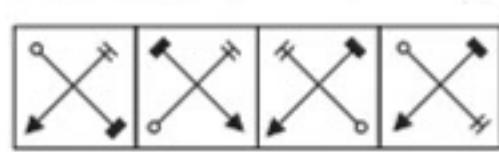
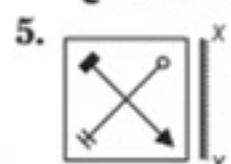


[JNV 2019]

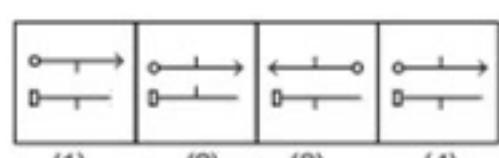


[JNV 2019]

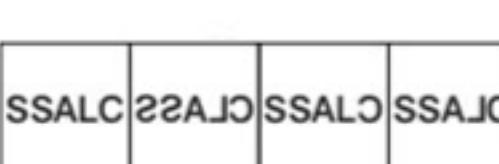
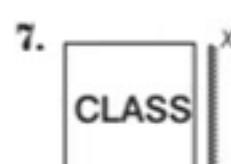
**Ques. Fig. Ans. Fig.**



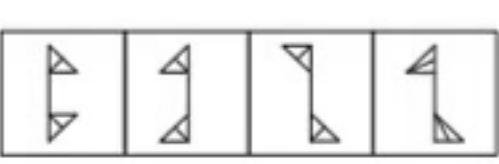
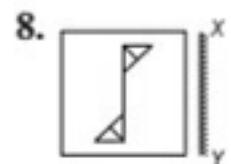
[JNV 2018]



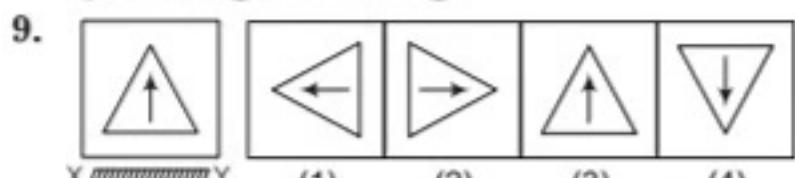
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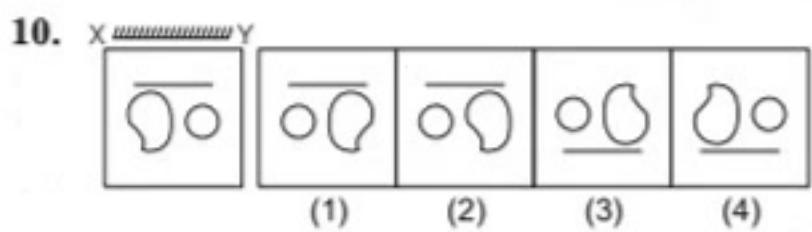
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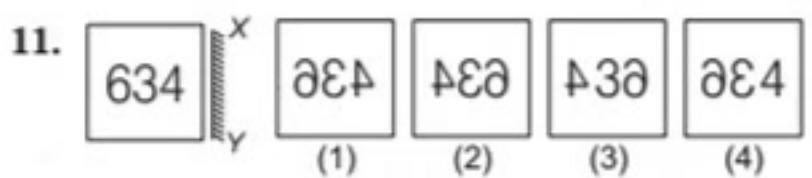
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**Ques. Fig. Ans. Fig.**

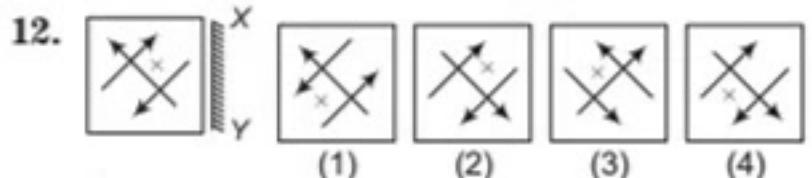
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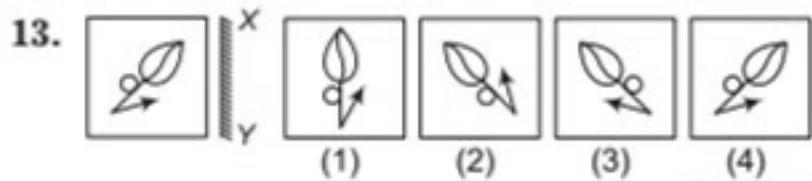
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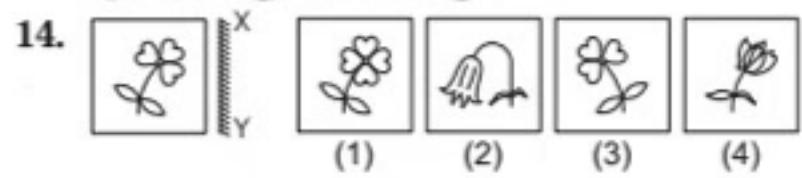
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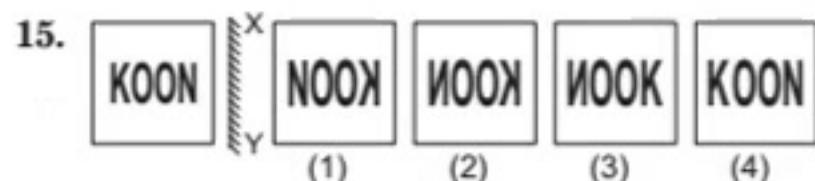
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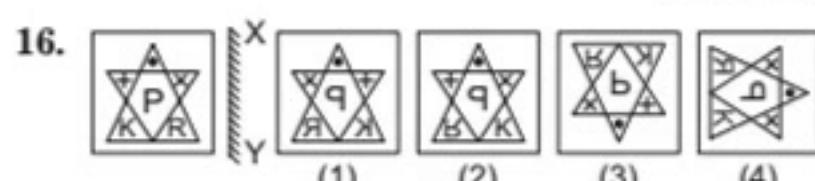
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**Ques. Fig. Ans. Fig.**

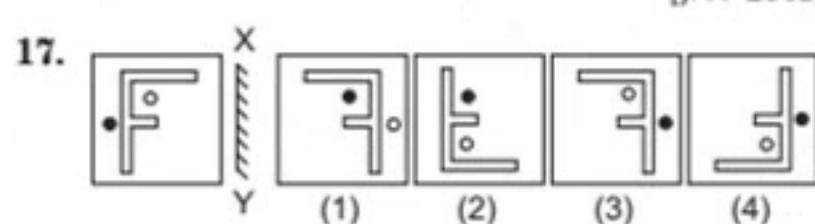
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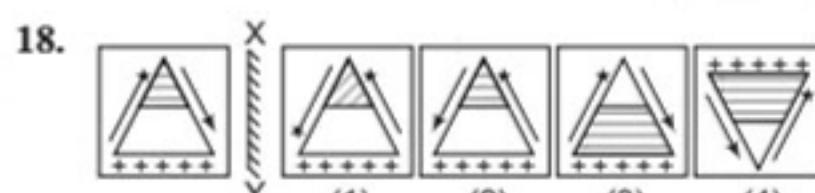
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[JNV 2013]



[JNV 2013]



[JNV 2013]

**Answers**

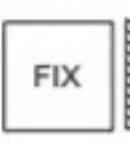
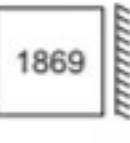
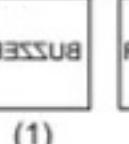
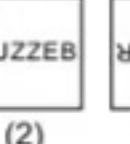
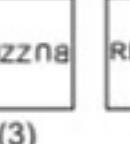
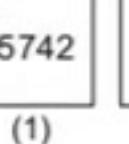
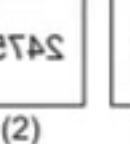
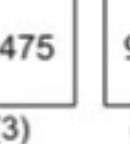
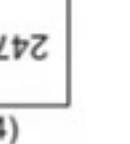
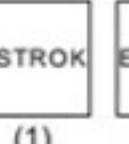
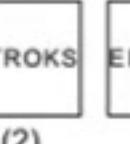
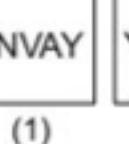
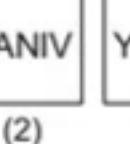
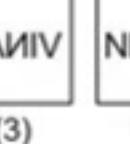
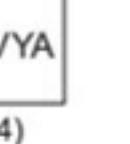
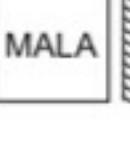
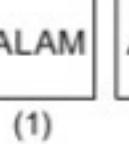
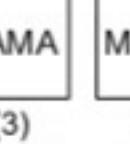
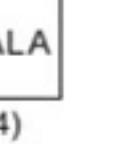
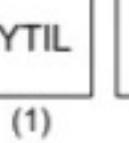
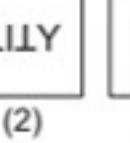
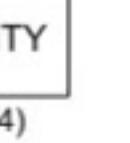
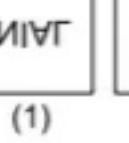
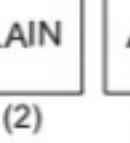
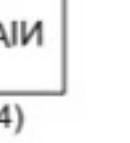
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11 (2)	12 (3)	13 (3)	14 (3)	15 (2)	16 (1)	17 (3)	18 (2)		

## Practice Exercise

**Directions (Q. Nos. 1-30)** In the given questions, there is a question figure and four answer figures (1), (2), (3) and (4). Find out the correct answer figure when a mirror is held on XY line.

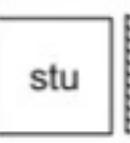
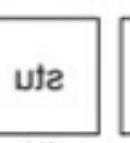
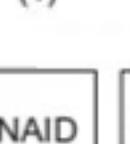
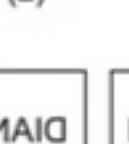
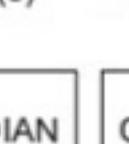
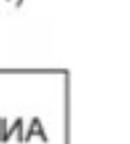
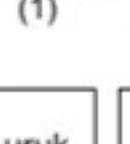
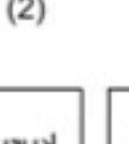
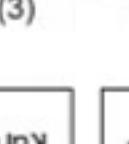
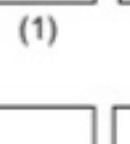
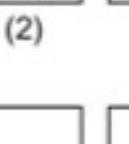
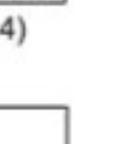
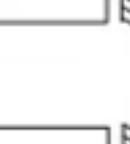
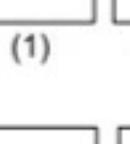
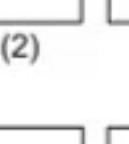
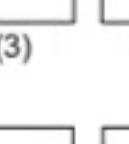
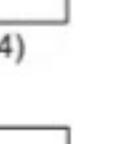
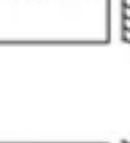
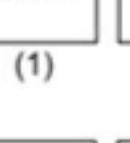
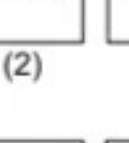
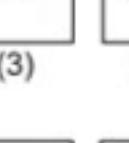
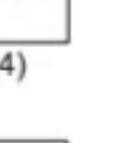
**Ques. Fig.**

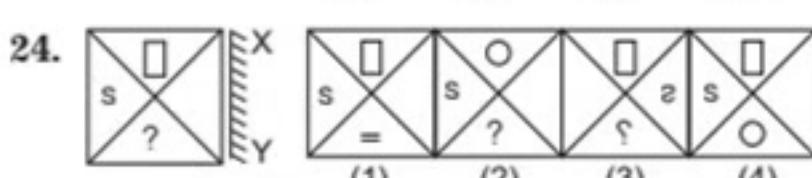
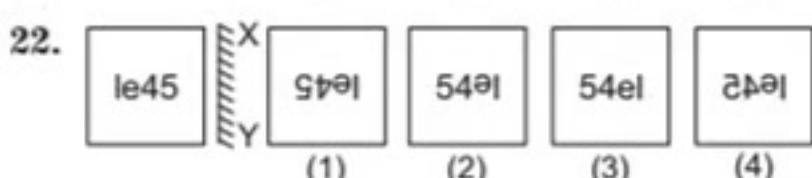
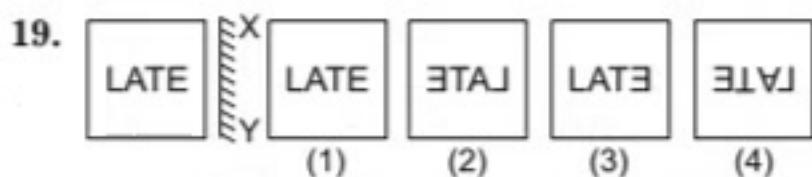
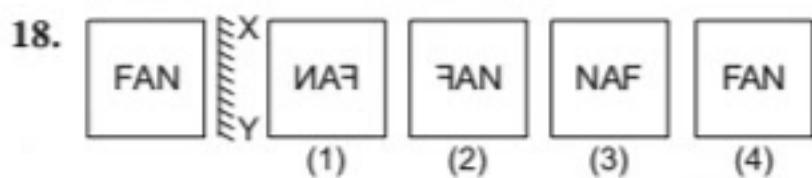
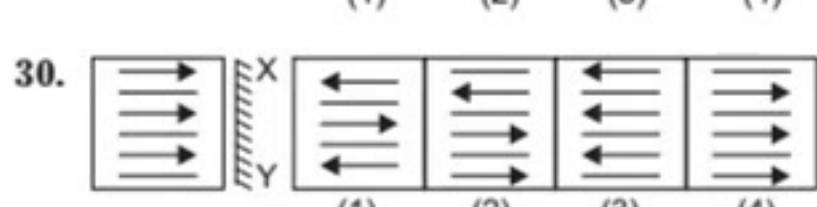
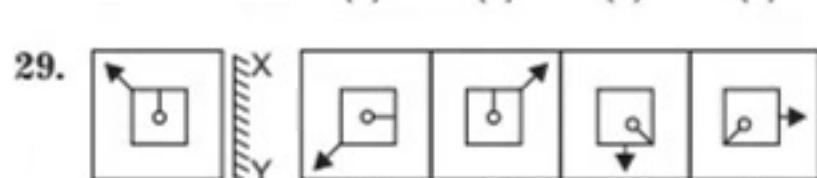
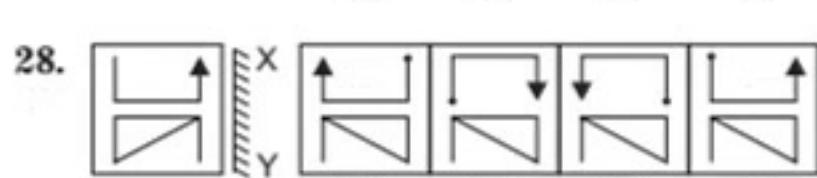
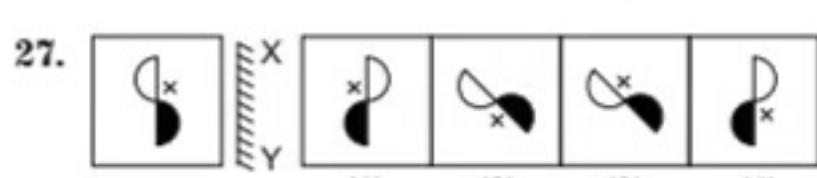
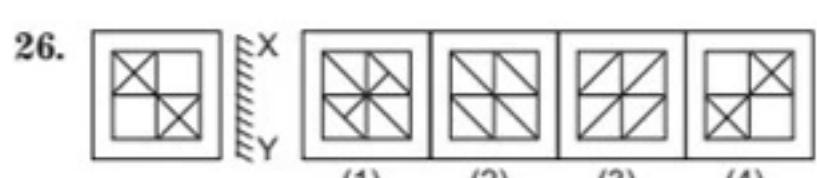
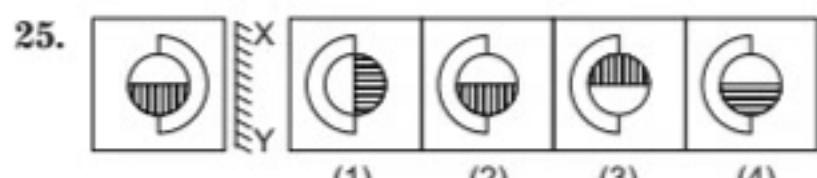
**Ans. Fig.**

- |    |   |        |  |  |  |   |
|----|---|--------|--|--|--|---|
| 1. |    | X<br>Y | <br>(1)   | <br>(2)   | <br>(3)   | <br>(4)   |
| 2. |   | X<br>Y | <br>(1)  | <br>(2)  | <br>(3)  | <br>(4)  |
| 3. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 4. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 5. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 6. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 7. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 8. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 9. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |

**Ques. Fig.**

**Ans. Fig.**

- |     |   |        |  |  |  |  |
|-----|---|--------|--|--|--|--|
| 10. |    | X<br>Y | <br>(1)   | <br>(2)   | <br>(3)   | <br>(4)   |
| 11. |   | X<br>Y | <br>(1)  | <br>(2)  | <br>(3)  | <br>(4)  |
| 12. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 13. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 14. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 15. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 16. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |
| 17. |  | X<br>Y | <br>(1) | <br>(2) | <br>(3) | <br>(4) |

**Ques. Fig.****Ans. Fig.****Ques. Fig.****Ans. Fig.****Answers**

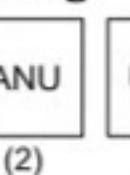
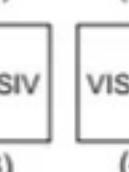
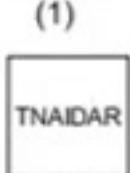
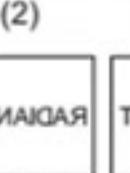
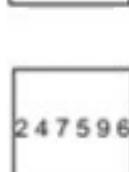
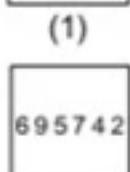
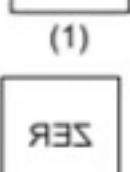
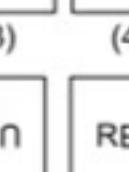
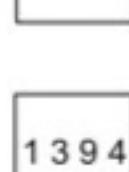
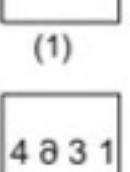
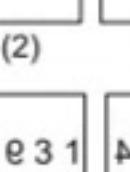
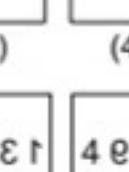
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11 (3)	12 (4)	13 (2)	14 (2)	15 (2)	16 (1)	17 (4)	18 (1)	19 (2)	20 (1)
21 (2)	22 (4)	23 (2)	24 (3)	25 (2)	26 (4)	27 (1)	28 (1)	29 (2)	30 (3)

# Self Practice

**Directions (Q.Nos. 1-15)** In the given questions, there is a question figure and four answer figures (1), (2), (3) and (4). Find out the correct answer figure when a mirror is held on XY line.

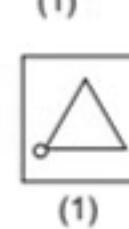
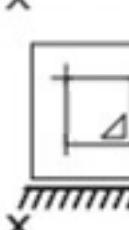
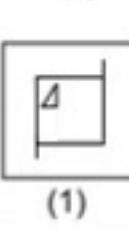
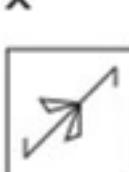
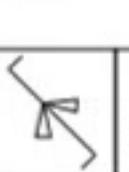
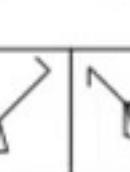
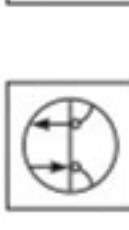
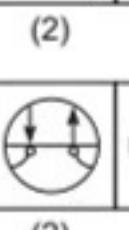
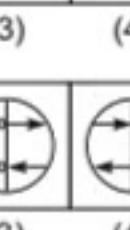
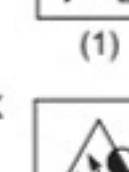
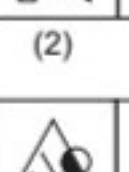
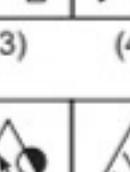
**Ques. Fig.**

**Ans. Fig.**

1.     
  
2.     
  
3.     
  
4.     
  
5.     
  
6.     
  
7.     
  
8.     

**Ques. Fig.**

**Ans. Fig.**

9.     
  
10.     
  
11.     
  
12.     
  
13.     
  
14.     
  
15.     

## Answers

1 (4)	2 (1)	3 (4)	4 (1)	5 (2)	6 (4)	7 (1)	8 (3)	9 (1)	10 (3)
11 (2)	12 (4)	13 (1)	14 (1)	15 (1)					

# CHAPTER 08

## PUNCHED HOLE PATTERN

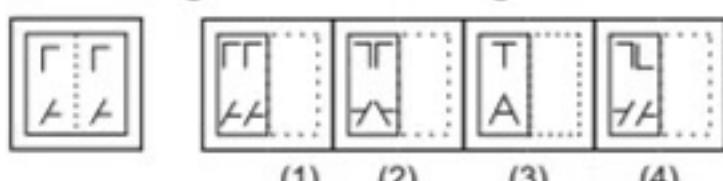
### Paper Folding

Problems based on ‘Paper folding’ involves folding a transparent sheet along a dotted line so that the design on one side of the dotted line gets superimposed on the design on the other side.

In such type of questions, a transparent sheet having a certain design and a dotted line on it is given. The candidates are required to identify the design (or pattern) that would be formed when the sheet is folded along the dotted line.

**Example 1.**

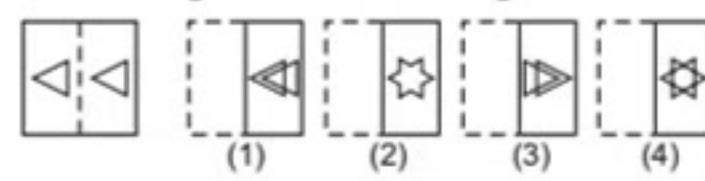
**Question figure      Answer figures**



When paper is folded along the dotted line the right half goes to left side.

**Example 2.**

**Question figure      Answer figures**



When paper is folded along the dotted line the left half goes to right side.

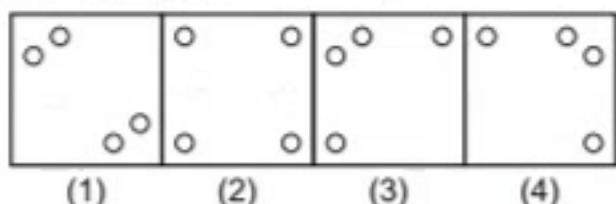
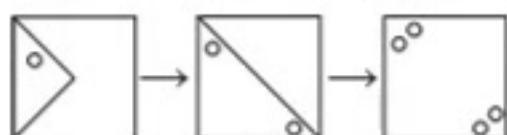
### Paper Cutting

In this type of question based on paper cutting, few figures are given showing the way in which a piece of paper is to be folded and then cut from a particular section. The dotted line is the reference line along which the paper is to be folded and the arrow indicates the direction of the fold.

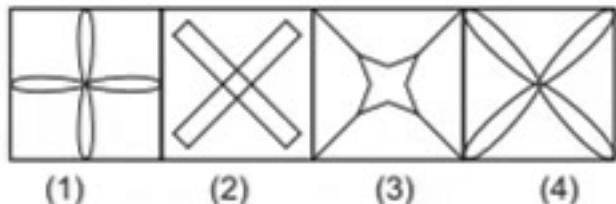
The candidates are required to identify the design or pattern that would be formed when the sheet is unfolded.

*Students, while solving these questions must kept following points in mind*

- Identify the way in which paper is folded.
- Determine the pattern of dotted lines, it shows the way in which a piece of paper is folded.
- Folded figure may cut from either of the sides as horizontally or vertically.

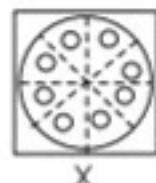
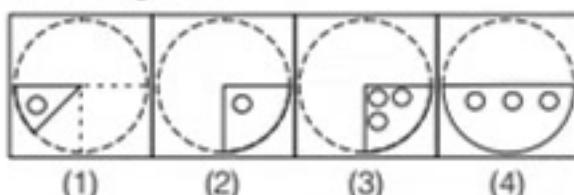
**Example 3. Question figures****Answer figure****Sol. (1)**

Answer figure (1) will appear when a piece of paper is folded and punched (cut) as shown in the question figure.

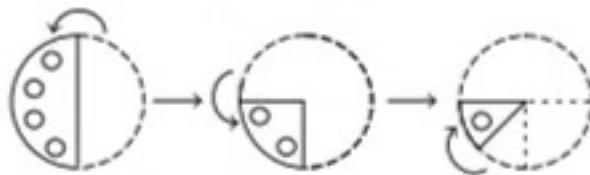
**Example 4. Question figures****Answer figure****Sol. (3)**

Answer figure (3) will appear when a piece of paper is folded and punched (cut) as shown in the question figure.

**Example 5.** A paper sheet is folded in a particular manner and several punches (cuts) are made. When unfolded the paper sheet looks like the question figure (X). From the given options select the one that follows the manner in which the paper is folded and punched.

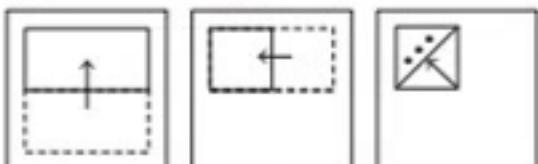
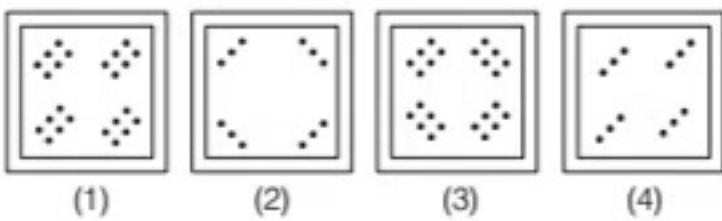
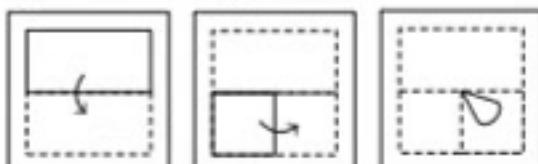
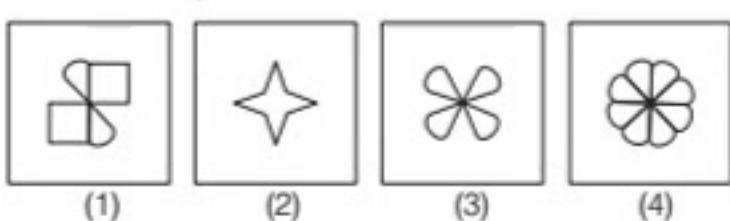
**Question Figure****Answer Figures**

**Sol. (1)** When we fold the question figure, then it looks like as answer figure (1).

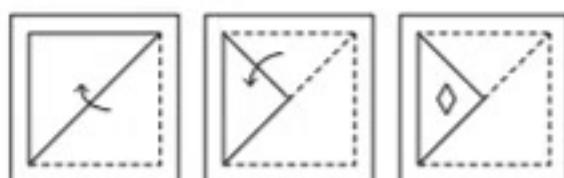


# Entrance Corner

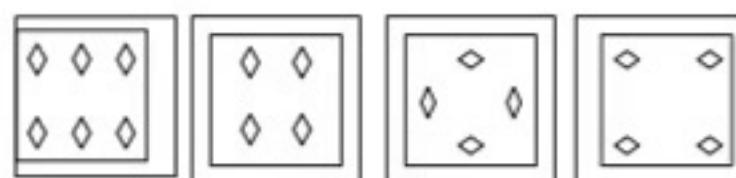
Directions (Q. Nos. 1-19) In the given questions, there is a question figure, four the answer figures (1), (2), (3) and (4). Find out which answer figure can appear when a piece of paper is folded, punches and open?

**1. Question figures****Answer figures****2. Question figures****Answer figures**

## 3. Question figures

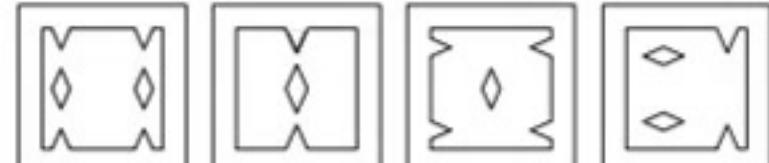
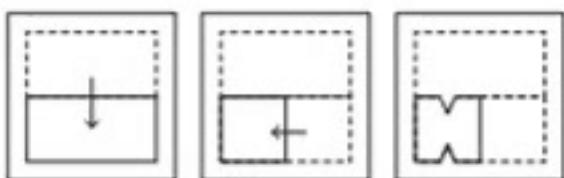


## Answer figures



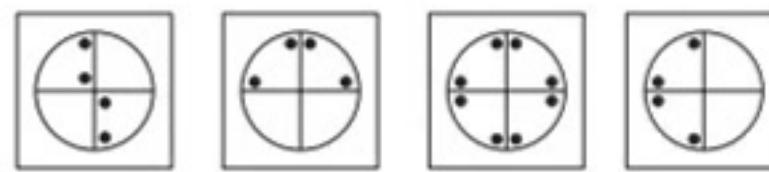
[JNV 2016]

4.



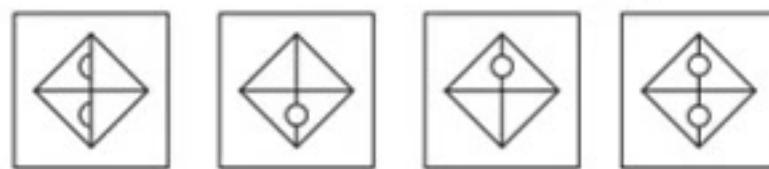
[JNV 2015]

5.



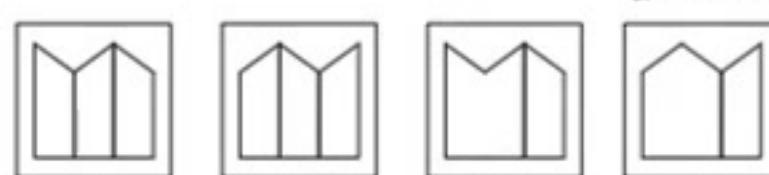
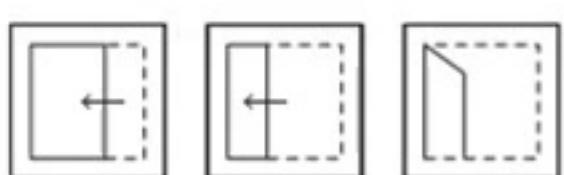
[JNV 2015]

6.



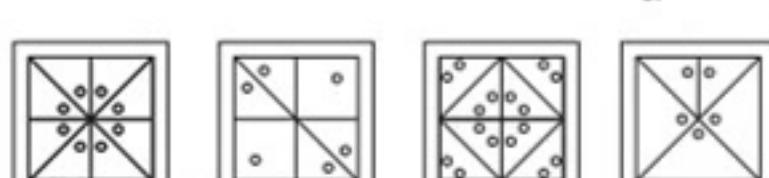
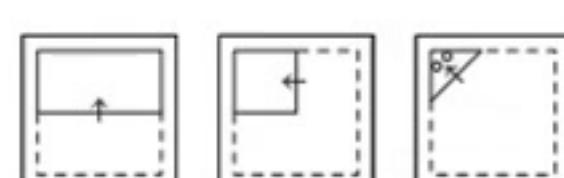
[JNV 2014]

7.



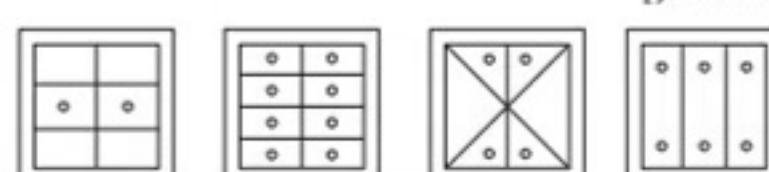
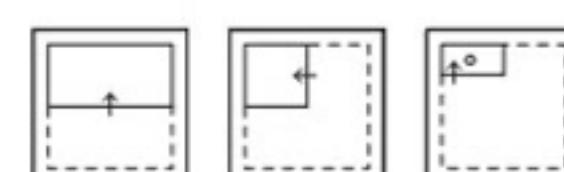
[JNV 2014]

8.



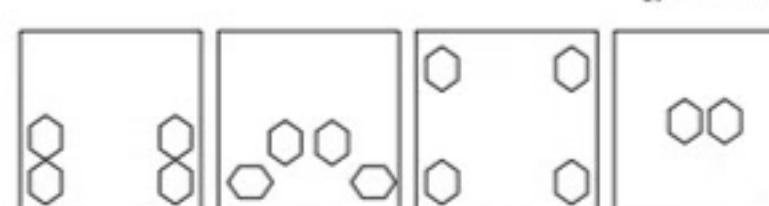
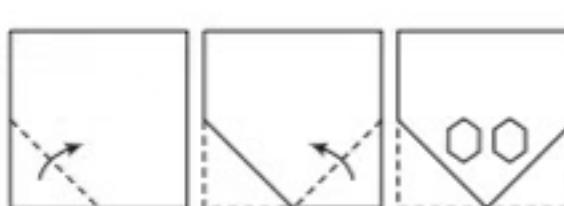
[JNV 2013]

9.

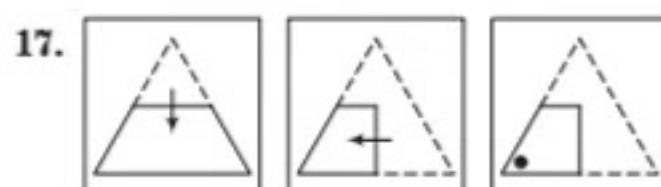
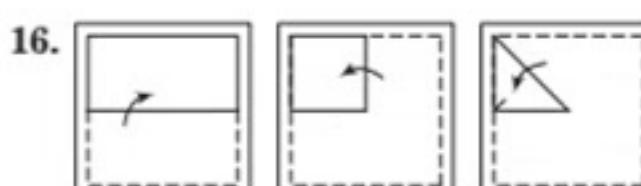
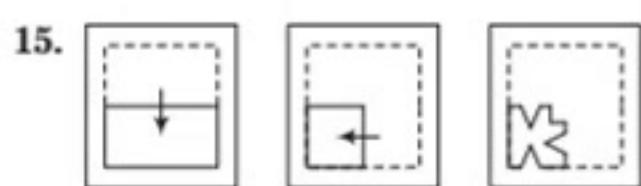
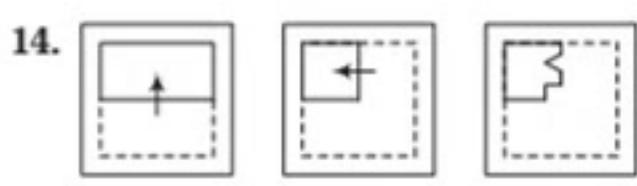
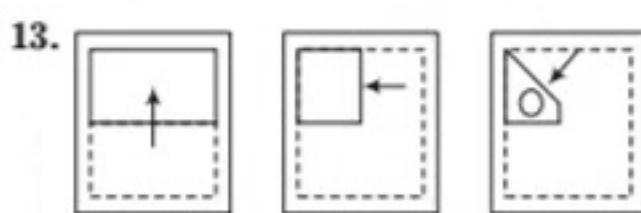
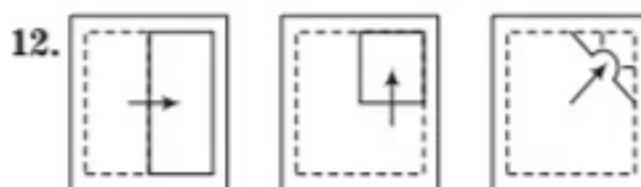
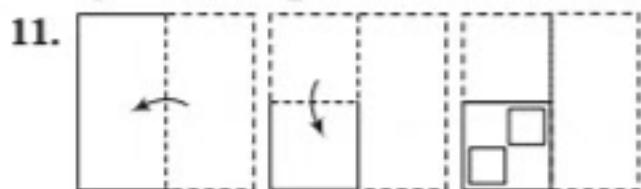
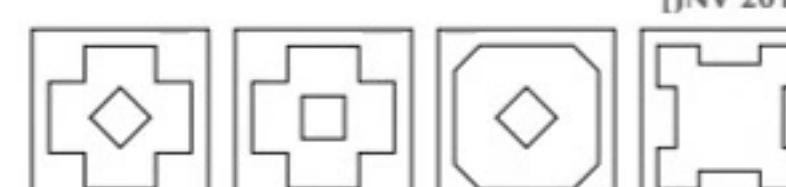
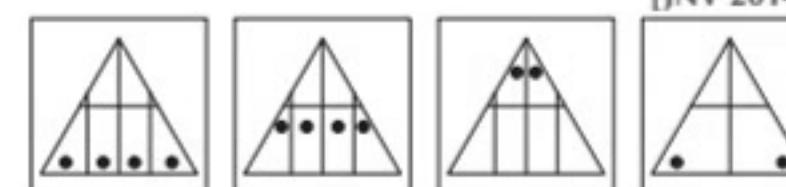
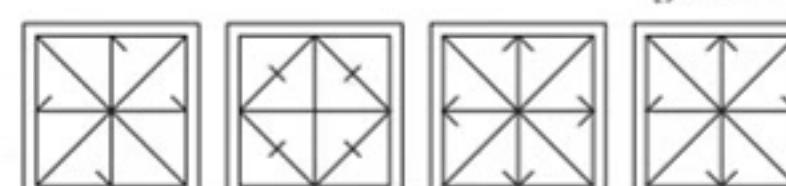
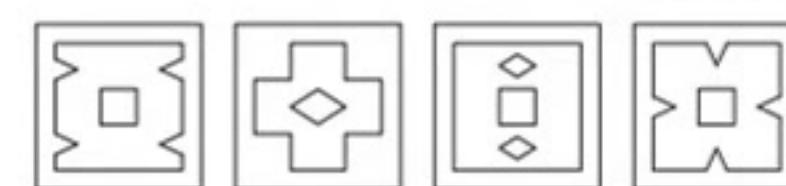
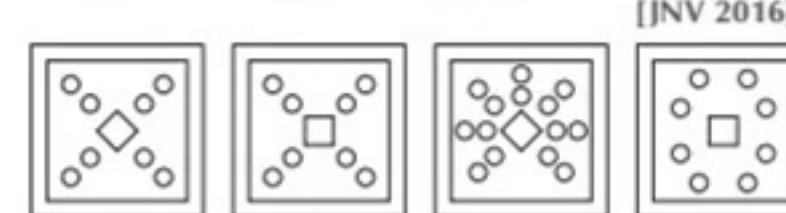
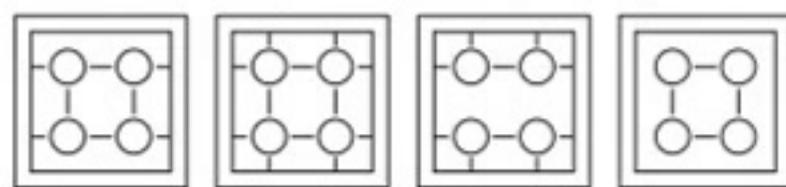
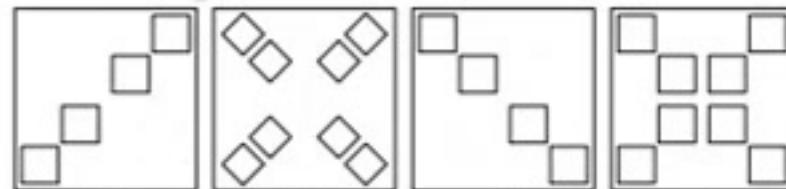


[JNV 2013]

10.



[JNV 2017]

**Question figures****Answer figures**

[JNV 2017]

[JNV 2016]

[JNV 2016]

[JNV 2015]

[JNV 2015]

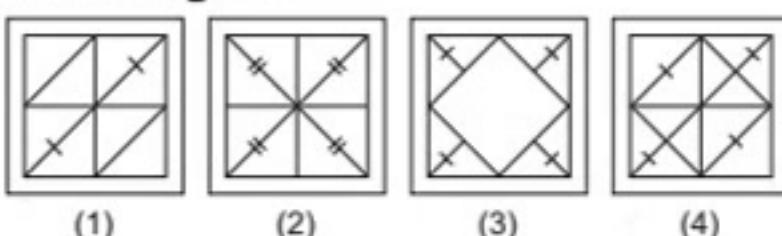
[JNV 2014]

[JNV 2014]

[JNV 2013]

**Question figures**

19.

**Answer figures**

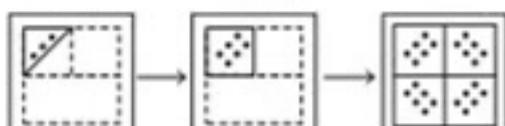
[JNV 2013]

**Answers**

1 (3)	2 (3)	3 (3)	4 (1)	5 (3)	6 (4)	7 (1)	8 (3)	9 (2)	10 (2)
11 (4)	12 (2)	13 (4)	14 (3)	15 (2)	16 (3)	17 (4)	18 (4)	19 (2)	

**Hints and Solutions**

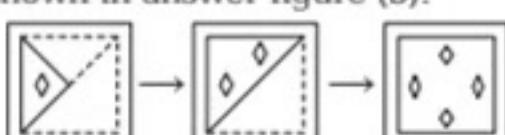
1. (3) When the paper is unfolded, it will appear as shown in answer figure (3).



2. (3) When the paper is unfolded, it will appear as shown in answer figure (3).



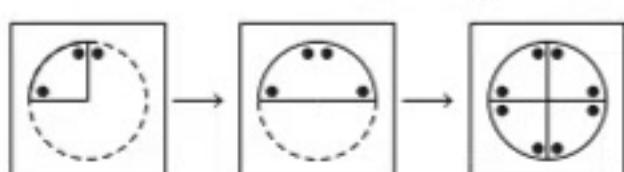
3. (3) When the paper is unfolded, it will appear as shown in answer figure (3).



4. (1) When the paper is unfolded, it will appear as shown in answer figure (1).



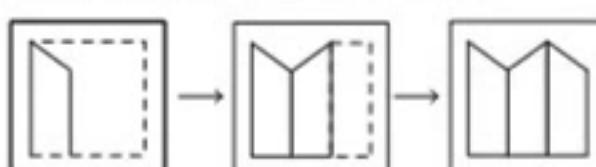
5. (3) When the paper is unfolded, it will appear as shown in answer figure (3).



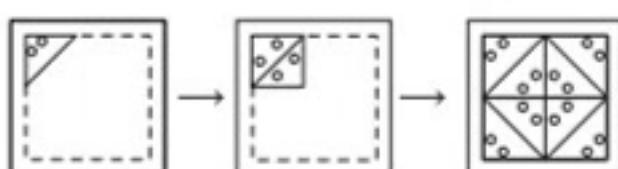
6. (4) When the paper is unfolded, it will appear as shown in answer figure (4).



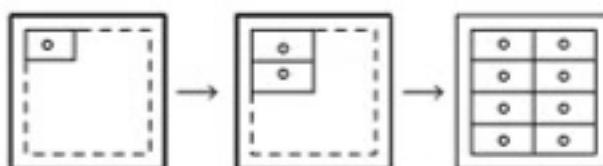
7. (1) When the paper is unfolded, it will appear as shown in answer figure (1).



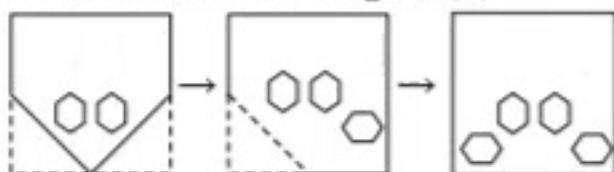
8. (3) When the paper is unfolded, it will appear as shown in answer figure (3).



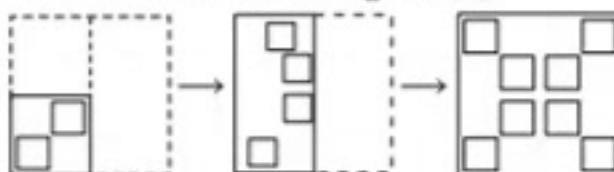
9. (2) When the paper is unfolded, it will appear as shown in answer figure (2).



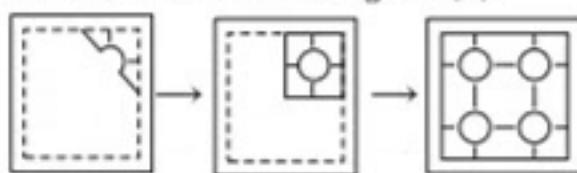
10. (2) When the paper is unfolded, it will appear as shown in answer figure (2)



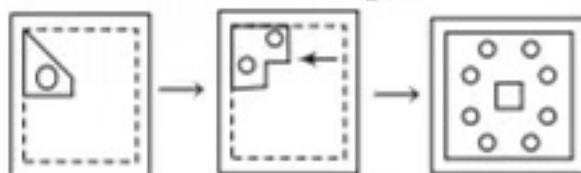
11. (4) When the paper is unfolded, it will appear as shown in answer figure (4)



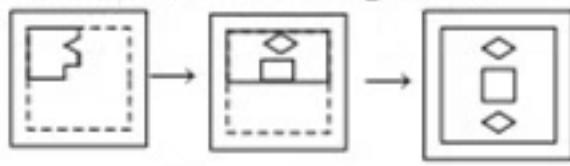
12. (2) When the paper is unfolded, it will appear as shown in answer figure (2).



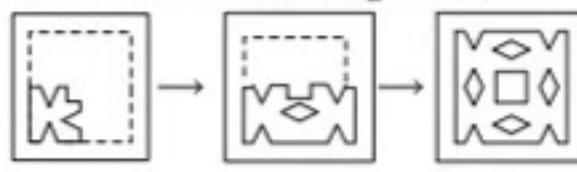
13. (4) When the paper is unfolded, it will appear as shown in answer figure (4)



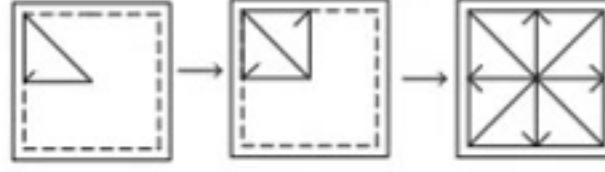
14. (3) When the paper is unfolded, it will appear as shown in answer figure (3)



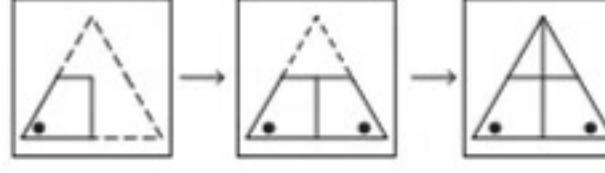
15. (2) When the paper is unfolded, it will appear as shown in answer figure (2).



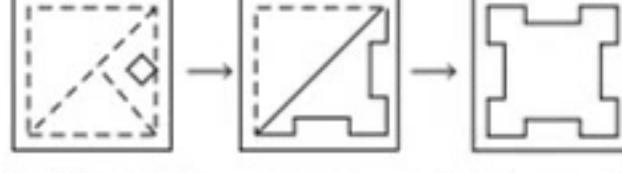
16. (3) When the paper is unfolded, it will appear as shown in answer figure (3)



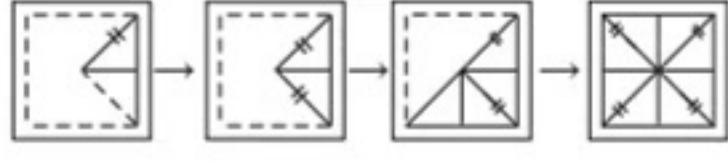
17. (4) When the paper is unfolded, it will appear as shown in answer figure (4)



18. (4) When the paper is unfolded, it will appear as shown in answer figure (4)



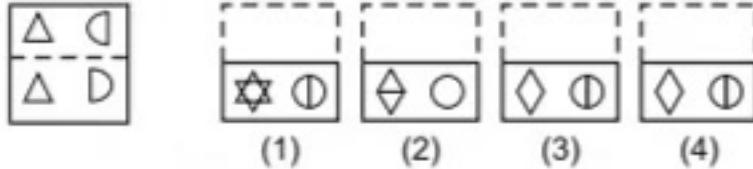
19. (2) When the paper is unfolded, it will appear as shown in answer figure (2).



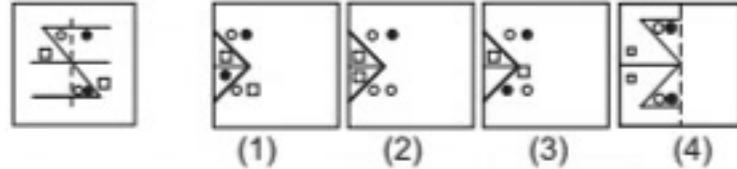
## Practice Exercise

Directions (Q. Nos. 1-12) In each of the following questions a square transparent sheet (question figure) with a pattern is given. Figure out from amongst the four alternatives as to how the pattern would appear when the transparent sheet (question figure) is folded at the dotted line?

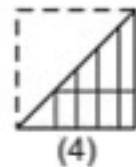
**1. Question figure      Answer figures**



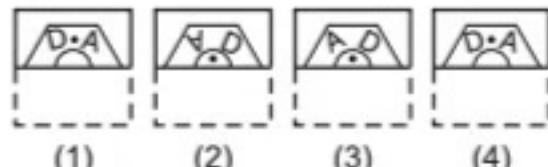
**3. Question figure      Answer figures**



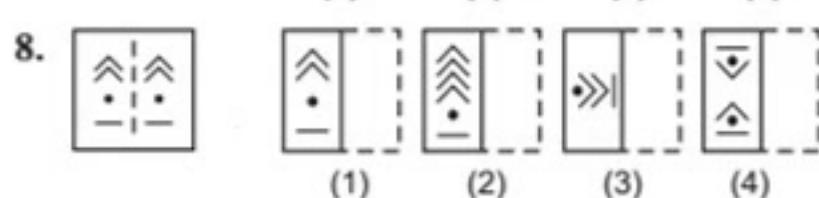
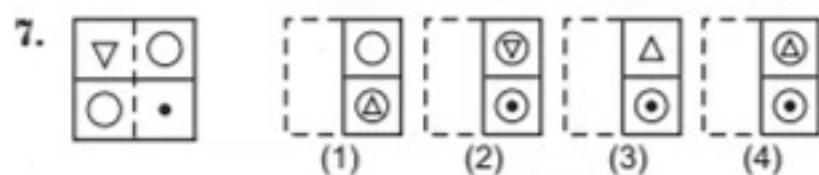
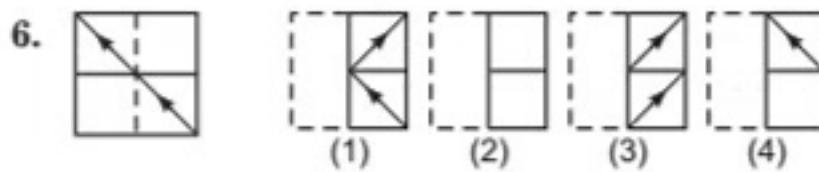
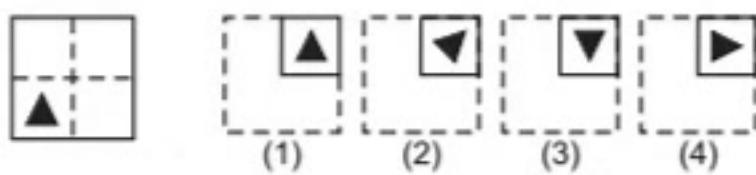
**2.**



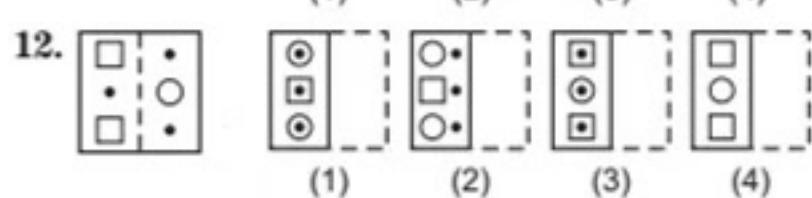
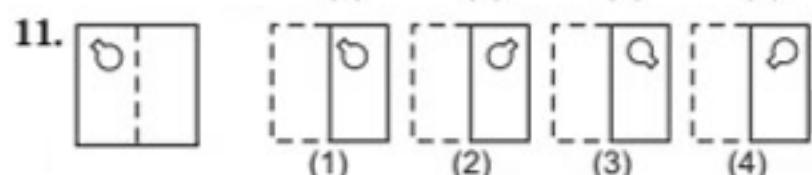
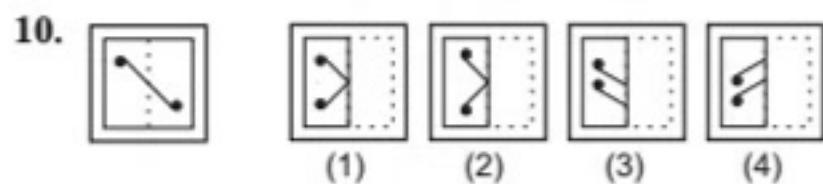
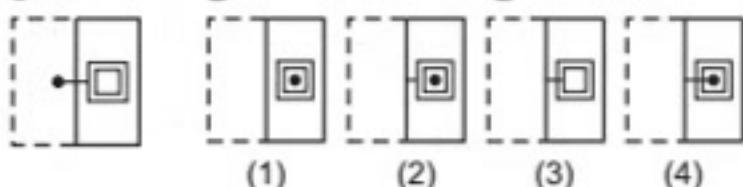
**4.**



## 5. Question figure      Answer figures

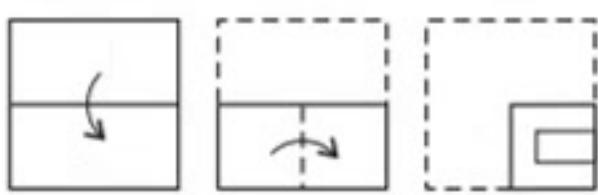


## 9. Question figure      Answer figures

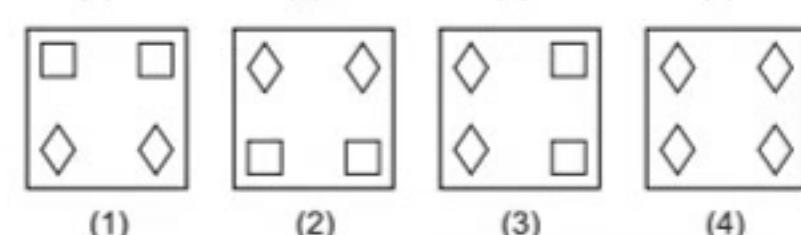
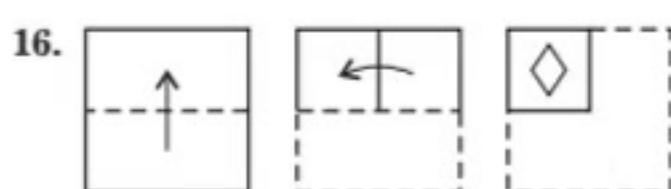
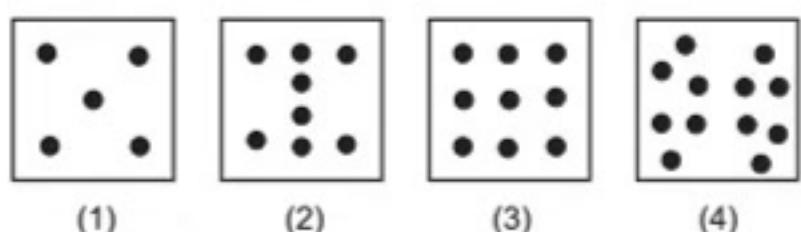
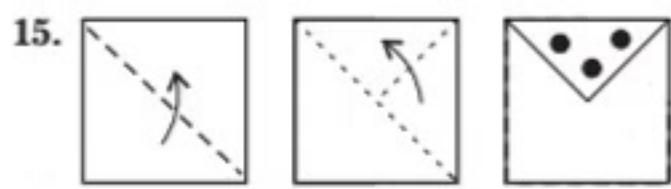
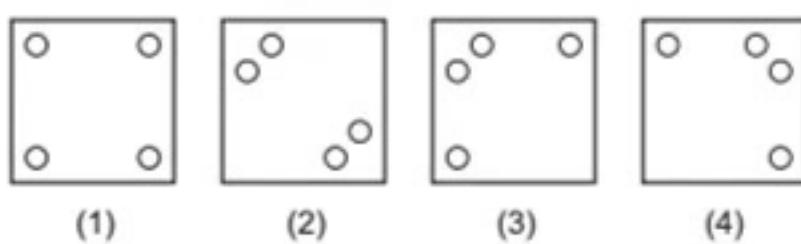
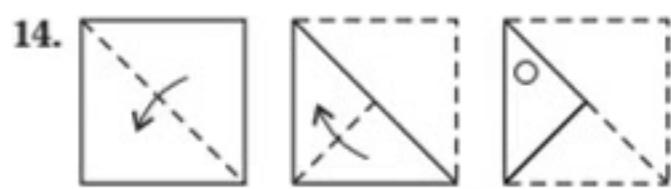
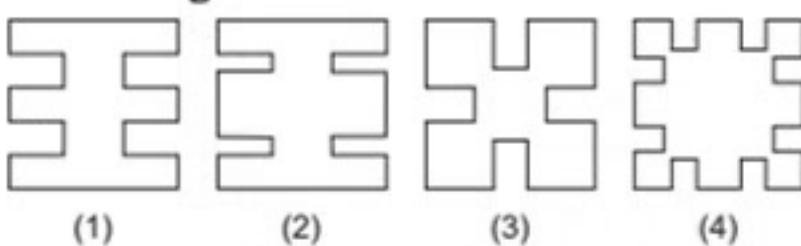


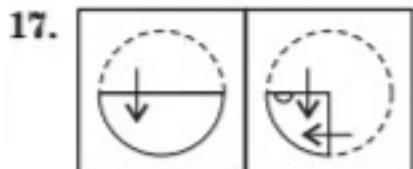
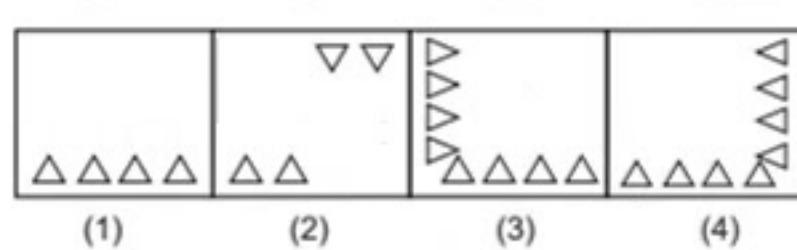
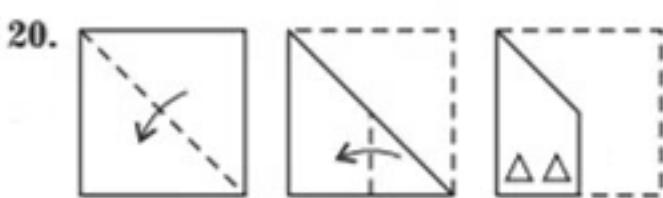
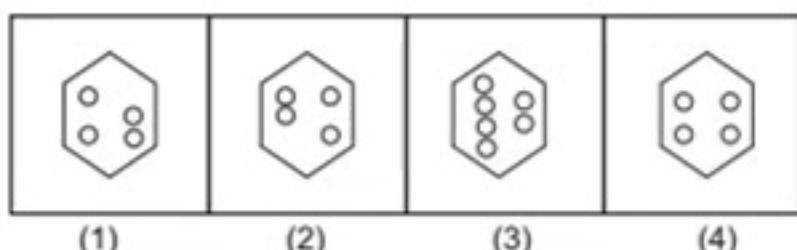
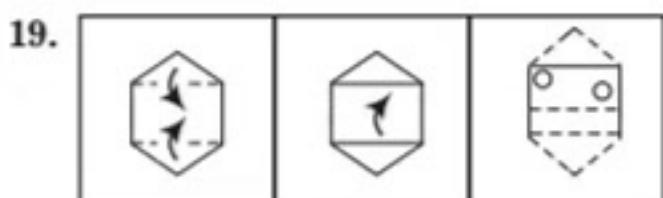
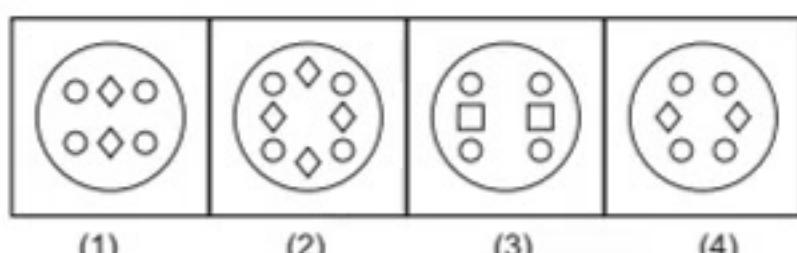
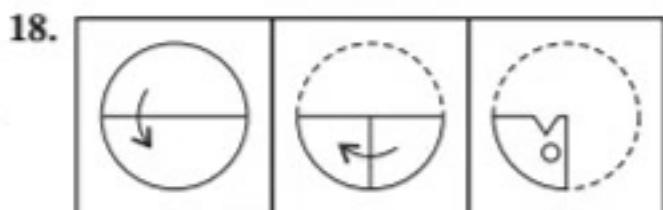
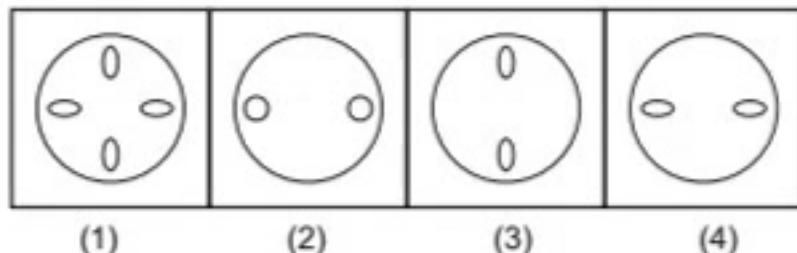
Directions (Q.Nos. 13-20) In the given questions, there is a question figure and four the answer figures. (1), (2), (3) and (4). Find out which answer figure can appear when a piece of paper is folded, punched and opened?

## 13. Question figures

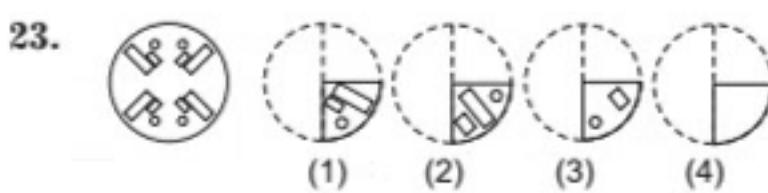
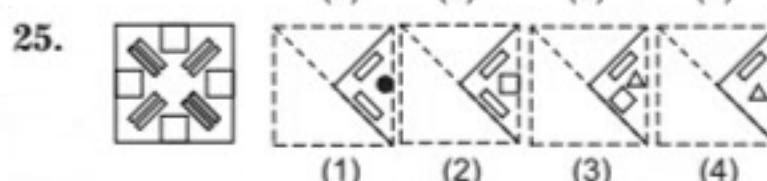
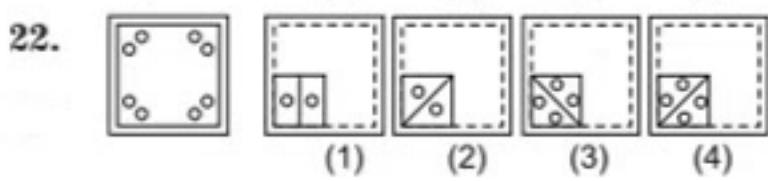
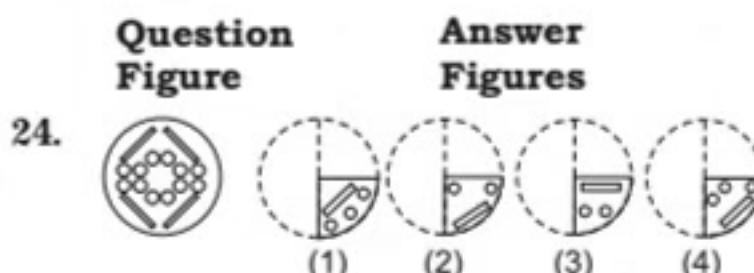
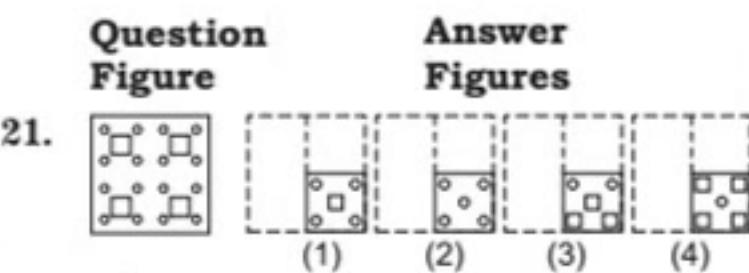


## Answer figures



**Question figures****Answer figures**

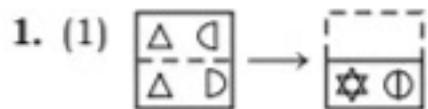
**Directions (Q. Nos. 21-25)** In each of the following question, a sheet (square / circle / triangle) of paper is folded and punch is made. When unfolded the paper sheet looks like the question figure. See the answer figures and select the one that follows the manner in which the paper is folded and punch is made.



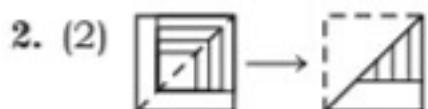
## Answers

<b>1 (1)</b>	<b>2 (1)</b>	<b>3 (4)</b>	<b>4 (2)</b>	<b>5 (3)</b>	<b>6 (1)</b>	<b>7 (2)</b>	<b>8 (1)</b>	<b>9 (4)</b>	<b>10 (1)</b>
<b>11 (2)</b>	<b>12 (3)</b>	<b>13 (1)</b>	<b>14 (2)</b>	<b>15 (4)</b>	<b>16 (4)</b>	<b>17 (2)</b>	<b>18 (4)</b>	<b>19 (3)</b>	<b>20 (4)</b>
<b>21 (1)</b>	<b>22 (2)</b>	<b>23 (1)</b>	<b>24 (4)</b>	<b>25 (2)</b>					

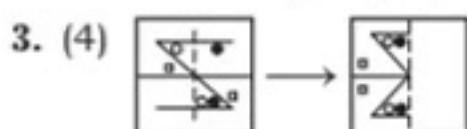
## Hints and Solutions



When a paper is folded along the dotted line the upper half figure goes to lower half.



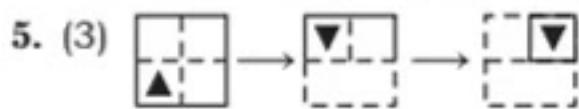
When a paper is folded along the dotted line the left half figure goes to right half.



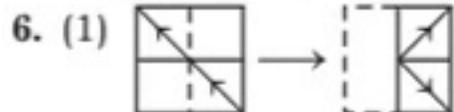
When a paper is folded along the dotted line the right half figure goes to left half.



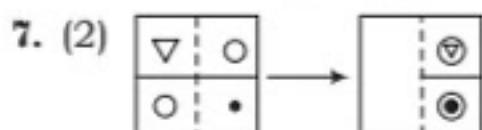
When a paper is folded along the dotted line the lower half figure goes to upper half.



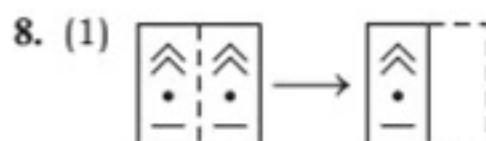
When a paper is folded along the dotted line the lower left figure goes to upper left and then goes to right corner.



When a paper is folded along the dotted line the left half figure goes to right half.



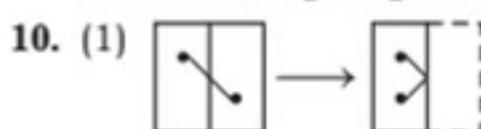
When a paper is folded along the dotted line the left half figure goes to right half.



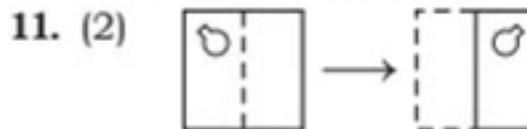
When a paper is folded along the dotted line the right half figure goes to left half.



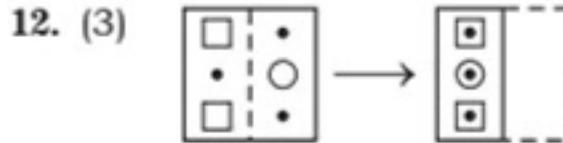
When a paper is folded along the dotted line the left half figure goes to right half.



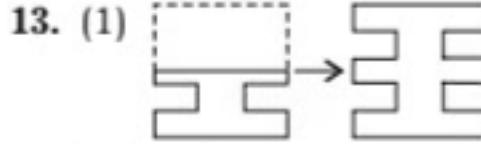
When a paper is folded along the dotted line the right half figure goes to left half.



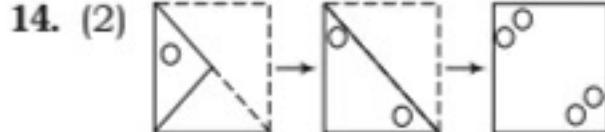
When a paper is folded along the dotted line the left half figure goes to right half.



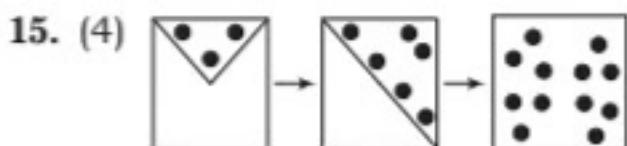
When a paper is folded along the dotted line the right half figure goes to left half.



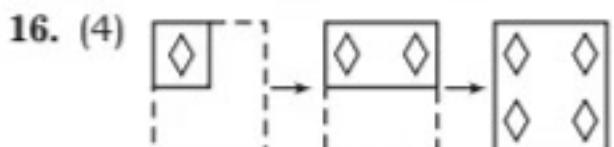
When the paper is unfolded, it will appear as shown in answer figure (1).



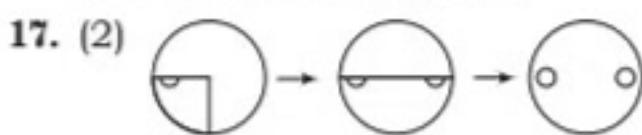
When the paper is unfolded, it will appear as shown in answer figure (2)



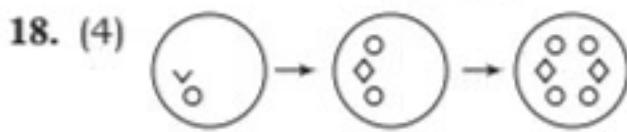
When the paper is unfolded, it will appear as shown in answer figure (4)



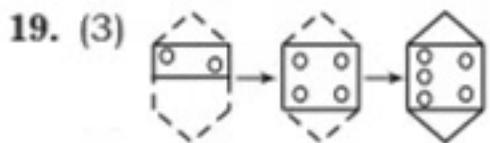
When the paper is unfolded, it will appear as shown in answer figure (4)



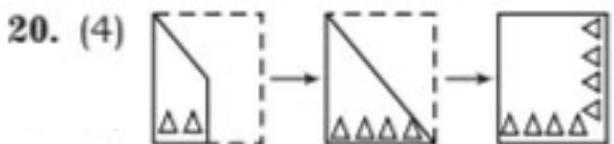
When the paper is unfolded, it will appear as shown in answer figure (2)



When the paper is unfolded, it will appear as shown in answer figure (4)

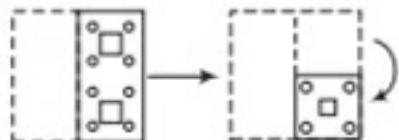


When the paper is unfolded, it will appear as shown in answer figure (3)

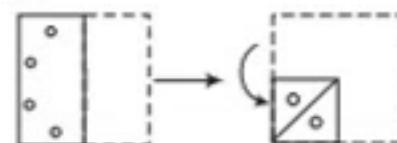


When the paper is unfolded, it will appear as shown in answer figure (4)

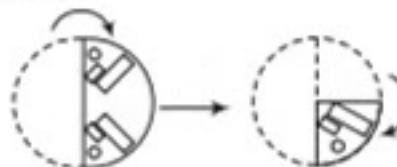
21. (1) The left half of the transparent sheet is folded along the dotted line and is placed on the right half. Then, the upper half of the sheet is folded along the dotted line and placed on lower half of the sheet. The figure, thus obtained resembles the figure as shown in option (1)



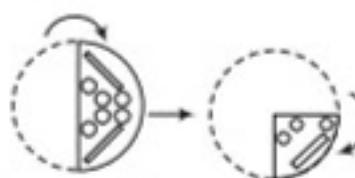
22. (2) The right half of the transparent sheet is folded along the dotted line and is placed on the left half. Then, the upper half of the sheet is folded along the dotted line and placed on lower half of the sheet. The figure, thus obtained resembles the figure as shown in option (2)



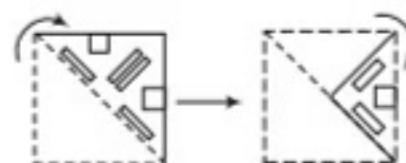
23. (1) The left half of the transparent sheet is folded along the dotted line and is placed on the right half. Then, the upper half of the sheet is folded along the dotted line and placed on lower half of the sheet. The figure, thus obtained resembles the figure as shown in option (1)



24. (4) The left half of the transparent sheet is folded along the dotted line and is placed on the right half. Then, the upper half of the sheet is folded along the dotted line and placed on lower half of the sheet. The figure, thus obtained resembles the figure as shown in option (4)



25. (2) The bottom left half of the transparent sheet is folded along the dotted line and is placed on the top right half. Then, the upper half of the sheet is folded along the dotted line and placed on lower half of the sheet. The figure, thus obtained resembles the figure as shown in option (2)





# CHAPTER 09

## SPACE VISUALISATION

Space visualisation or formation of figures refers to the use of pieces of different designs to construct a desired figure. It requires a high spacial visualisation skill, as different fragmented parts of a figure are combined to form the desired figure.

In this chapter, two sets of figures are provided namely question figure and answer figures. A candidate is asked to arrange the different components of the question figure. So as to form one of the answer figure. Students, while solving these questions must kept following points in mind

- First of all, mark all the designs with numbers and any unique code.
- Corelate all the designs with the help of marked numbers and codes.

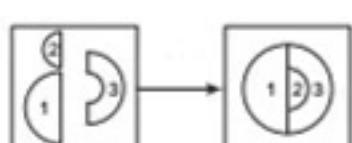
**Example 1.**

**Ques. Fig. Ans. Fig.**



(1) (2) (3) (4)

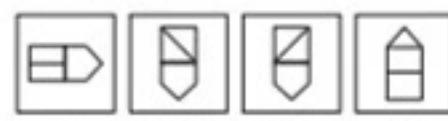
Sol. (4)



Answer figure (4) can be formed from the cut pieces of the question figure.

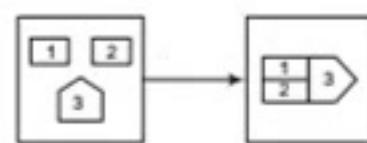
**Example 2.**

**Ques. Fig. Ans. Fig.**



(1) (2) (3) (4)

Sol. (1)

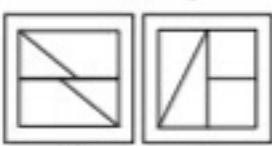


Answer figure (1) can be formed from the cut pieces of the question figure.

## Entrance Corner

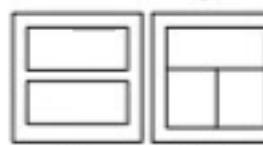
**Directions (Q.Nos. 1-19)** In the given questions, there is a question figure, observe the answer figure 1, 2, 3 and 4 and find out the answer figure which can be formed from the cut pieces of question figure?

**1. Ques. Fig. Answer Fig.**



(1) (2) (3) (4)

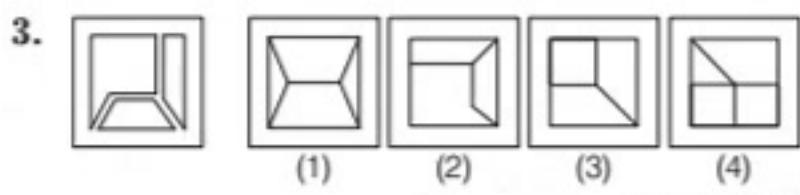
**2. Ques. Fig. Answer Fig.**



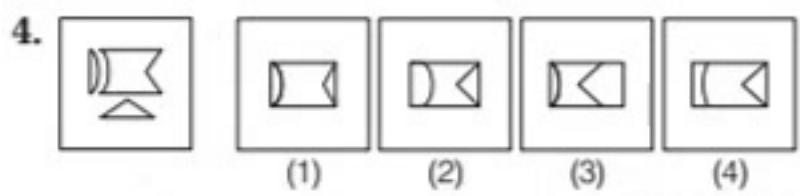
(1) (2) (3) (4)

[JNV 2019]

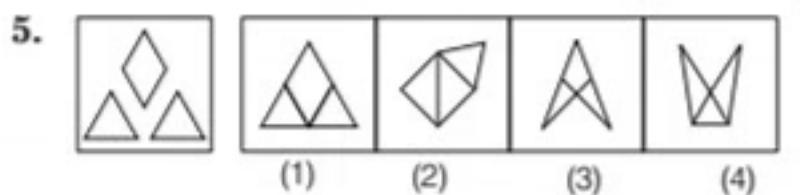
[JNV 2019]

**Ques. Fig.****Ans. Fig.**

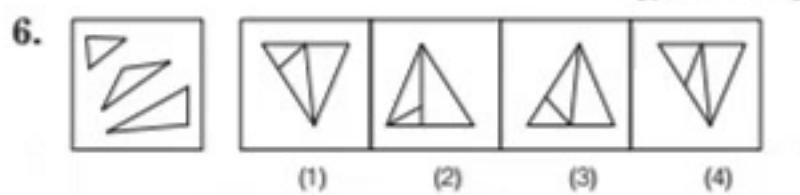
[JNV 2019]



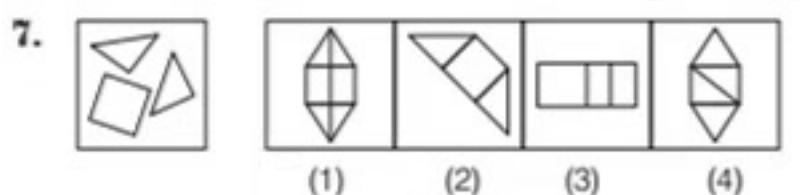
[JNV 2019]



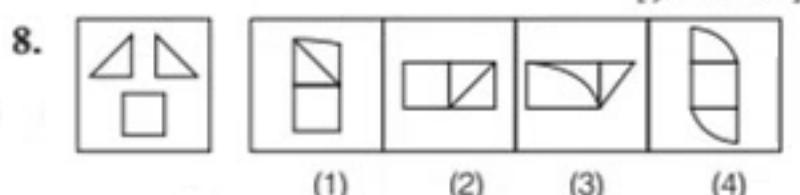
[JNV 2019]



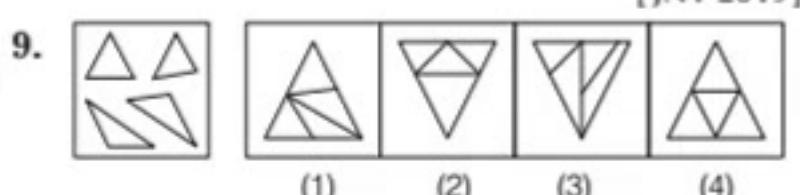
[JNV 2019]



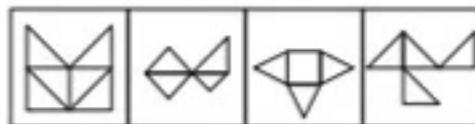
[JNV 2019]



[JNV 2019]



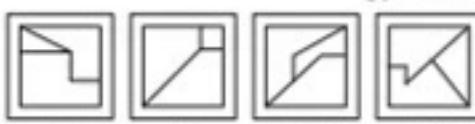
[JNV 2019]

**Ques. Fig.**

[JNV 2017]



[JNV 2017]



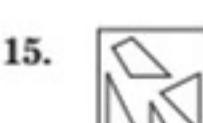
[JNV 2016]



[JNV 2016]



[JNV 2015]



[JNV 2015]



[JNV 2013]



[JNV 2013]

**Answers**

<b>1</b> (3)	<b>2</b> (2)	<b>3</b> (2)	<b>4</b> (1)	<b>5</b> (1)	<b>6</b> (4)	<b>7</b> (2)	<b>8</b> (2)	<b>9</b> (1)	<b>10</b> (4)
<b>11</b> (2)	<b>12</b> (1)	<b>13</b> (1)	<b>14</b> (3)	<b>15</b> (2)	<b>16</b> (2)	<b>17</b> (1)			

## Practice Exercise

**Directions (Q.Nos. 1-20)** In the given questions, there is a problem figure, observe the answer figure (1), (2), (3) and (4) and find out the answer figure which can be formed from the cut pieces of problem figure?

Ques. Fig.	Ans. Fig.	Ques. Fig.	Ans. Fig.
1.		10.	
2.		11.	
3.		12.	
4.		13.	
5.		14.	
6.		15.	
7.		16.	
8.		17.	
9.		18.	

### Answers

1 (3)	2 (1)	3 (1)	4 (2)	5 (2)	6 (2)	7 (4)	8 (1)	9 (3)	10 (1)
11 (2)	12 (4)	13 (1)	14 (1)	15 (1)	16 (4)	17 (1)	18 (1)	19 (4)	20 (1)

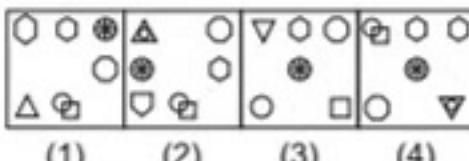
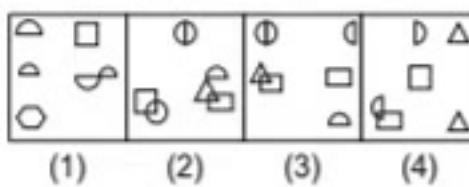
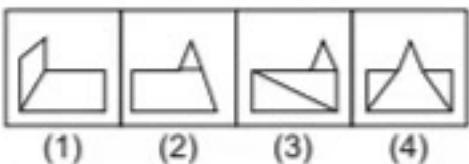
# Self Practice

**Directions (Q.Nos. 1-10)** In the given questions, there is a question figure, observe the answer figure (1), (2), (3) and (4) and find out the answer figure which can be formed from the pieces of question figure?

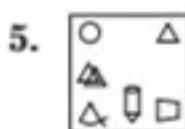
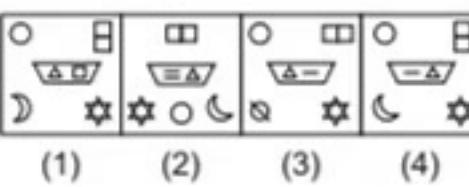
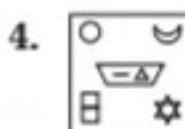
**Que. Fig.**



**Ans. Fig.**



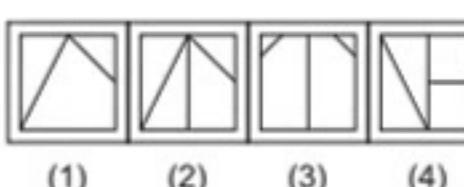
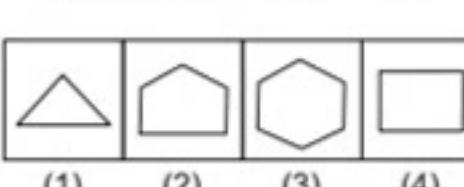
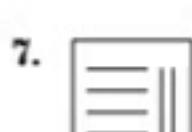
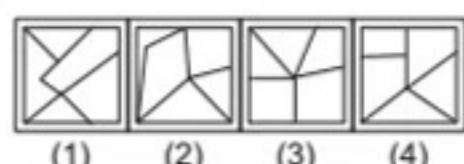
**Que. Fig. Ans. Fig.**



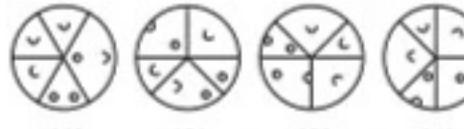
**Ques. Fig.**



**Ans. Fig.**



**10.**

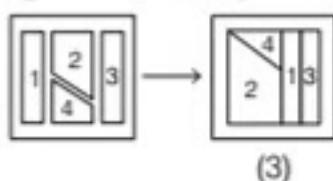


## Answers

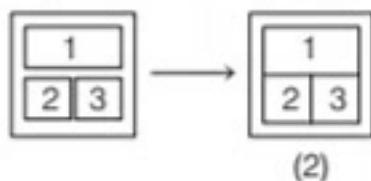
1 (3)	2 (2)	3 (2)	4 (4)	5 (3)	6 (3)	7 (3)	8 (2)	9 (2)	10 (1)
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## Hints and Solutions

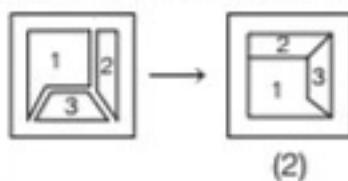
1. Answer figure (3) can be formed from the cut out pieces given in the question figure.



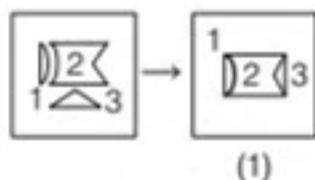
2. Answer figure (2) can be formed from the cut out pieces given in the question figure.



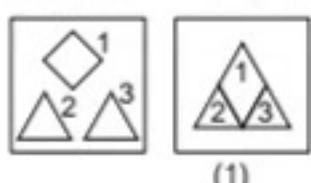
3. Answer figure (2) can be formed from the cut out pieces given in the question figure.



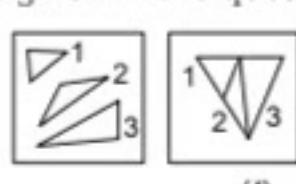
4. Answer figure (1) can be formed from the cut out pieces given in the question figure.



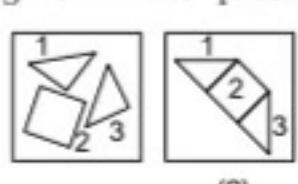
5. Answer figure (1) can be formed from the cut out pieces given in the question figure.



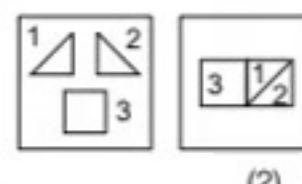
6. Answer figure (4) can be formed from the cut out pieces given in the question figure.



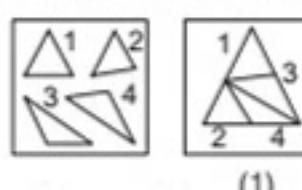
7. Answer figure (2) can be formed from the cut out pieces given in the question figure.



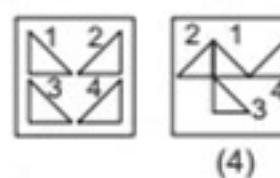
8. Answer figure (2) can be formed from the cut out pieces given in the question figure.



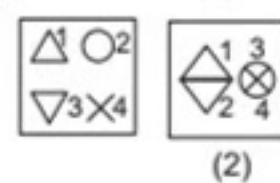
9. Answer figure (1) can be formed from the cut out pieces given in the question figure.



10. Answer figure (4) can be formed from the cut out pieces given in the question figure.



11. Answer figure (2) can be formed from the cut out pieces given in the question figure.



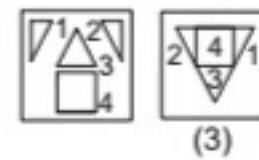
12. Answer figure (1) can be formed from the cut out pieces given in the question figure.



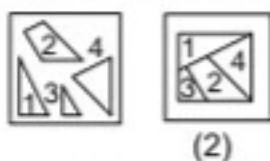
13. Answer figure (1) can be formed from the cut out pieces given in the question figure.



14. Answer figure (3) can be formed from the cut out pieces given in the question figure.

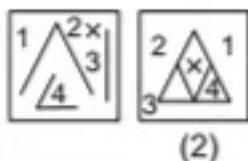


15. Answer figure (2) can be formed from the cut out pieces given in the question figure.



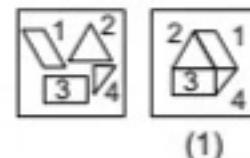
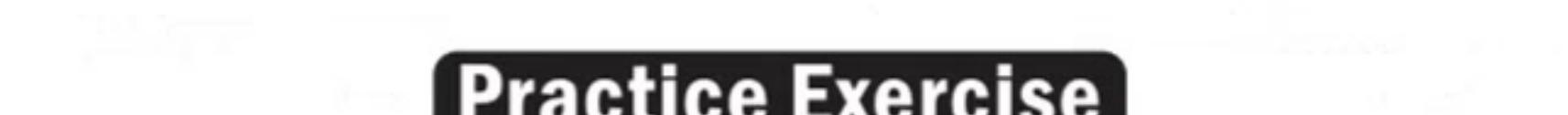
(2)

16. Answer figure (2) can be formed from the cut out pieces given in the question figure.



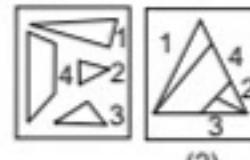
(2)

17. Answer figure (1) can be formed from the cut out pieces given in the question figure.



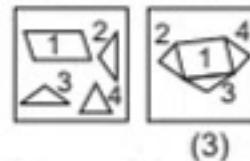
(1)

18. Answer figure (2) can be formed from the cut out pieces given in the question figure.



(2)

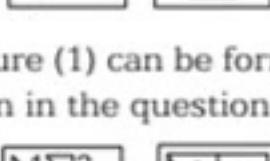
19. Answer figure (3) can be formed from the cut out pieces given in the question figure.



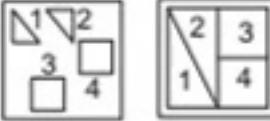
(3)

## Practice Exercise

1. Answer figure (3) can be formed from the cut pieces given in the question figure.



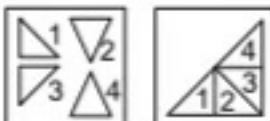
2. Answer figure (1) can be formed from the cut pieces given in the question figure.



3. Answer figure (1) can be formed from the cut pieces given in the question figure.



4. Answer figure (2) can be formed from the cut pieces given in the question figure.



5. Answer figure (2) can be formed from the cut pieces given in the question figure.



6. Answer figure (2) can be formed from the cut pieces given in the question figure.



7. Answer figure (4) can be formed from the cut pieces given in the question figure.



8. Answer figure (1) can be formed from the cut pieces given in the question figure.



9. Answer figure (3) can be formed from the cut pieces given in the question figure.



10. Answer figure (1) can be formed from the cut pieces given in the question figure.



11. Answer figure (2) can be formed from the cut pieces given in the question figure.



12. Answer figure (4) can be formed from the cut pieces given in the question figure.



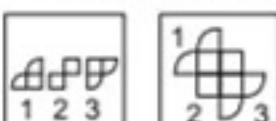
13. Answer figure (1) can be formed from the cut pieces given in the question figure.



14. Answer figure (1) can be formed from the cut pieces given in the question figure.



15. Answer figure (1) can be formed from the cut pieces given in the question figure.



16. Answer figure (4) can be formed from the cut pieces given in the question figure.



17. Answer figure (1) can be formed from the cut pieces given in the question figure.



18. Answer figure (1) can be formed from the cut pieces given in the question figure.



19. Answer figure (4) can be formed from the cut pieces given in the question figure.



20. Answer figure (1) can be formed from the cut pieces given in the question figure.



# **CHAPTER**

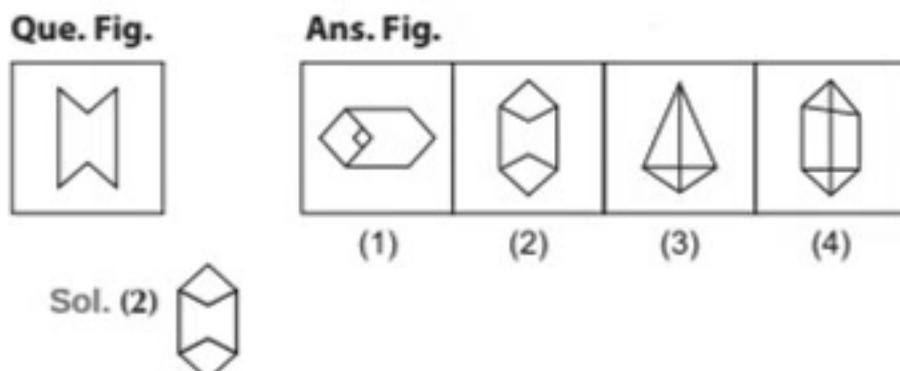
# **10**

# **EMBEDDED FIGURE**

A figure is said to be hidden or embedded in another figure when the second figure completely contains the first figure. In such type of questions a question figure is given followed by four answer figures in such a way that question figure is hidden or embedded in one of the answer figures.

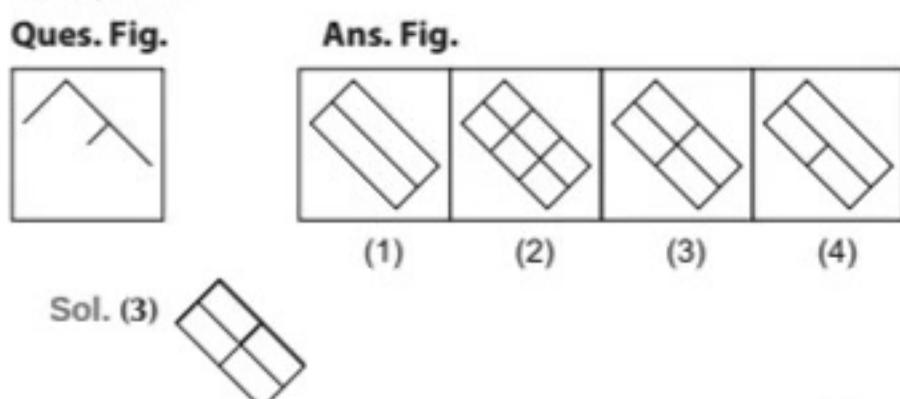
The students has to select such a figure in which question figure is hidden. This kind of tests are designed to test the students visual ability that how quickly he/she can recognise the figure that is hidden among other figures.

**Example 1.**



Hence, question figure is hidden in answer figure (2).

**Example 2.**

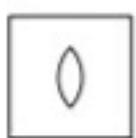


Hence, question figure is hidden in answer figure (3).

# Entrance Corner

**Directions (Q.Nos. 1-16)** In the given questions, there is a question figure and four answer figures (1), (2), (3) and (4). Select the one in which the question figure is hidden.

**1. Ques. Fig.**



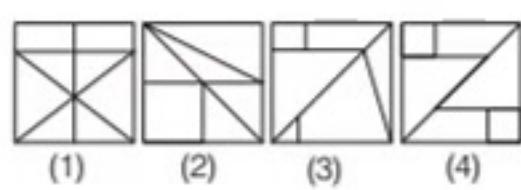
**Ans. Fig.**

**9. Ques. Fig.**



[ JNV 2019 ]

**Ans. Fig.**

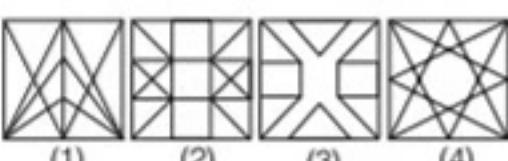
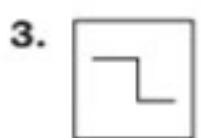


[ JNV 2019 ]

**10.**

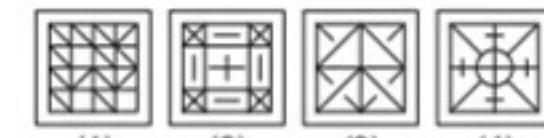
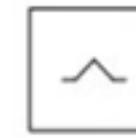


[ JNV 2017 ]



[ JNV 2019 ]

**11.**



[ JNV 2017 ]

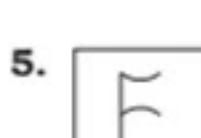


[ JNV 2018 ]

**12.**

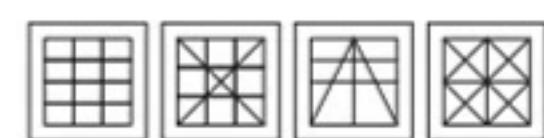


[ JNV 2016 ]

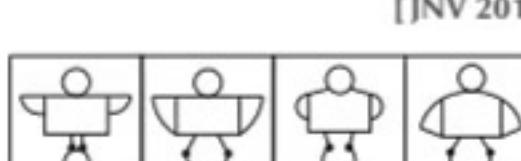


[ JNV 2018 ]

**13.**

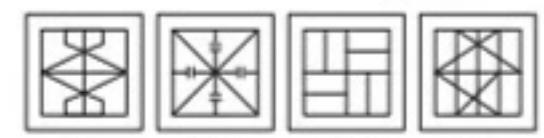


[ JNV 2015 ]

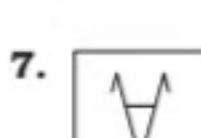


[ JNV 2018 ]

**14.**



[ JNV 2015 ]

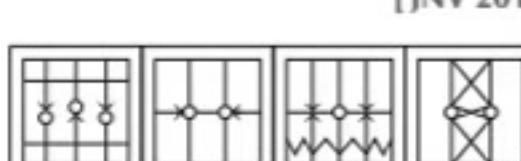
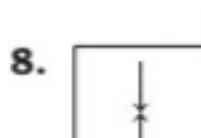


[ JNV 2018 ]

**15.**

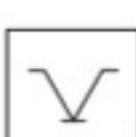


[ JNV 2014 ]



[ JNV 2018 ]

**16.**



[ JNV 2013 ]

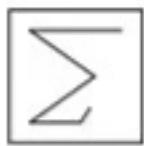
## Answers

<b>1</b> (2)	<b>2</b> (1)	<b>3</b> (2)	<b>4</b> (1)	<b>5</b> (3)	<b>6</b> (1)	<b>7</b> (3)	<b>8</b> (3)	<b>9</b> (3)	<b>10</b> (1)
<b>11</b> (1)	<b>12</b> (3)	<b>13</b> (1)	<b>14</b> (4)	<b>15</b> (3)	<b>16</b> (1)				

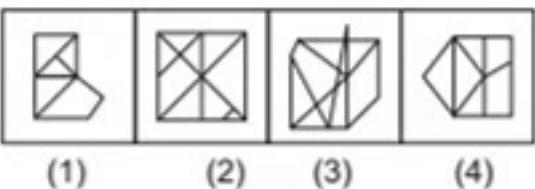
## Practice Exercise

Directions (Q.Nos. 1-26) In the given questions, there is a question figure and four answer figures (1), (2), (3) and (4). Select the one in which the question figure is hidden.

**1. Ques. Fig.**



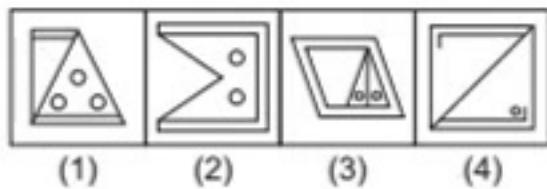
**Ans. Fig.**



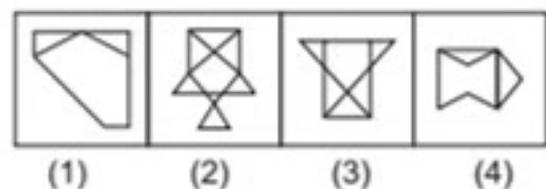
**7. Ques. Fig.**



**Ans. Fig.**



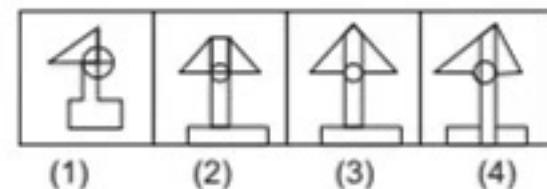
**2.**



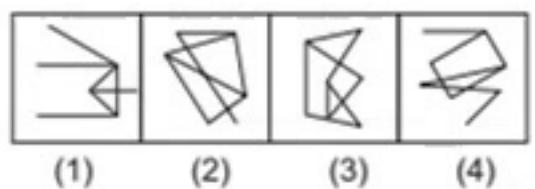
**8.**



**Ans. Fig.**



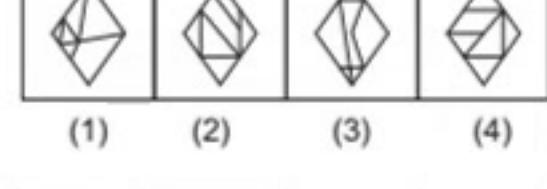
**3.**



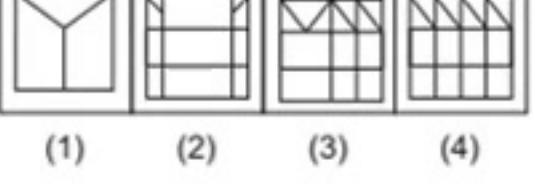
**9.**



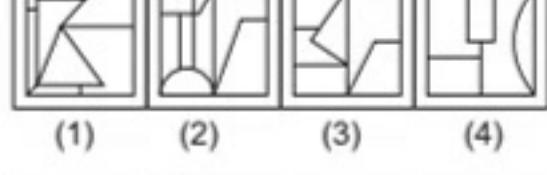
**Ans. Fig.**



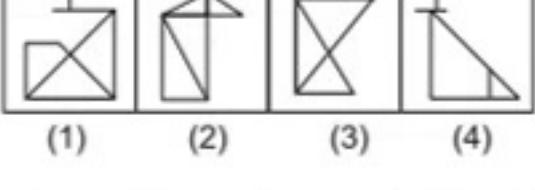
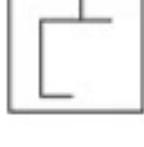
**4.**



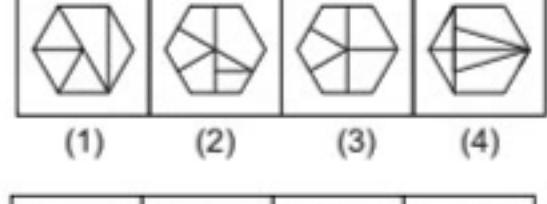
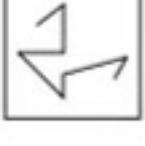
**10.**



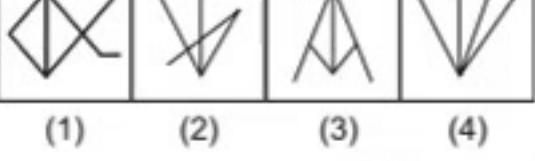
**5.**



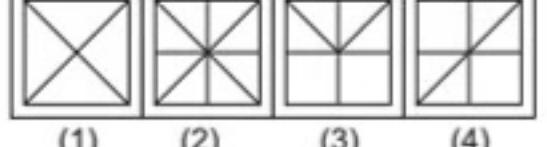
**11.**



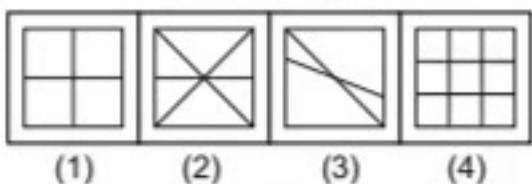
**6.**



**12.**

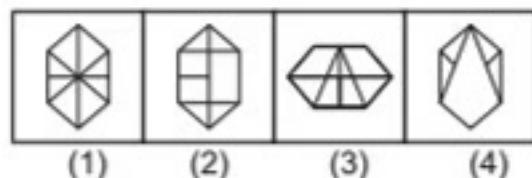


13. Ques. Fig.

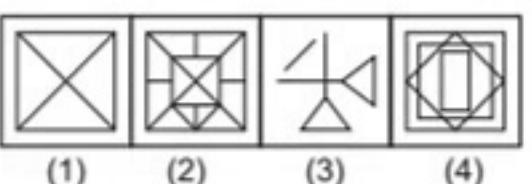


Ans. Fig.

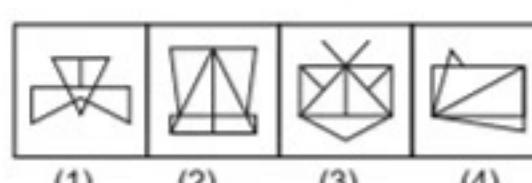
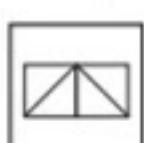
14.



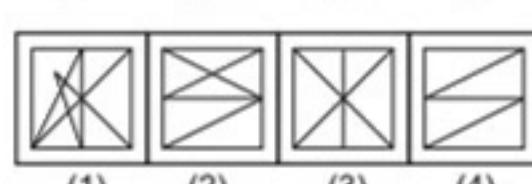
15.



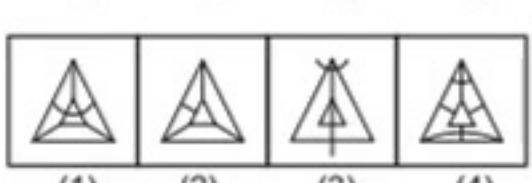
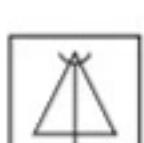
16.



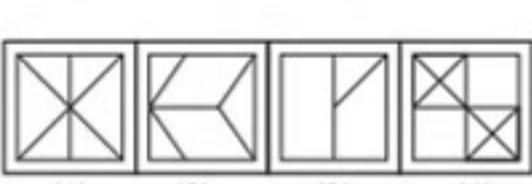
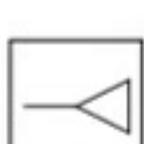
17.



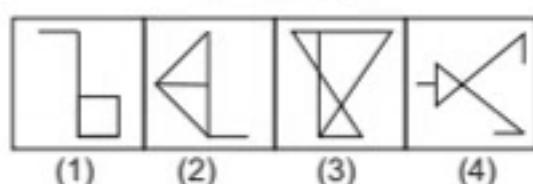
18.



19.

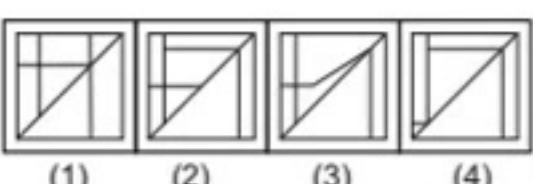


20. Ques. Fig.

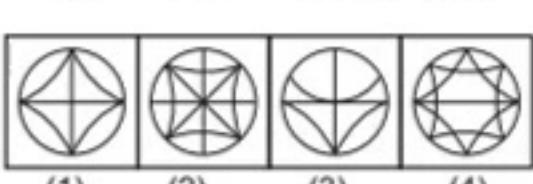


Ans. Fig.

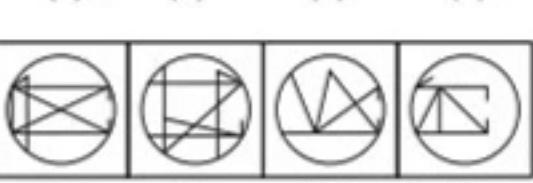
21.



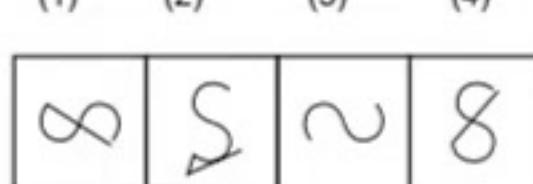
22.



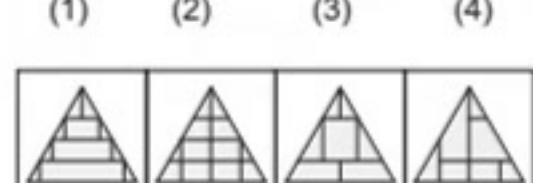
23.



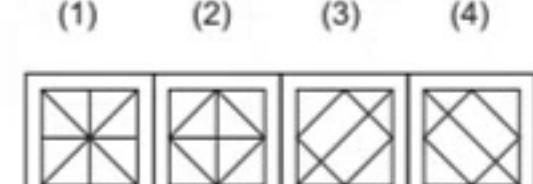
24.



25.



26.

**Answers**

<b>1</b> (2)	<b>2</b> (2)	<b>3</b> (3)	<b>4</b> (3)	<b>5</b> (2)	<b>6</b> (4)	<b>7</b> (4)	<b>8</b> (4)	<b>9</b> (2)	<b>10</b> (1)
<b>11</b> (4)	<b>12</b> (2)	<b>13</b> (2)	<b>14</b> (2)	<b>15</b> (3)	<b>16</b> (3)	<b>17</b> (2)	<b>18</b> (3)	<b>19</b> (2)	<b>20</b> (2)
<b>21</b> (4)	<b>22</b> (2)	<b>23</b> (2)	<b>24</b> (2)	<b>25</b> (2)	<b>26</b> (1)				

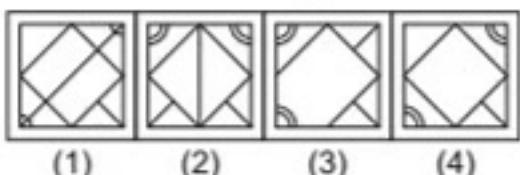
## Self Practice

**Directions (Q.Nos. 1-14)** In the given questions, there is a question figure and four answer figures (1), (2), (3) and (4). Select the one in which the question figure is hidden?

**1. Ques. Fig.**



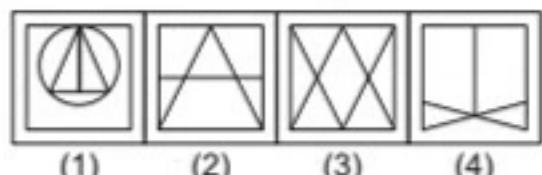
**Ans. Fig.**



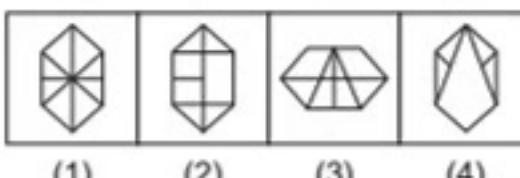
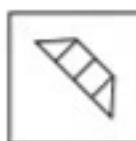
**8. Ques. Fig.**



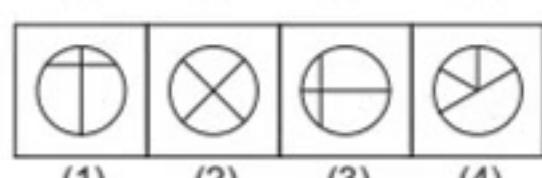
**Ans. Fig.**



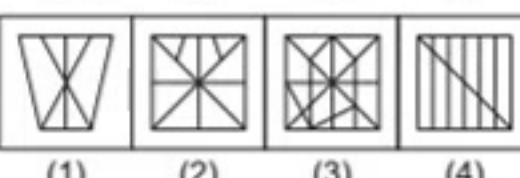
**2.**



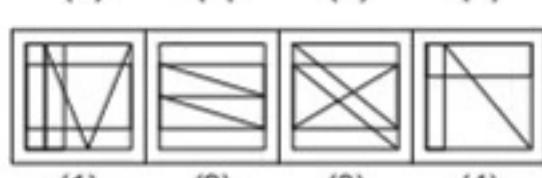
**9.**



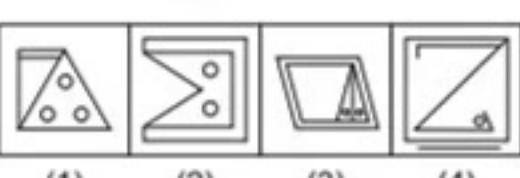
**3.**



**10.**



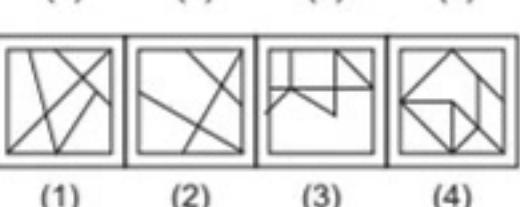
**4.**



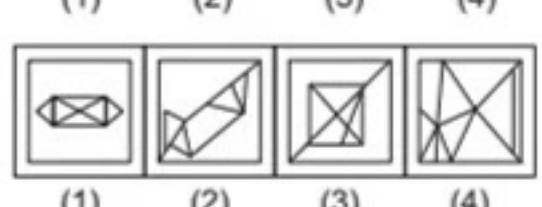
**11.**



**5.**



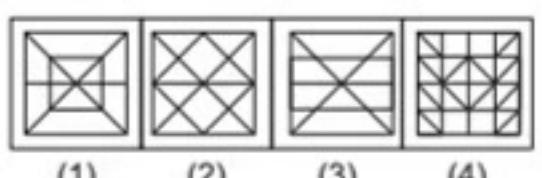
**12.**



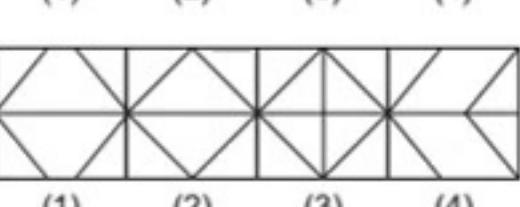
**6.**



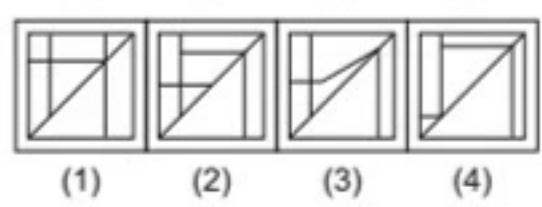
**13.**



**7.**



**14.**



## Answers

<b>1 (2)</b>	<b>2 (2)</b>	<b>3 (1)</b>	<b>4 (3)</b>	<b>5 (2)</b>	<b>6 (1)</b>	<b>7 (1)</b>	<b>8 (2)</b>	<b>9 (4)</b>	<b>10 (3)</b>
<b>11 (2)</b>	<b>12 (3)</b>	<b>13 (1)</b>	<b>14 (3)</b>						