

Chapter 19

Paper Folding & Cutting

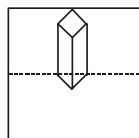
PAPER FOLDING:

The problems on paper folding involve the process of selecting a figure which would most nearly match the pattern that would be formed when a transparent sheet carrying designs on either side of a dotted line is folded along this line. The figure has to be selected from a set of four alternatives (answer or response figures).

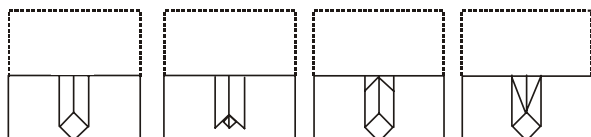
DIRECTION : In each one of the following examples, find from amongst the four response figures, the one which resembles the pattern formed when the transparent sheet, carrying a design, is folded along the dotted line.

ILLUSTRATION 1 :

Transparent Sheet



Response Figures

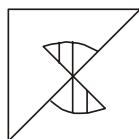


(1) (2) (3) (4)

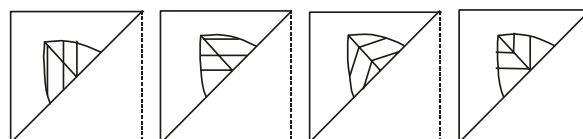
Sol. (4) Clearly, the upper half of the square sheet has been folded over the lower half. The combination of the design in the lower half and the water image of the design in the upper half will appear as the resultant design when the sheet is folded. Visualising this combination we get the design shown in fig. (4). Hence, fig. (4) is the answer.

ILLUSTRATION 2 :

Transparent Sheet



Response Figures



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

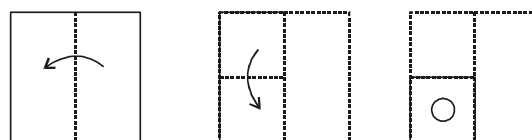
Sol. (4) Here, the sheet has been folded diagonally and design on either side of the dotted line combine to form fig. (4). Hence, fig. (4) is the answer.

PAPER CUTTING:

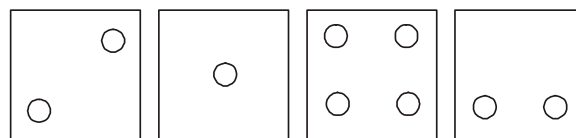
The problems on paper cutting contain a set of three figures showing the manner in which a piece of paper has been folded. In each of the first two figures, a dotted line together with an arrow on it has been given indicating the line along which the paper is to be folded and the direction of the fold respectively. In the third figure, there are marks showing the position and nature of the cut made in the folded sheet. The candidate has to select one of the figures from the set of four answer figures A, B, C and D, that would most nearly match the pattern when the paper is unfolded. It will be interesting to see that the designs of the cut will appear on each fold made in the paper.

ILLUSTRATION 3 :

Consider the three figures, marked X, Y, and Z showing one fold in X, another in Y and cut in Z. From amongst the four alternative figures A, B, C and D, select the one showing the unfolded position of Z.



X Y Z



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

Sol. (3) In fig. (X), the square sheet of paper has been folded along the vertical line of symmetry so that the right half of the sheet overlaps the left half.

In fig. (Y), the sheet is folded further to a quarter.

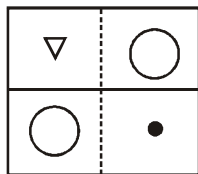
In fig.(Z), a circle has been punched in the folded sheet.

Clearly, the punched circle will be created in each quarter of the paper .

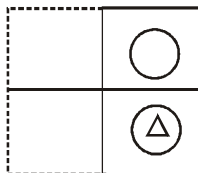
Thus, when the paper is unfolded, four circles will appear symmetrically over it and the paper will then appear as shown in fig. (3). Hence, fig. (3) is the answer.

ILLUSTRATION 4:

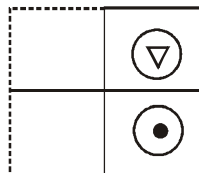
Find from amongst the four response figures, the one that resembles the pattern formed when the transparent sheet, carrying a design is folded along the dotted line.



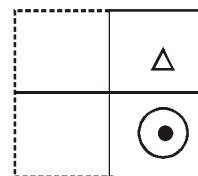
X



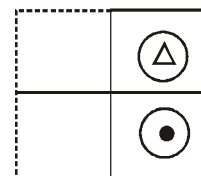
(1)



(2)



(3)

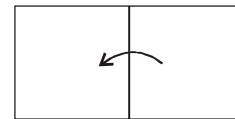


(4)

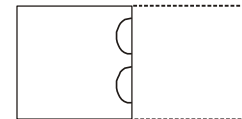
Sol. (2) Clearly left half is folded on the right half. Hence triangle is in side the circle and circle is surrounding the dot. The answer is (2).

ILLUSTRATION 5:

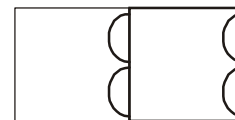
Consider the figures X and Y showing a rectangular sheet of paper folded in fig. (X) and punched in fig. (Y). From amongst the answer figures (1), (2), (3), (4), select the figure which will most closely resemble the unfolded position of figure (Y).



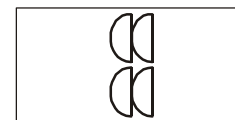
(X)



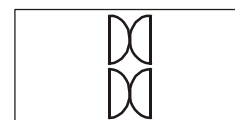
(Y)



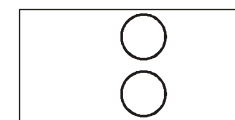
(1)



(2)



(3)



(4)

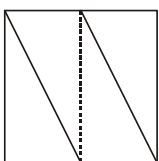
Sol. (4) In fig. (X), the rectangular sheet of paper has been folded along a line that divides the sheet into two equal halves. In figure (Y), two semicircular holes are punched close at the centre of the sheet as shown figure (4).

Exercise

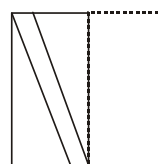
1

DIRECTIONS (Q.1-Q.5) : In each one of the following questions, find from amongst the four response figures, the one which resembles the pattern formed when the transparent sheet, carrying a design, is folded along the dotted line.

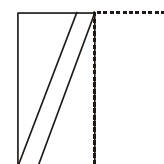
1. Transparent Sheet



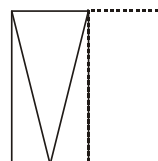
Response Figures



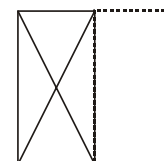
(1)



(2)

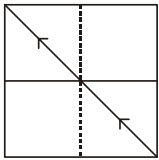


(3)

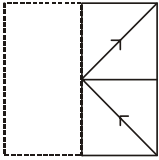


(4)

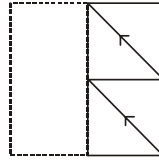
2. Transparent Sheet



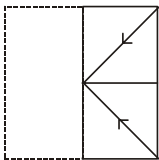
Response Figures



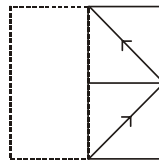
(1)



(2)

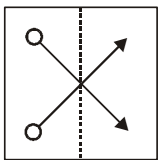


(3)

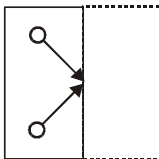


(4)

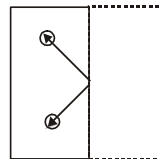
3. Transparent Sheet



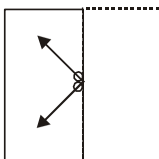
Response Figures



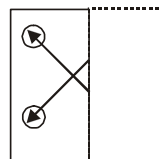
(1)



(2)

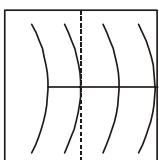


(3)

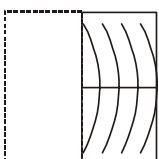


(4)

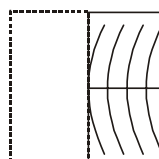
4. Transparent Sheet



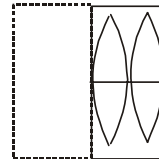
Response Figures



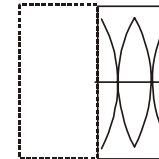
(1)



(2)

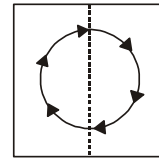


(3)

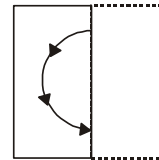


(4)

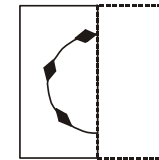
5. Transparent Sheet



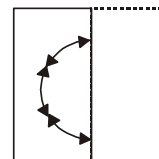
Response Figures



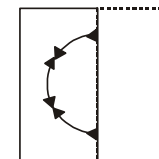
(1)



(2)



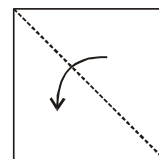
(3)



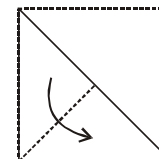
(4)

DIRECTIONS (Q.6-10) : Consider the three figures, marked X, Y, and Z showing one fold in X, another in Y and the cut in Z. From amongst the four alternative figures 1, 2, 3 and 4, select the one showing the unfolded position of Z.

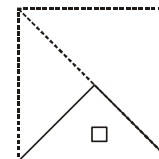
6.



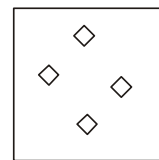
X



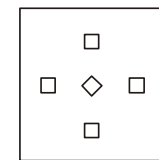
Y



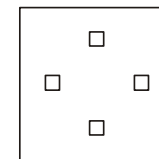
Z



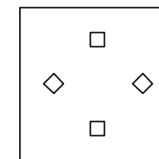
(1)



(2)

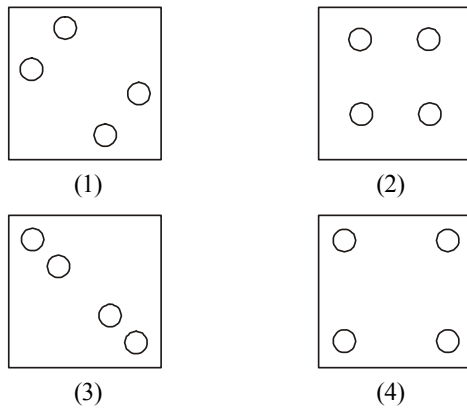
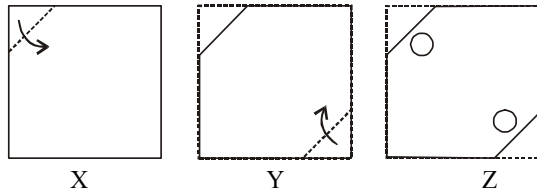


(3)

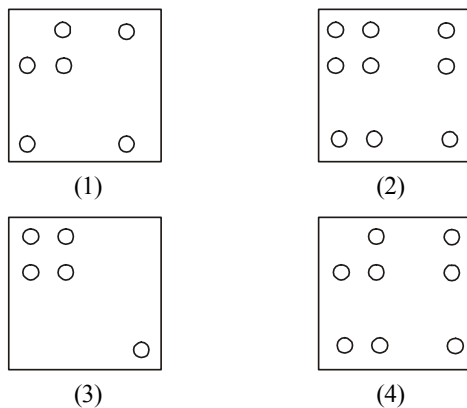
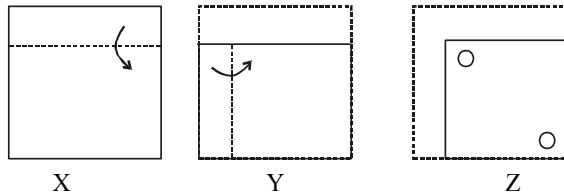


(4)

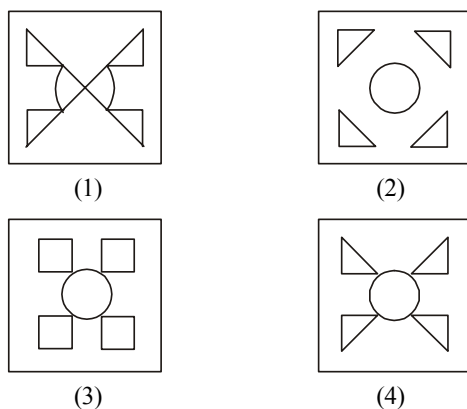
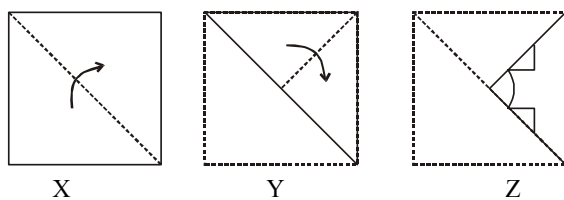
7.



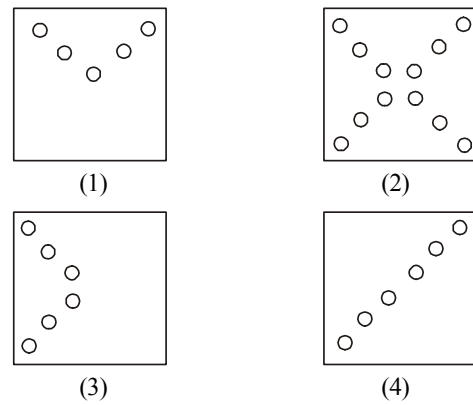
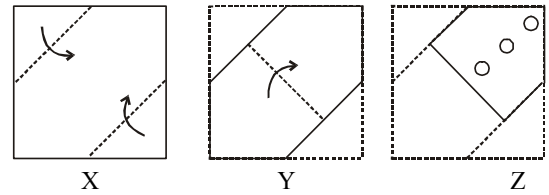
8.



9.

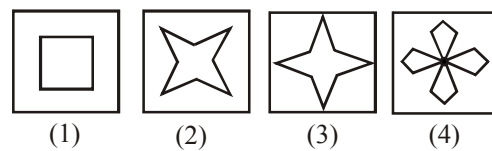
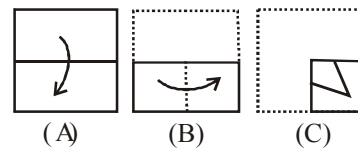


10.

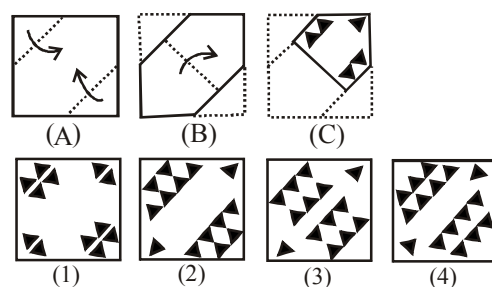
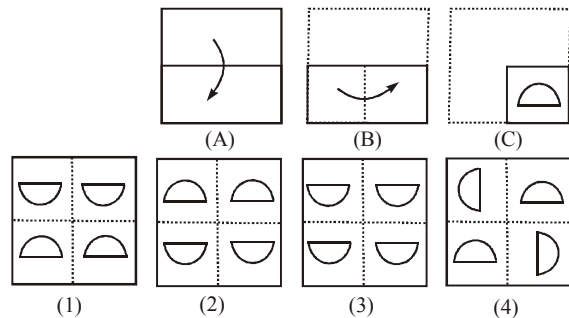


DIRECTION (Q.11-Q.13) : In each of the following questions a set of three figures A, B and C showing a sequence of folding of a piece of paper. Fig. (C) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures from which you have to choose a figure which would most closely resemble the unfolded form of fig. (C).

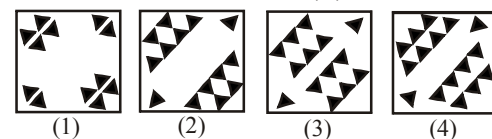
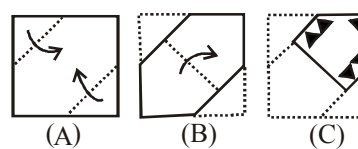
11.



12.

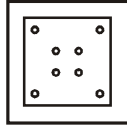


13.

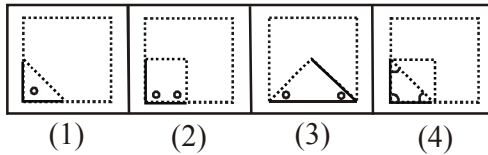


DIRECTION (Q.14-Q.16) : In the following questions, a square sheet of paper is folded along the dotted lines and then cuts are made on it. How would the sheet look when opened? Select the correct figure from the given choices.

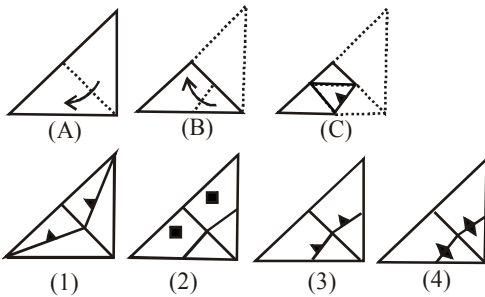
14. A square paper is folded in a particular manner and a punch is made. When unfolded, the paper appears as given below:



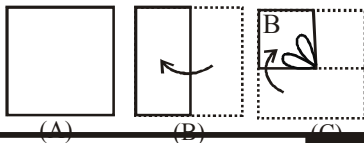
Choose the manner in which the paper is folded and punch is made.



15.



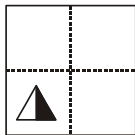
16.



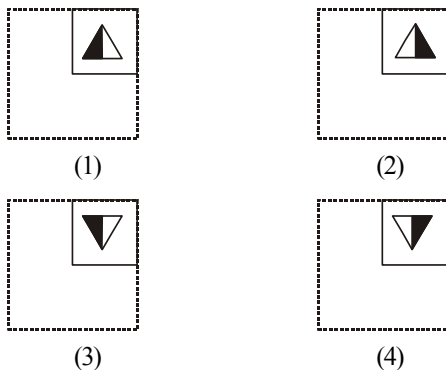
Exercise

2

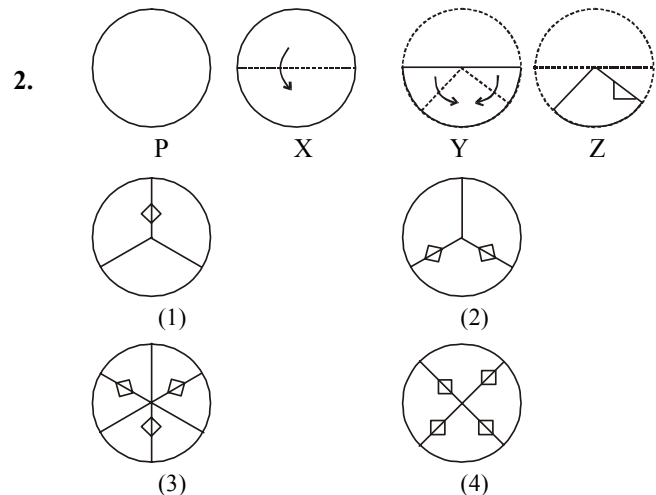
1. Transparent Sheet



Response Figures

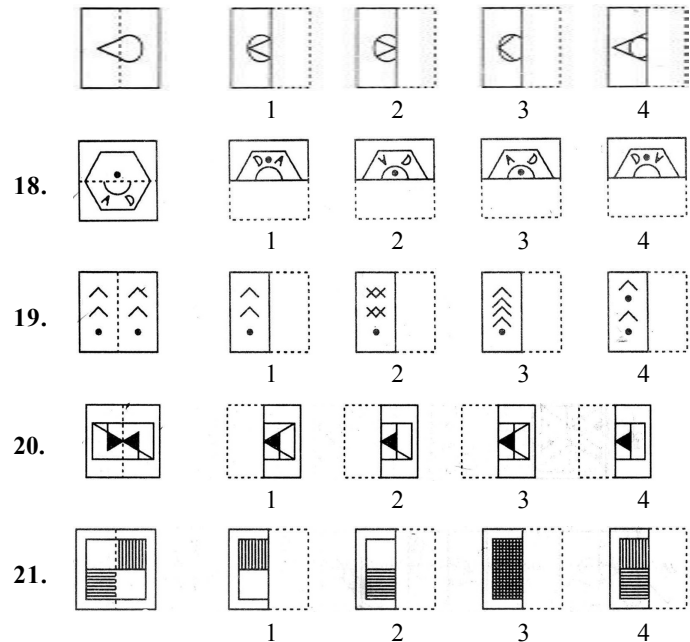


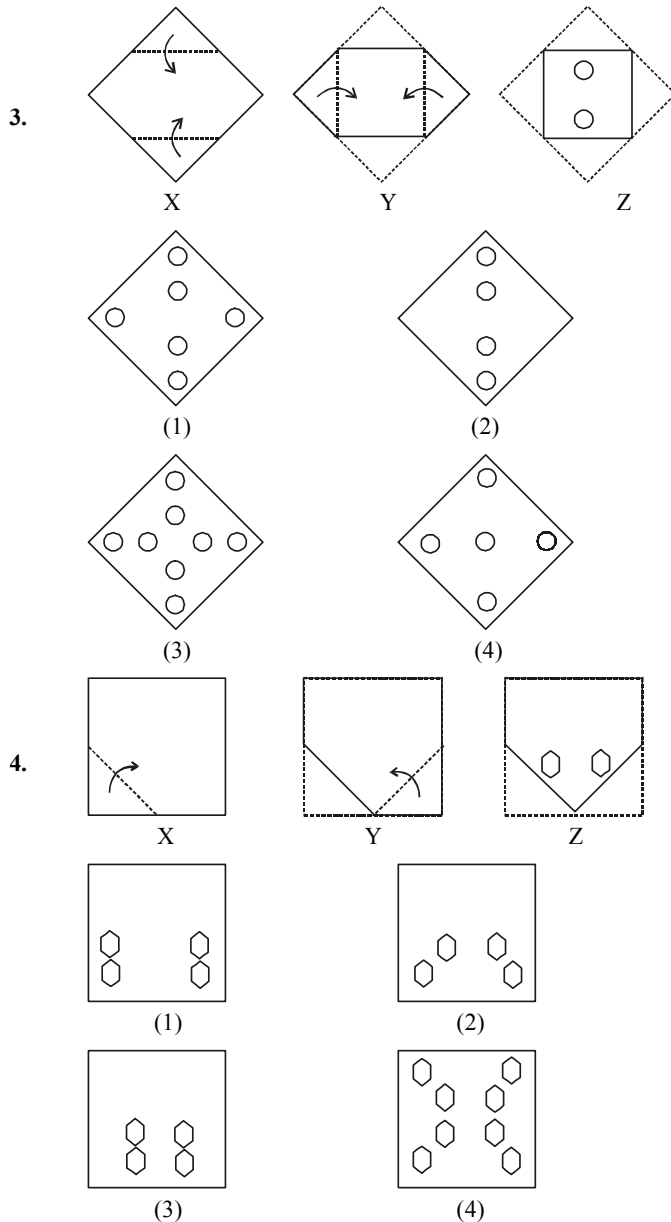
DIRECTION (Qs. 2-4) : Consider the three figures, marked X, Y and Z showing one fold in Y and cut in Z. From amongst the four alternative Figures 1, 2, 3 and 4. Select the one showing the unfolded position of Z.



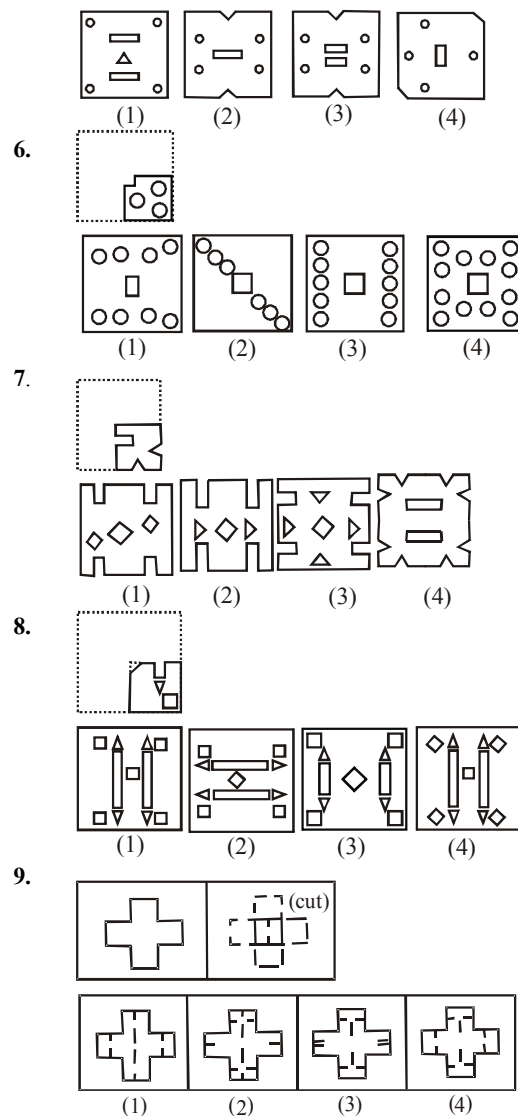
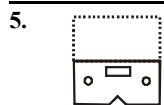
17. Transparent Sheet

Response Figure

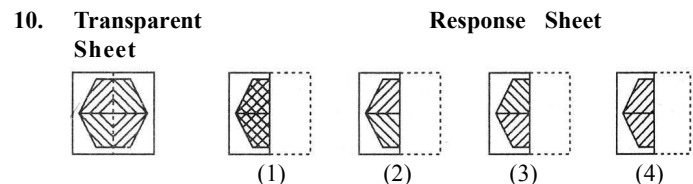




DIRECTION (Q.5-Q.9) : In the following questions, a square sheet of paper is folded along the dotted lines and then cuts are made on it. How would the sheet look when opened? Select the correct figure from the given choices.



DIRECTION (Q.10) : In each of the following problems, a source transparent sheet with a pattern is given. Figure out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



Hints & SOLUTIONS

Exercise 1

- | | | | |
|---------|---------|---------|---------|
| 1. (4) | 2. (1) | 3. (2) | 4. (3) |
| 5. (3) | 6. (3) | 7. (3) | 8. (3) |
| 9. (3) | 10. (4) | 11. (2) | 12. (1) |
| 13. (2) | 14. (1) | 15. (4) | 16. (4) |

- | | | | |
|---------|---------|---------|---------|
| 17. (1) | 18. (2) | 19. (1) | 20. (3) |
| 21. (4) | | | |

Exercise 2

- | | | | |
|--------|---------|--------|--------|
| 1. (3) | 2. (4) | 3. (2) | 4. (2) |
| 5. (3) | 6. (4) | 7. (4) | 8. (3) |
| 9. (1) | 10. (2) | | |