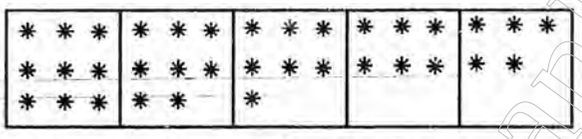
1 Series

In this type of questions, there are two sets of figures. One set is called 'Problem Figures' while the other as 'Answer Figures'. Problem figures are first and five in number while answer figures are after and five in number. The answer figures are indicated by A, B, C, D and E. The five problem figures make a series. That means they change from left to right in specific order. The question is, if the figures continue to change in the same order what should be the sixth figure ?

The candidate has to find out which one of answer figures provides the answer.

Type I—Based on numbers.

In each of the subsequent figure the number of designs may either be increasing or decreasing.

(i) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here from Pf_1 to Pf_2 the number of designs is changing from 9 to 8.

From Pf_2 to Pf_3 the number of designs is changing from 8 to 7.

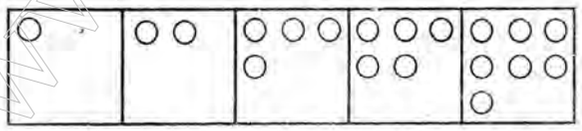
From Pf_3 to Pf_4 the number of designs is changing from 7 to 6.

From Pf_4 to Pf_5 the number of designs is changing from 6 to 5.

Thus in each subsequent figure the number of designs is decreasing by one.

Hence in Pf_6 the number of designs will be 4.

Therefore answer is 

(ii) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

In this series

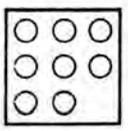
From Pf_1 to Pf_2 the number of designs is increasing by 1.

From Pf_2 to Pf_3 the number of designs is increasing by 2.

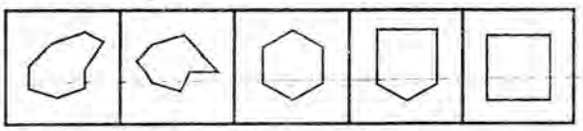
From Pf_3 to Pf_4 the number of designs is increasing by 1.

From Pf_4 to Pf_5 the number of designs is increasing by 2.

$\therefore$ From Pf_5 to next figure the number of designs will increase by 1.

Hence answer is 

(iii) **Increase or decrease in the number of lines of the designs—**



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

In this series

From Pf_1 to Pf_2 the number of lines of the design is changing from 8 to 7.

From Pf_2 to Pf_3 the number of lines of the design is changing from 7 to 6.

From Pf_3 to Pf_4 the number of lines of the design is changing from 6 to 5.

From Pf_4 to Pf_5 the number of lines of the design is changing from 5 to 4.

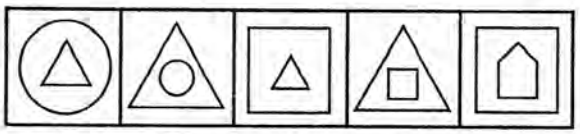
Thus in each subsequent figure the number of lines of the design is decreasing by 1.

Hence the number of lines of the design in Pf_6 will be 3.

Therefore answer is 

Type II—Based on shape and size of the figures

(i)

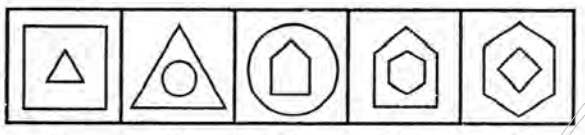


Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

In this series from Pf_1 to Pf_2 the inner small design is coming out after enlarging while the outer large design is going inside after reducing. Similarly from Pf_3 to Pf_4 the small design is coming out after enlarging while the outer large design is going inside after reducing. The same order of change will be from Pf_5 to Pf_6.

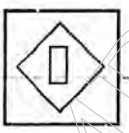
Therefore answer is 

(ii)

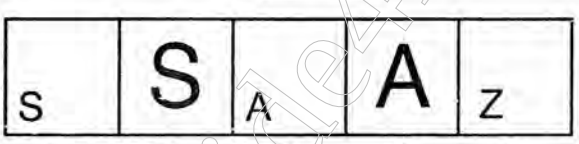


Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

In this series from Pf_1 to Pf_2 the inner design is enlarging and inside it another small new design takes place. The same order of change goes on.

Therefore answer is 

(iii)



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

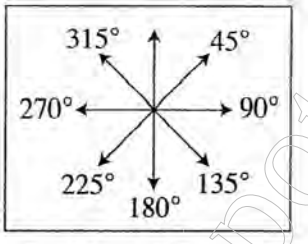
In this series from Pf_1 to Pf_2 the design is enlarged. From Pf_3 to Pf_4 the design is also enlarged. Hence from Pf_5 to Pf_6 the design will also be enlarged.

Therefore answer is 

Type III—Based on rotation of figures

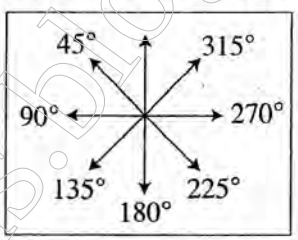
Clockwise Direction

Angle in the rotation on the basis of clockwise direction is as shown below :

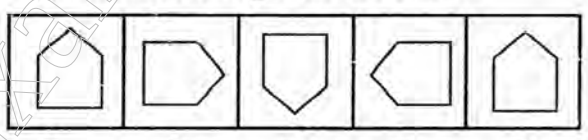


Anticlockwise Direction

Angle in the rotation on the basis of anti-clockwise direction is as shown below :

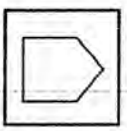


(i) **Rotation of figures clockwise—**

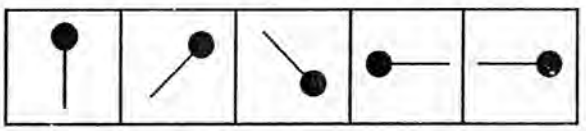


Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

In this series each figure is rotating through 90° clockwise from one to next in each subsequent figure.

Hence answer fig. is 

(ii)



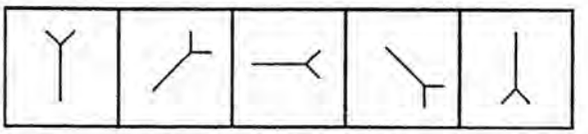
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

In this series from Pf_1 to Pf_2 the design is rotating through 45° clockwise.

From Pf_2 to Pf_3 the design is rotating through 90° clockwise. From Pf_3 to Pf_4 the design is rotating through 135° clockwise.

From Pf_4 to Pf_5 the design is rotating through 180° clockwise. Thus in each time the angle is increased by 45°. So from Pf_5 to Pf_6 the design will rotate through 225° clockwise.

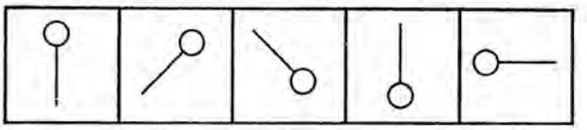
Therefore answer figure is 

(iii) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

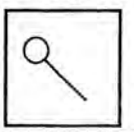
In this series the design is rotating through 45° clockwise in each subsequent figure.

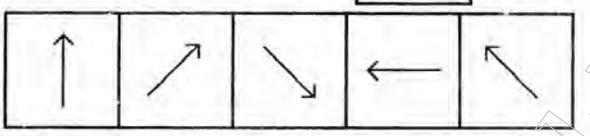
Hence answer figure is 

(iv) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

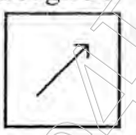
In this series, the design is rotating through 45°, 90°, 45°, 90° and 45° respectively clockwise.

Therefore answer figure is 

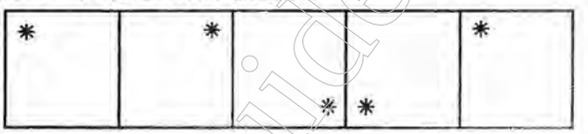
(v) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

In this series the design is rotating through 45°, 90°, 135°, 45° respectively clockwise. Hence in next figure it will rotate through 90° clockwise.

Hence answer figure is 

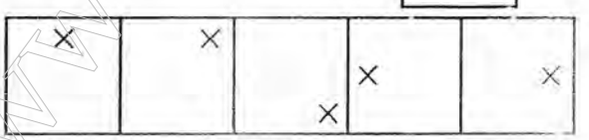
Type IV—Based on Position

(i) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here in each subsequent figure the design is shifting one side clockwise.

Therefore the answer figure is 

(ii) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

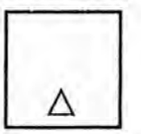
Here in each subsequent figure the design is shifting through $\frac{1}{2}$, 1, $1\frac{1}{2}$, and 2 sides respectively in clockwise direction.

Hence the answer figure is 

(iii) 

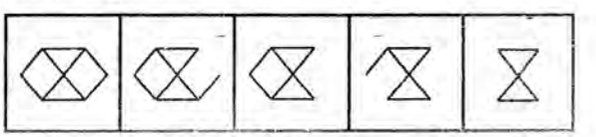
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here in each subsequent figure the design is shifting through 1, $1\frac{1}{2}$, 1 and $1\frac{1}{2}$ sides clockwise. Hence in answer figure it will shift/side clockwise.

Hence answer figure is 

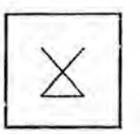
Type V—Based on Combination and Diffusion

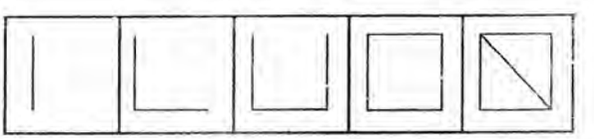
In this type of series, sometimes there is increase of designs in the figures or sometimes decrease of designs or sometimes increase and decrease together.

(i) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

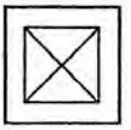
Here from Pf_1 to Pf_2 one line is missing from the right. From Pf_2 to Pf_3 one line is again missing from the right. From Pf_3 to Pf_4 one line is missing from the left. From Pf_4 to Pf_5 one line is again missing from the left. Now from Pf_5 to Pf_6 one line will be missing from the top.

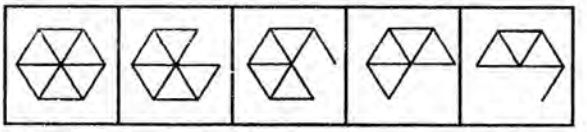
Hence answer figure is 

(ii) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

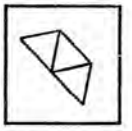
Here in each subsequent figure one line is increasing.

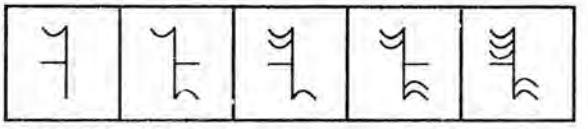
Hence answer figure is 

(iii) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

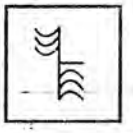
Here one line is decreasing in alternate order in clockwise direction and the figure is rotating through 90° clockwise in each subsequent figure.

Hence answer figure is 

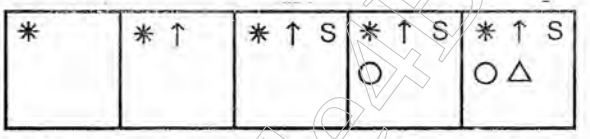
(iv) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

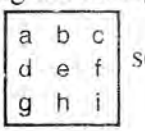
Here one arc is increasing in each subsequent figure while the small line is changing its position from left to right and viceversa.

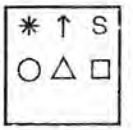
Hence answer figure is 

Type—VI Based on Increasing or Decreasing figure

(i) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

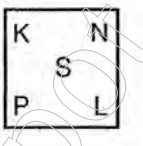
Here the designs are increasing according the a, b, c, d, e, f, g, h, i, in the figure  so the new design will take place at 'f'.

Hence answer figure is 

(ii) 

Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

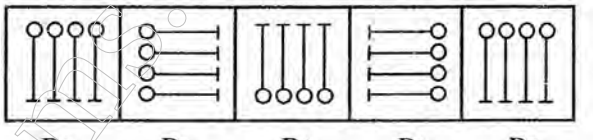
Here in each subsequent figure one design is taking a new shape. Hence in answer figure there will be all new designs.

Therefore answer figure is 

Some Important Rules to Solve the Problems in Series

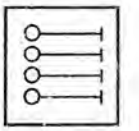
Rule (1)—If in the series first problem figure is same to fifth problem figure then answer figure will be same to second problem figure.

Example (i)



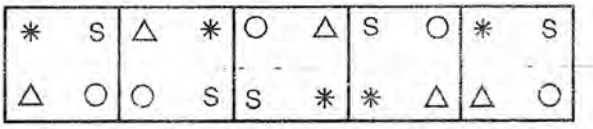
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here Pf_1 and Pf_5 are same. Hence answer figure and Pf_2 will be same.

Therefore answer figure is 

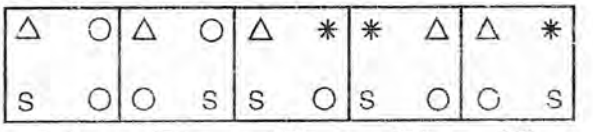
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

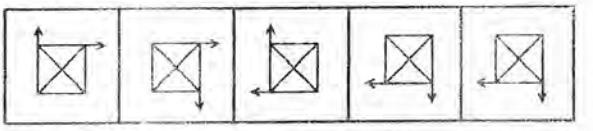


(A) (B) (C) (D) (E)

Here $Pf_1 = Pf_5$, hence answer figure will be Pf_2 which is (E) in answer figures.

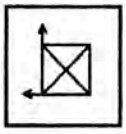
Rule (2)—In the series if $Pf_4 = Pf_5$ then Pf_3 = answer figure.

Example (i)



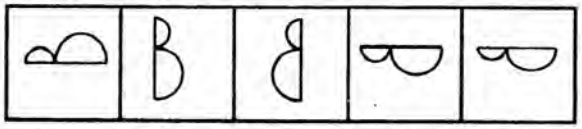
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here $Pf_4 = Pf_5$, hence answer figure = Pf_3.

Therefore answer figure is 

Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

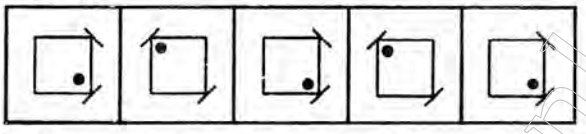
Answer Figures

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

Here $Pf_4 = Pf_5$. Hence answer figure = Pf_3 which is (B) in answer figures.

Rule (3)—In the series if $Pf_1 = Pf_3 = Pf_5$ then $Pf_2 = Pf_4 = Pf_6$ (answer figure).

Example (i)



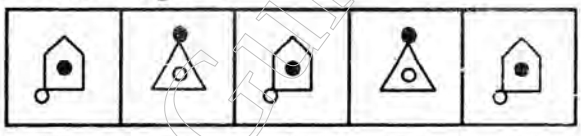
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here $Pf_1 = Pf_3 = Pf_5$. Hence $Pf_2 = Pf_4 = Pf_6$ (answer figure)

Hence answer figure is 

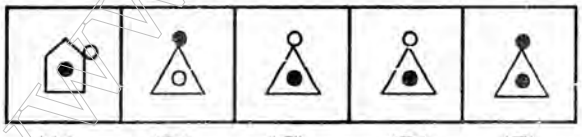
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

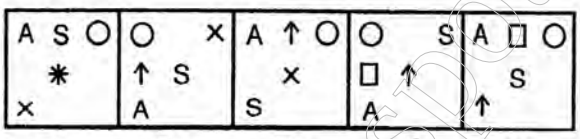


(A) (B) (C) (D) (E)

Here $Pf_1 = Pf_3 = Pf_5$. Hence $Pf_2 = Pf_4 = Pf_6$ which is (B) in answer figures.

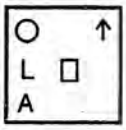
Rule (4)—In the series if $Pf_1 = Pf_2$ and $Pf_3 = Pf_4$ then Pf_5 = answer figure or $Pf_1 : Pf_2 :: Pf_3 : Pf_4$ then $Pf_5 : Pf_6$.

Example (i)



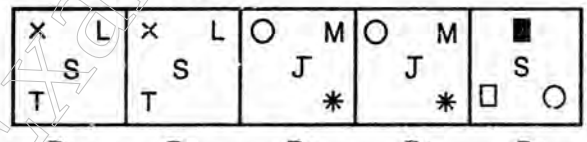
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here the relation between Pf_1 and Pf_2 is same as the relation Pf_3 and Pf_4. Hence the same relation will be between Pf_6 and answer figure.

Therefore answer figure is 

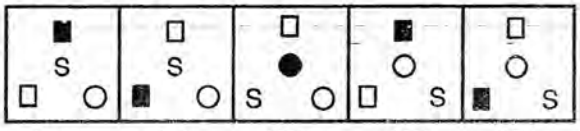
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures



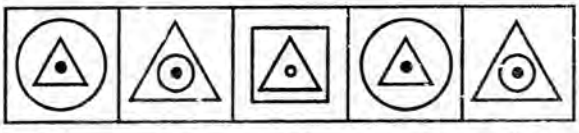
(A) (B) (C) (D) (E)

Here $Pf_1 = Pf_2$ and $Pf_3 = Pf_4$.

Hence answer figure = Pf_6 which is (A) in answer figures.

Rule (5)—In the series if $Pf_1 = Pf_4$ and $Pf_2 = Pf_5$ then answer figure = Pf_3.

Example (i)



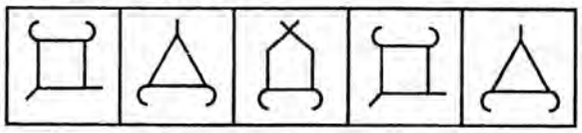
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here $Pf_1 = Pf_4$ and $Pf_2 = Pf_5$ so Pf_3 = answer figure.

Hence answer figure is 

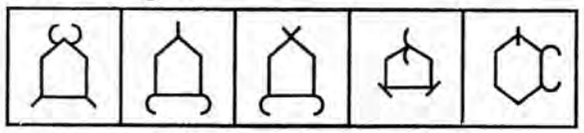
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

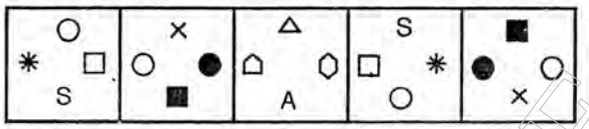


(A) (B) (C) (D) (E)

Here $Pf_1 = Pf_4$ and $Pf_2 = Pf_5$, hence answer figure = Pf_3 which is (C) in answer figures.

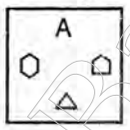
Rule (6)—In the series if Pf_4 = inverse of Pf_1 and Pf_5 = inverse of Pf_2 the answer figure = inverse of Pf_3.

Example (i)



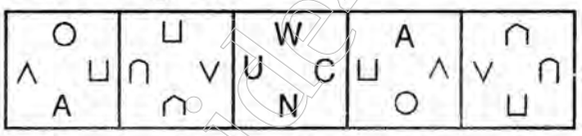
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here Pf_4 = inverse of Pf_1 and Pf_5 = inverse of Pf_2, so answer figure = inverse of Pf_3.

Hence answer figure is 

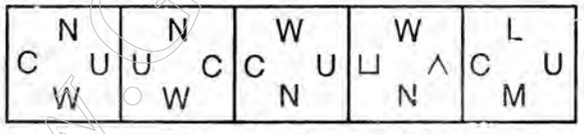
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

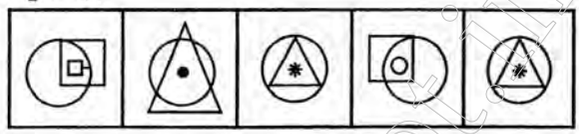


(A) (B) (C) (D) (E)

Here Pf_4 = inverse of Pf_1 and Pf_5 = inverse of Pf_2 so answer figure = inverse of Pf_3 which is (A) in answer figures.

Rule (7)—In the series if $Pf_3 = Pf_5$ then answer figure = Pf_2.

Example (i)



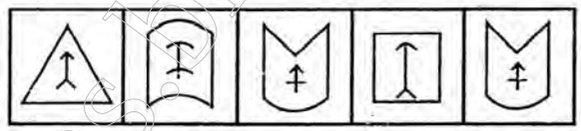
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here $Pf_3 = Pf_5$, hence answer figure = Pf_2.

Therefore answer figure is 

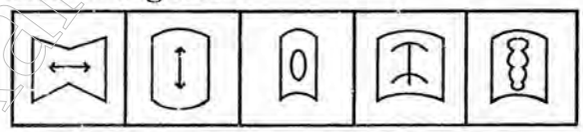
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

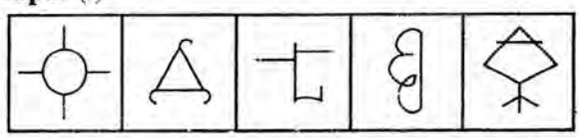


(A) (B) (C) (D) (E)

Here $Pf_3 = Pf_5$, therefore answer figure = Pf_2 which (D) in answer figures.

Rule (8)—In the series if Pf_1, Pf_2, Pf_3, Pf_4 and Pf_5 all are different from one another and appear indefinite, then answer figure will also be different from these.

Example (i)



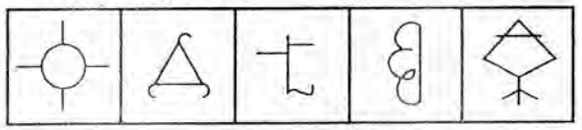
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here all the five problem figures are different from one another so answer figure will also be different from these problem figures.

Hence answer figure is 

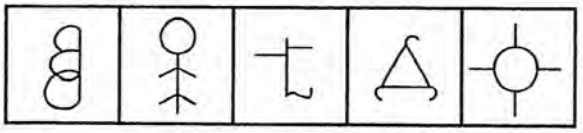
Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Answer Figures

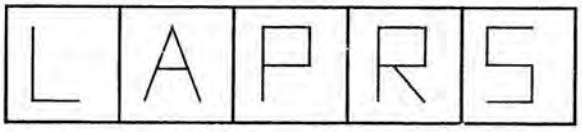


(A) (B) (C) (D) (E)

Here $Pf_1 \neq Pf_2 \neq Pf_3 \neq Pf_4 \neq Pf_5$, therefore answer will be different from these five figures which is (B) in answer figures.

Rule (9)—In the series if letters of English alphabet are used as figures then the lines used in the letter are considered.

Example (i)



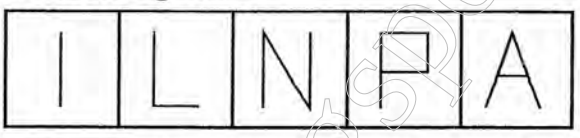
Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

Here the numbers of lines used in letters are 2, 3, 4, 5 and 5 respectively. Hence the number of lines used in the letter of answer figure will be 4.

Therefore answer figure is 

Example (ii)

Problem Figures



Pf_1 Pf_2 Pf_3 Pf_4 Pf_5

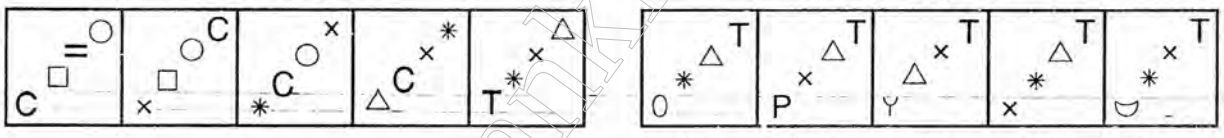
Answer Figures

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

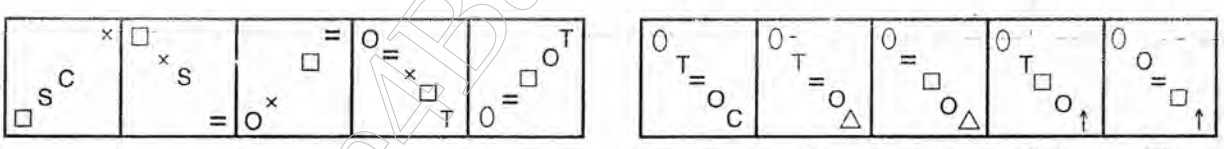
Here the numbers of lines used in letters are 1, 2, 3, 4 and 3 respectively. Here the number of lines used in letter of answer figure will be 2 which in T in the answer of (D).

Exercise 1

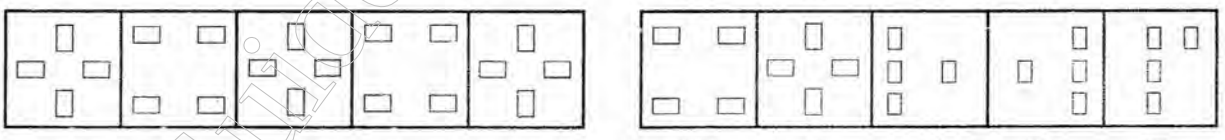
Problem Figures **Answer Figures**

1. 

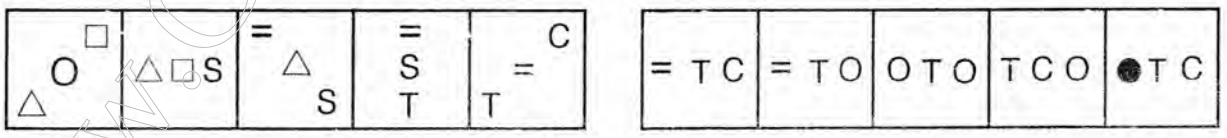
(A) (B) (C) (D) (E)

2. 

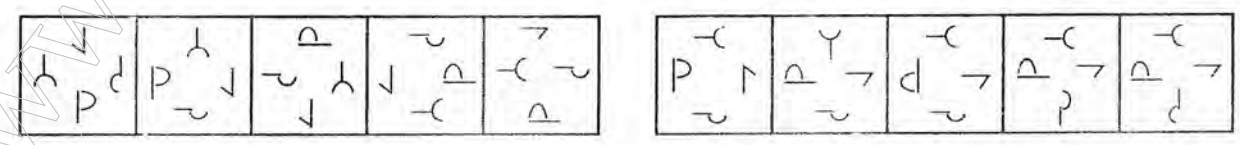
(A) (B) (C) (D) (E)

3. 

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

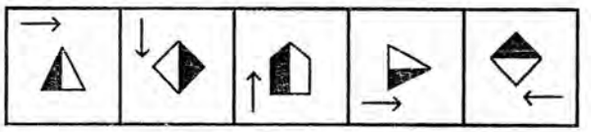
4. 

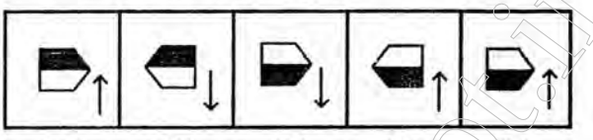
(A) (B) (C) (D) (E)

5. 

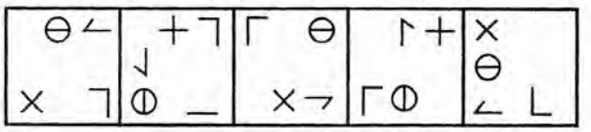
(A) (B) (C) (D) (E)

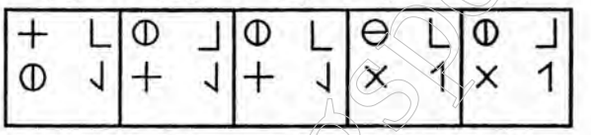
Problem Figures **Answer Figures**

6. 

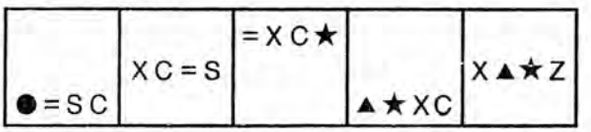


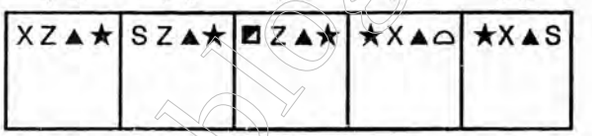
(A) (B) (C) (D) (E)

7. 

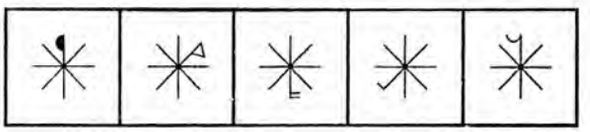


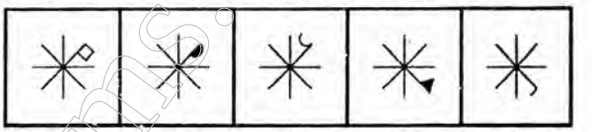
(A) (B) (C) (D) (E)

8. 

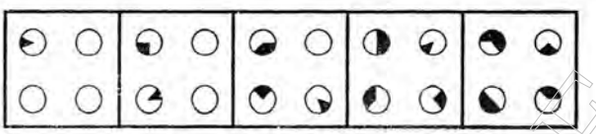


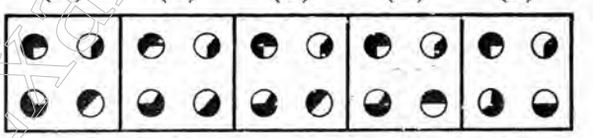
(A) (B) (C) (D) (E)

9. 

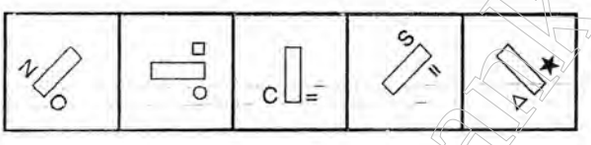


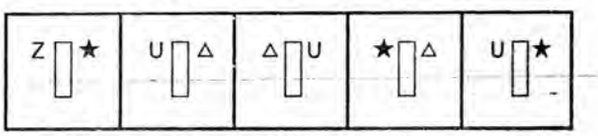
(A) (B) (C) (D) (E)

10. 

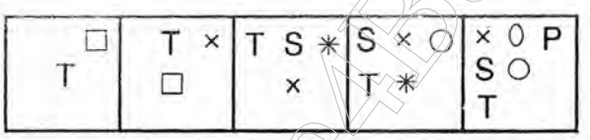


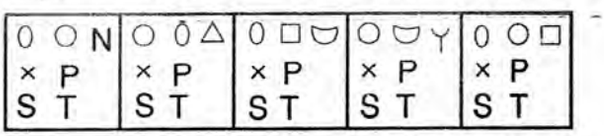
(A) (B) (C) (D) (E)

11. 



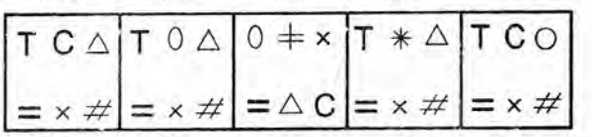
(A) (B) (C) (D) (E)

12. 

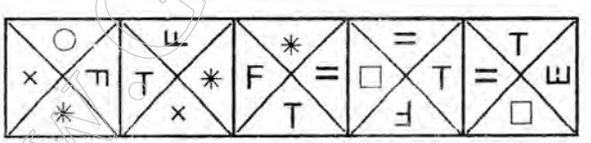


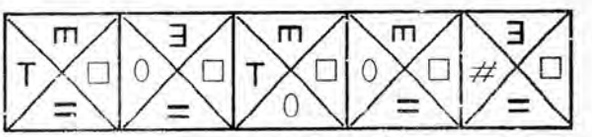
(A) (B) (C) (D) (E)

13. 

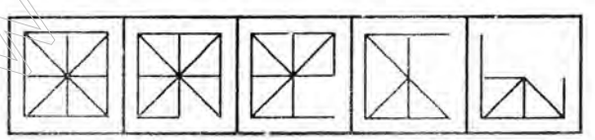


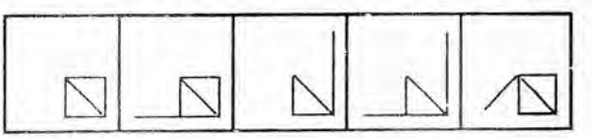
(A) (B) (C) (D) (E)

14. 



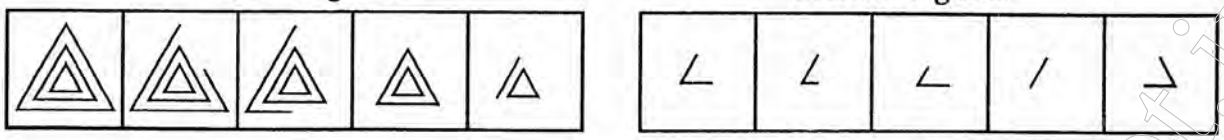
(A) (B) (C) (D) (E)

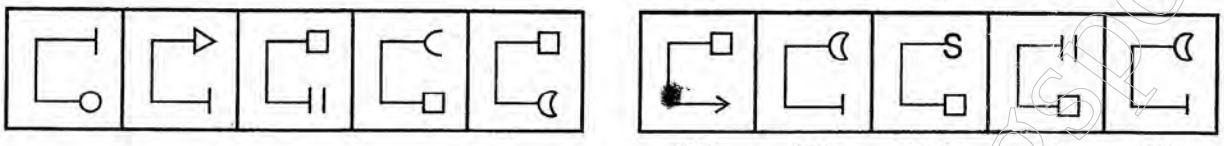
15. 

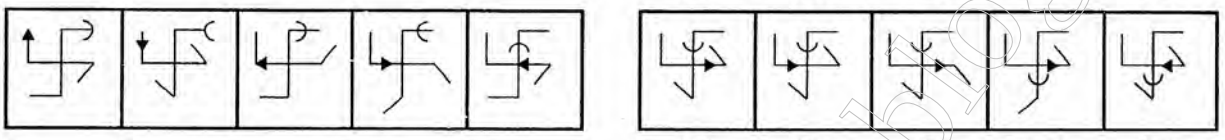


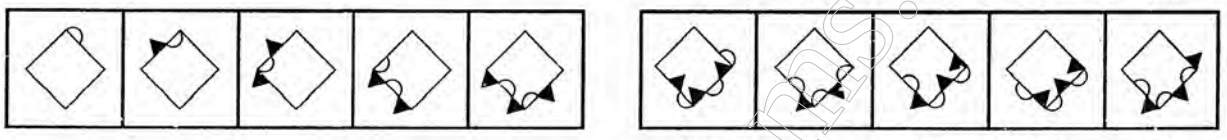
(A) (B) (C) (D) (E)

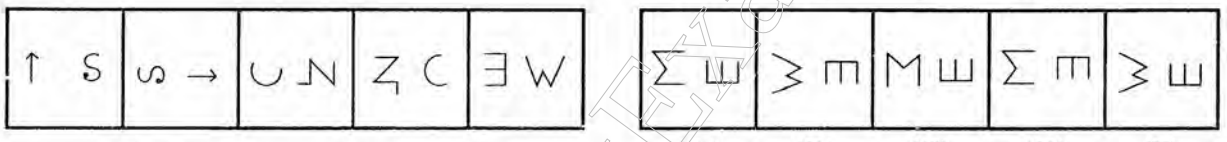
Problem Figures **Answer Figures**

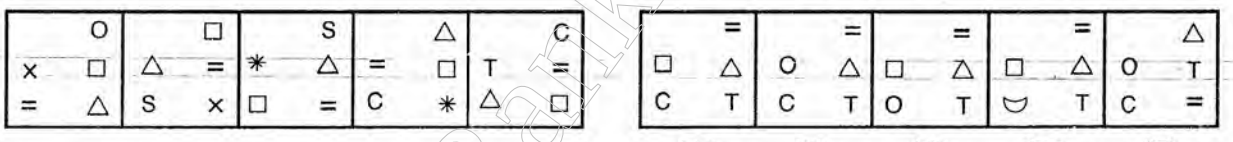
16. 
(A) (B) (C) (D) (E)

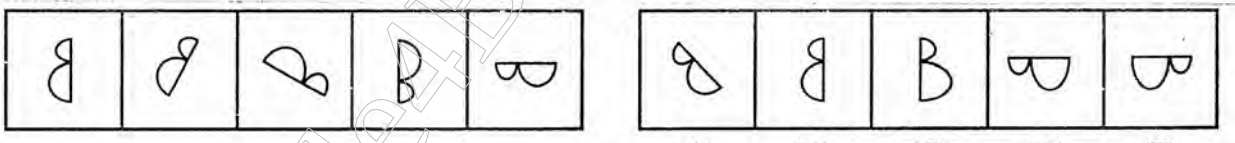
17. 
(A) (B) (C) (D) (E)

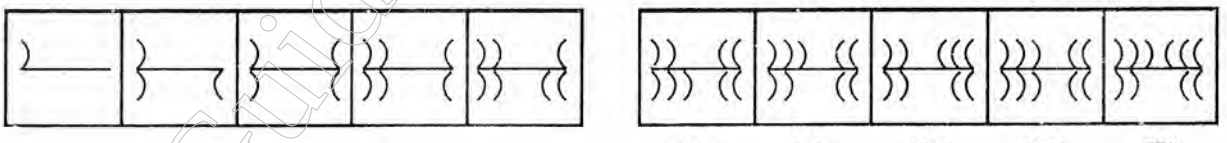
18. 
(A) (B) (C) (D) (E)

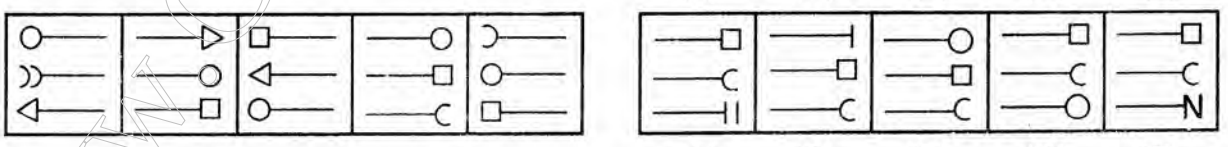
19. 
(A) (B) (C) (D) (E)

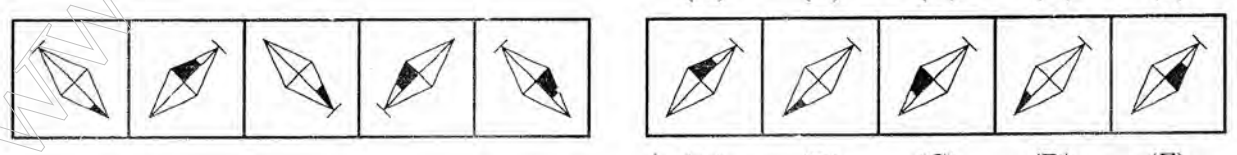
20. 
(A) (B) (C) (D) (E)

21. 
(A) (B) (C) (D) (E)

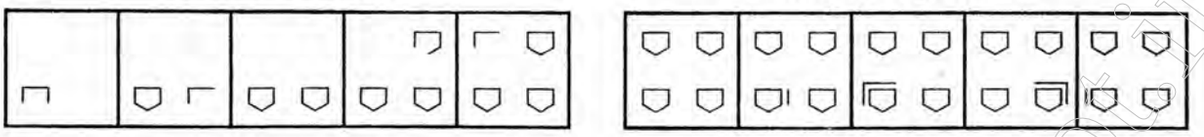
22. 
(A) (B) (C) (D) (E)

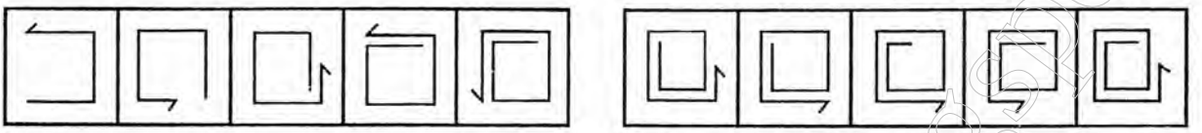
23. 
(A) (B) (C) (D) (E)

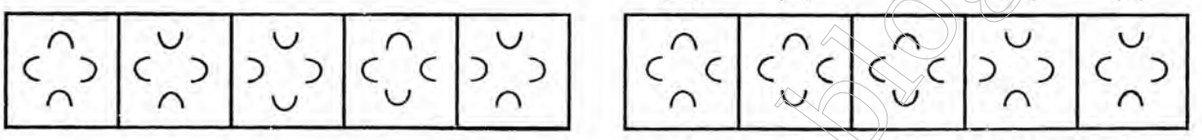
24. 
(A) (B) (C) (D) (E)

25. 
(A) (B) (C) (D) (E)

Problem Figures **Answer Figures**

26. 
(A) (B) (C) (D) (E)

27. 
(A) (B) (C) (D) (E)

28. 
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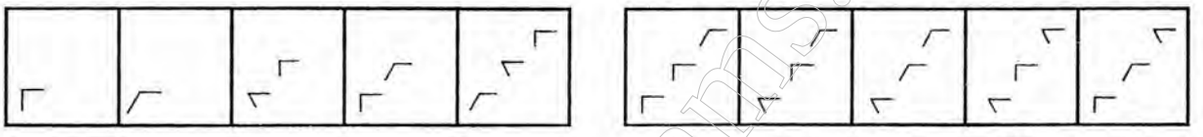
29. 
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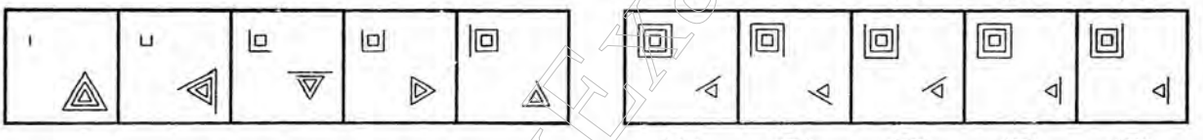
30. 
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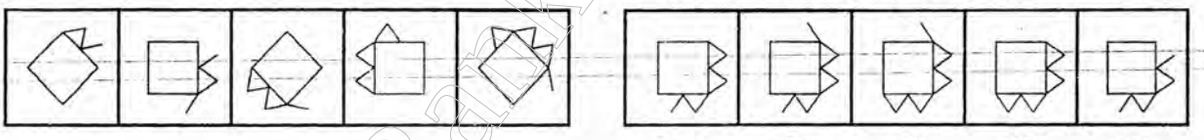
31. 
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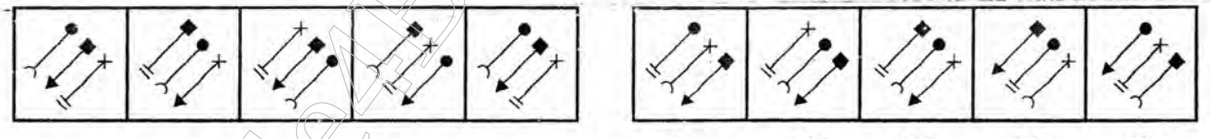
32. 
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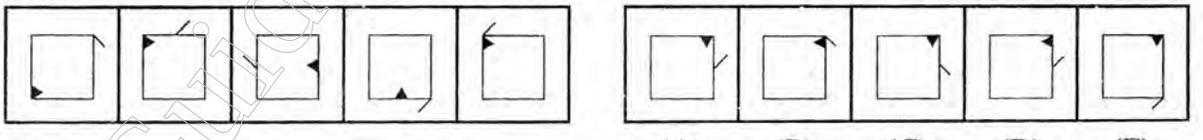
33. 
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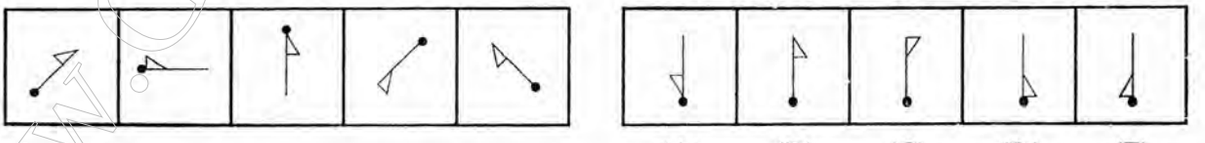
34. 
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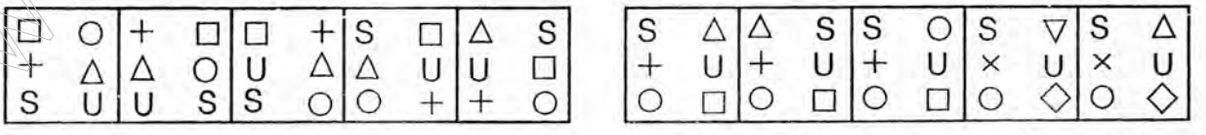
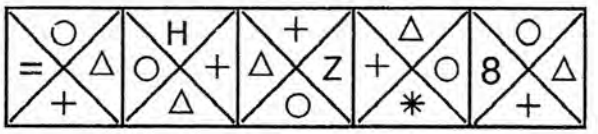
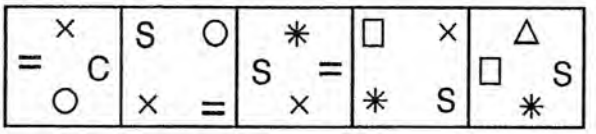
35. 
(A) (B) (C) (D) (E)

Problem Figures **Answer Figures**

36. 

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

37. 

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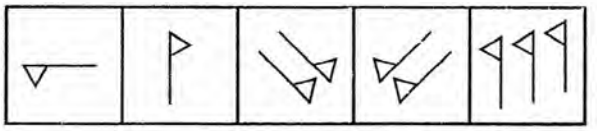
38. 

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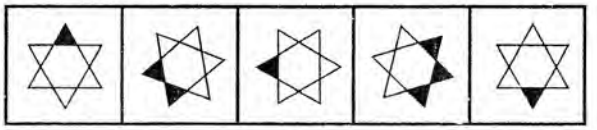
39. 

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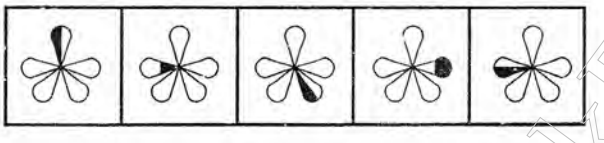
40. 

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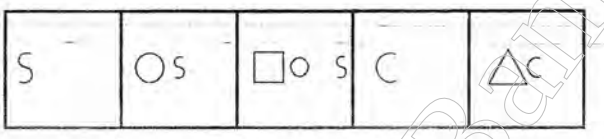
41. 

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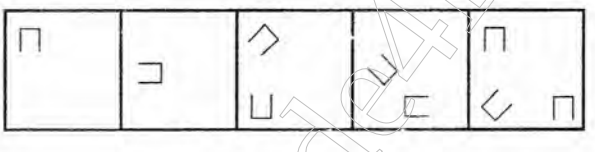
42. 

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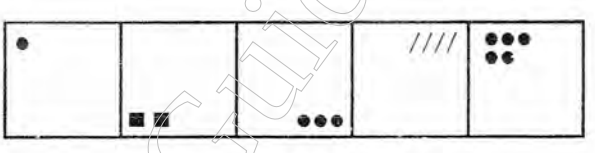
43. 

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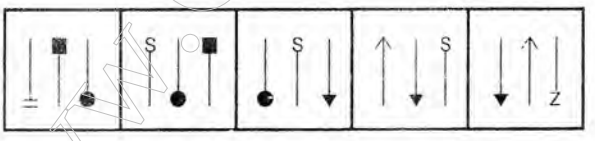
44. 

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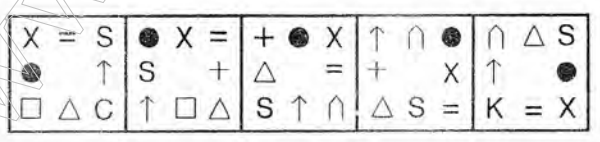
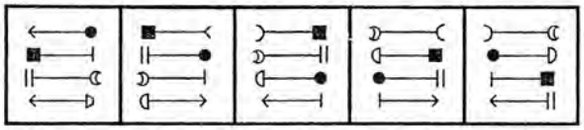
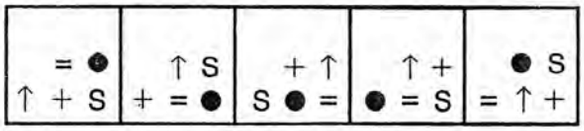
45. 

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

Problem Figures **Answer Figures**

46. 

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

47. 

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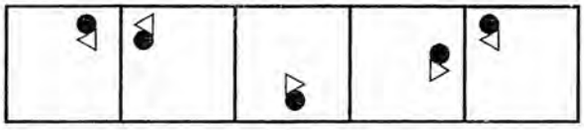
48. 

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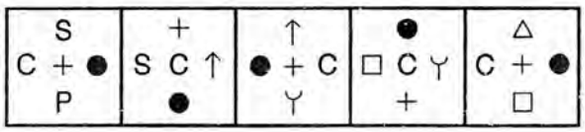
49. 

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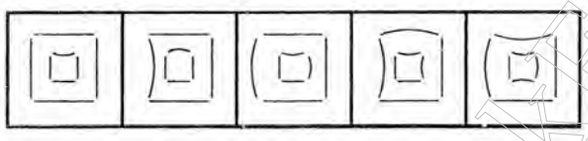
50. 

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

Answers with Explanations

1. (A) Shifting of designs is shown below :

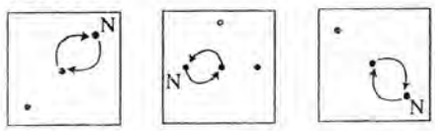
From Pf_1 to Pf_2 From Pf_2 to Pf_3
From Pf_3 to Pf_4 From Pf_4 to Pf_5
From Pf_5 to Pf_6

Here N shows new design.

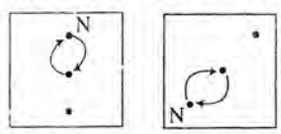
2. (B) In each subsequent figure all the designs shift from one diagonal to another diagonal. Besides this, shifting of designs in each subsequent figure takes place as shown below :

3. (A) Here $Pf_1 = Pf_3 = Pf_5$
and $Pf_2 = Pf_4$
$\therefore$ $Pf_4 = Pf_6$

4. (E) In each subsequent figure set of all the three designs moves through 45° clockwise. Besides this, shifting of designs is shown below :



Pf_1 to Pf_2 Pf_2 to Pf_3 Pf_3 to Pf_4



Pf_4 to Pf_5 Pf_5 to Pf_6

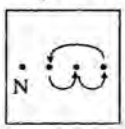
5. (D) In each subsequent figure each design is shifting one side clockwise. Besides, from the design ⌟ each next design moves through 180°.

6. (E) In each alternate figure arrow is shifting one side anticlockwise and it moves also through 90° clockwise. Besides, from Pf_1 to Pf_4 the design ◭ moves through 90°

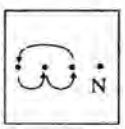
clockwise and then reverses. The same change is from Pf_2 to Pf_5 and Pf_3 to Pf_6.

7. (C) In each subsequent figure the design O shifts $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3 and $3\frac{1}{3}$ sides respectively anticlockwise and the line inside it moves 90° each time. The design ⌊ shifts one side each time anticlockwise and in alternate figure it reverses. The design ⌐ shifts $1\frac{1}{2}$ sides each time anticlockwise and also moves through 90° anticlockwise each time. The design × shifts $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3 and $3\frac{1}{2}$ sides clockwise and in each time it changes to + and vice versa.

8. (C) In each subsequent figure all the three designs shift half side. Besides, the designs are shifting as shown below :



From P.F. (1) to (2)



From P.F. (2) to (3)

From P.F. (3) to (4) From P.F. (4) to (5)

From P.F. (5) to (6)

9. (A) In each problem figure the design at the end of the line is different. Besides, P.F. (1) and (5) are same. Hence P.F. (2) and P.F. (6) will also be same.

10. (C) In the first segment of the given diagram, there are four circles. Out of these four circles, the upper left circle is shaded with $\frac{1}{8}$ part and rest three circles are blank. In the subsequent figure, the shaded portion of first left upper circle is increased by $\frac{1}{8}$ more and rotates 45° anticlockwise and second lower left circle is shaded with $\frac{1}{8}$ part. This process is repeated *i.e.*, increment of $\frac{1}{8}$ part each time and rotation of 45° anticlockwise. For the answer figure, the alternative (C) fulfils these conditions.

11. (E) In each subsequent P.F. main design moves through 45° clockwise. Besides, outer two designs shift to the next end. From P.F. (1) to (2) out of then two designs one takes new shape while from P.F. (2) to (3) both the designs take a new shape. This order changes continues.

12. (A) From Pf_1 to Pf_2 at the upper right corner a new design takes place and all the rest designs shift a definite order.

13. (B) In each alternate figures two designs interchange their places while each of the remaining designs shifts one place clockwise out of which one takes a new shape.

14. (D) From Pf_1 to Pf_2 each design shifts one place anticlockwise and F moves also through 180° while the design the left takes a new shape. The same changes are from Pf_3 to Pf_4. Hence from Pf_5 to answer the same changes will take place.

15. (A) Small lines are decreased in the order of 1, 2, 3, 4 and 5 in anticlock direction in each subsequence figure while each time one line is added.

16. (B) In each subsequent figure the lines are decreased in order of $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, and $2\frac{1}{2}$ respectively clockwise.

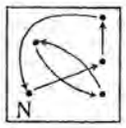
17. (C) From Pf_1 to Pf_2 the design attached to upper shifts to the lower line while a new design takes place at the upper line. The same change is from Pf_3 to Pf_4. Hence the same change will take place from Pf_5 to answer figure.

18. (A) In each subsequent P.F. the design ▲ at one end of the line, reverses and shifts a little to the back. The design C reverses in next P.F. and shifts to forward in alternate figures. Besides, the line at the right end, moves through 90° clockwise. Hence at 6th place there will be answer figure (A).

19. (E) From P.F. (1) to (2) the white semicircle shifts to the first end of the next side and one black triangle ▲ increases. From P.F. (2) to (3) the white semicircle shifts to next end of same side while the design ▲ shifts to end of the next side and a new ▲ increases at its place from P.F. (3) to (4) the white semicircle shifts the next side and a new white semicircle is formed at its place and a black triangle shifts one place onward. The same order of change is repeated. Hence at 6th P.F. there will be answer figure (E).

20. (E) From Pf_1 to Pf_2 the designs interchange positions and ↑ moves through 90° clockwise while other design moves through 90° anticlockwise. The same changes are from Pf_3 to Pf_4. Hence the same changes will be from Pf_5 to answer figure.

21. (D) From Pf_1 to Pf_2 the designs are shifting in the following ways.



Hence the same changes will be from Pf_1 to answer figure.

22. (A) In each subsequent figure the design is moving through 45°, 90°, 45°, 90° and 45° respectively clockwise.

23. (B) In each subsequent figure the arcs are increasing by 1 and 2 respectively anticlockwise but when two arcs increase they do not increase jointly but one at each end.

24. (E) From Pf_1 to Pf_2 the bottom design shifts to top and then reverses. The design from the top shifts in the middle and then reverses while the design from the middle shifts to bottom and takes a new shape. The same changes are from Pf_3 to Pf_4. Hence there will be same changes from Pf_5 to answer figure.

25. (C) In the first segment of the given figure. There is a figure which has a combination of four triangles and one of the triangles which lies on left lower side is partly thin shaded. There is a horizontal line on its upper side. In the next figure, this figure rotates 90° clockwise and shaded portion transfers to upper left triangle and it becomes thick. In third figure, the figure again rotates 90° clockwise, shaded portion thic to thin and its position changes left upper to right lower. For the final answer figure, 'C' fulfils the conditions which have been adopted in previous process.

26. (E) From P.F. (1) to (2) four lines are increased. From P.F. (2) to (3) three lines are increased. The same order of changes is repeated. Hence of P.F. (6), there will be answer figure (E).

27. (D) In each subsequent P.F. the line is increased by 1/2 and 1 respectively. Besides the whole design is moving through one side anticlockwise. Hence at P.E. (6) there will be answer figure (D).

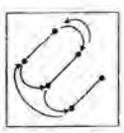
28. (E) In each subsequent figure the designs are reversing in order of 1, 2, 3, 4 and 1 respectively.

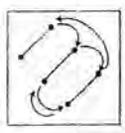
29. (B) From P.F. (1) to (3) the design shifts 1/2 distance along the diagonal and one acute angle is increased. From P.F. (2) to (4) the design shifts 1/2 distance along the diagonal and one right angle is increased. From P.F. (3) to (5) both designs shift 1/2 distance along the diagonal and one obtused angle is increased. Hence from P.F. (4) to (6) both the designs will shift 1/2 distance along the diagonal and one acute angle will increase. Hence at P.F. (6) there will be answer figure (B).

30. (E) In each subsequent figure triangular design moves through 90° anticlockwise and one side is decreased in clockwise direction. Besides from P.F. (1) to (2) two lines are increase in upper design. From P.F. (2) to (3) three lines are increased. The order of change is repeated. Hence at P.F. (6) there will be answer figure (E).

31. (B) In the first figure there is a square on which three lines are present on its upper side. In second figure this square rotates 45° clockwise and one more line is increased on its upper side. Each time square rotates 45° clockwise and there is increment of one line. For the answer figure, in final stage, there are eight lines on its upper side in which two are open. Answer figure (B) completes this process.

32. (C) Designs at the ends of lines are shifting as shown below—





From P.F. (1) to (2) From P.F. (2) to (3)
From P.F. (3) to (4) From P.F. (4) to (5)
From P.F. (5) to (6)

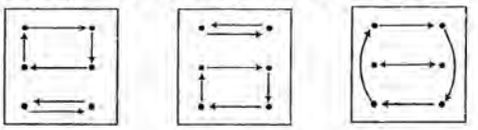
Hence at P.F. (6) there will be the answer fig. (C).

33. (C) In each subsequent P.F. black triangle shifts 1, and $1\frac{1}{2}$ sides clockwise respectively.

Besides, outer line shifts $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2 and $2\frac{1}{2}$ sides anticlockwise. Hence at P.F. (6) there will be answer figure (C).

34. (E) In each subsequent P.F. the designs are moving through 45° and 90° clockwise respectively. Besides from P.F. (1) to (2) the triangle shifts from one end to other end. From P.F. (2) to (3) the triangle reverses at its own place. This change of order is repeated. Hence at P.F. (6) there will be answer figure (E).

35. (A) Designs are shifting as shown below :

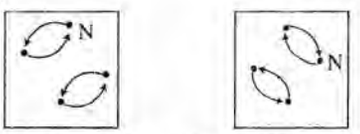


From Pf_1 to Pf_2 | From Pf_2 to Pf_3 | From Pf_3 to Pf_4

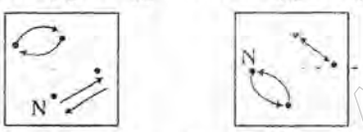
From Pf_4 to Pf_5

Hence from Pf_5 to answer figure there will be same change as from Pf_2 to Pf_3.

36. (B)



From Pf_1 to Pf_2 From Pf_2 to Pf_3



From Pf_3 to Pf_4 From Pf_4 to Pf_5

Hence the change from Pf_5 to answer figure will be same as from Pf_1 to Pf_2.

37. (A) From Pf_1 to Pf_2 each design shifts $1\frac{1}{2}$ sides anticlockwise and the design after reaching at upper left corner takes a new shape. The same changes take place from Pf_3 to Pf_4 therefore.

38. (C) From Pf_1 to Pf_2 the design moves through 90° clockwise and then reverses. From Pf_3 to Pf_4 the designs move through 90° clockwise and then reverse. Hence from Pf_5 to answer figure the designs will move through 90° and then will reverse.

39. (B) Only one part is black in the problem figures 1, 3 and 5. While there is increasing of black part by one in the problem figures 2, 4 and 6.

40. (D) From problem figure 1 to 2 the black part comes toward centre reaching in the next leaf in anticlockwise direction. And from problem figure 3 to 4 the black part reaching in the next leaf in anticlockwise direction comes toward outer side. In the same way from problem figure 5 to 6 black part will come toward centre reaching in the next leaf in anticlockwise direction. Thus, the answer figure (D) is obtained.

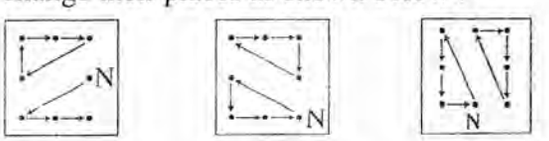
41. (A) From problem 1 to 3 there is increasing of design by one which comes on the left side in the larger shape. Thus the answer figure (A) is obtained.

42. (A) From problem figure 1 to 2 and 3 to 4 the design moves half side ahead anticlockwise rotating through 90°. In the same way from problem figure 5 to 6 the design will change, thus the answer figure (A) is obtained.

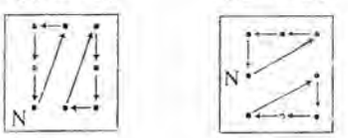
43. (B) In each successive problem figure there is increasing of design by one and the design moves anticlockwise one arm ahead, while a new design comes at the designs of even places. Thus the answer figure (B) is obtained.

44. (D) From problem figure 1 to 2 two designs from right change their places mutually and the design of left change to a new form at the same place and turns over vertically. From problem figure 2 to 3 two designs of left change their places mutually and the design of right changes to a new form and turns over vertically the same rule continues further, thus the answer figure (D) is obtained.

45. (E) In each subsequent figure the designs change their places as shown below :



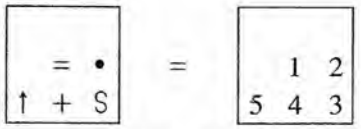
From Pf_1 to Pf_2 | From Pf_2 to Pf_3 | From Pf_3 to Pf_4



From Pf_4 to Pf_6 | From Pf_5 to Pf_6

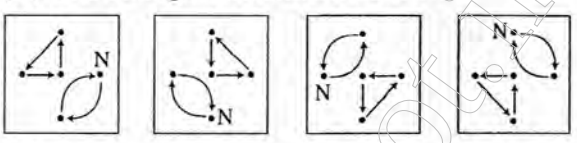
46. (E) From Pf_1 to Pf_2 and from Pf_3 to Pf_4 the lower most design moves through 180°. From Pf_1 to Pf_2 and from Pf_3 to Pf_4 the right part of

the upper most and next to upper most designs shift to next lower designs. Hence the correct answer is (E).

47. (A) if  then S shifts from 3 to 2 and from 2 to 5th place and so on. The design + shifts from 4 to 5 and from 5 to 1, from 1 to 2, from 2 to 3 and from 3 to 4. Hence the correct answer is (A).

48. (A) In each subsequent figure the upper and lower parts of the design interchange their places. Besides, this design shifts 1 and $1\frac{1}{2}$ sides respectively anticlockwise. Hence the correct answer is (A).

49. (B) The changes are shown below :



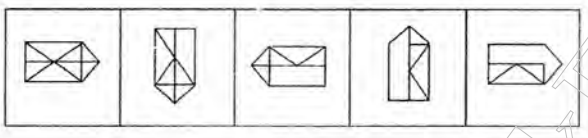
From Pf_1 to Pf_2 From Pf_2 to Pf_3 From Pf_3 to Pf_4 From Pf_4 to Pf_5

From Pf_5 to Pf_6

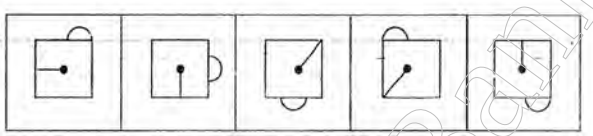
50. (E) From Pf_1 to Pf_2 the arc is reversed and a big line is changed into an arc. From Pf_2 to Pf_3 both the arcs are reversed while a small line is changed into an arc. From Pf_3 to Pf_4 all the arcs are reversed while a big line is converted into an arc. After this the order of change is repeated and the correct answer is (E).

Exercise 2

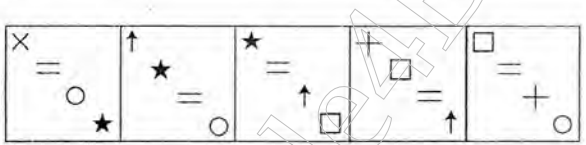
Problem Figures **Answer Figures**

1. 

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

2. 

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

3. 

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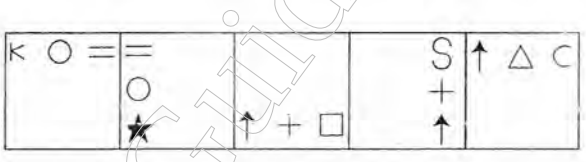
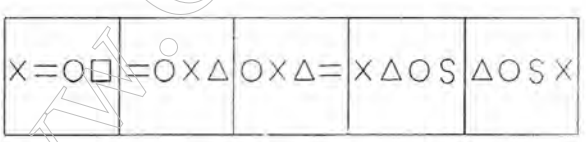
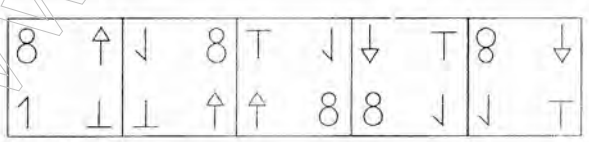
4. 

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

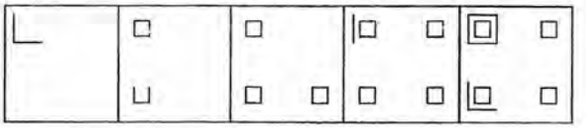
5. 

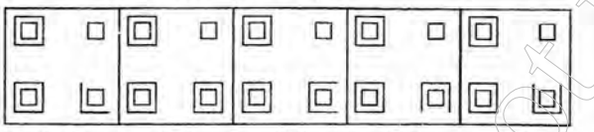
(A) (B) (C) (D) (E)

6. 

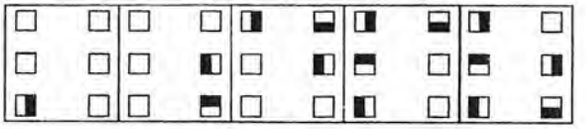
(A) (B) (C) (D) (E)

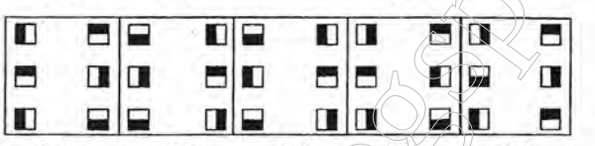
Problem Figures **Answer Figures**

7. 

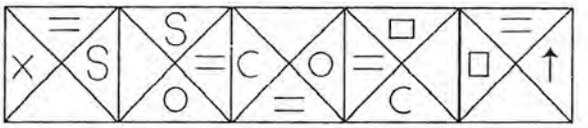


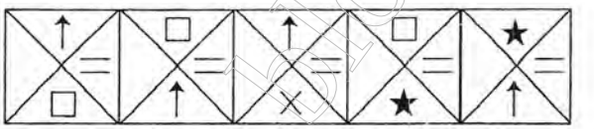
(A) (B) (C) (D) (E)

8. 



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

9. 



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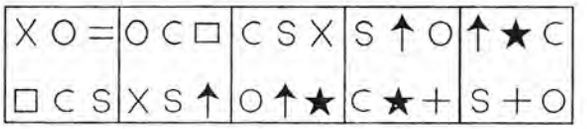
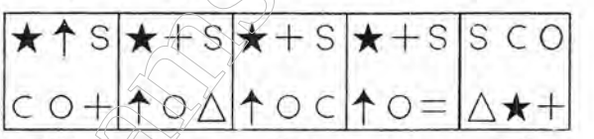
10. 



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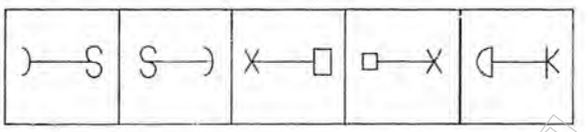
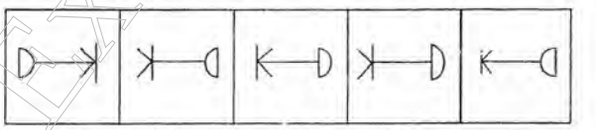
11. 



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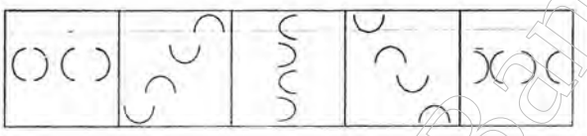
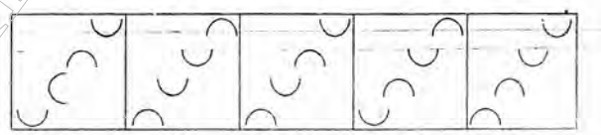
12. 



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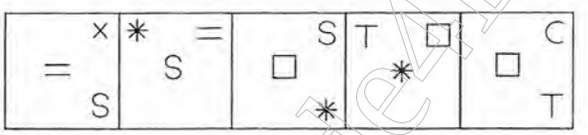
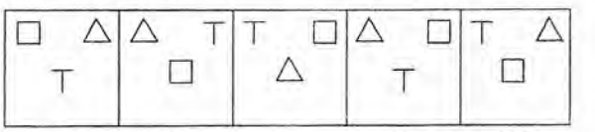
13. 



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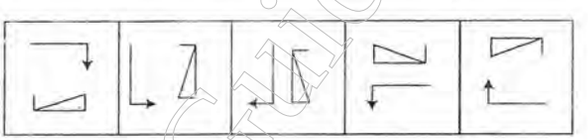
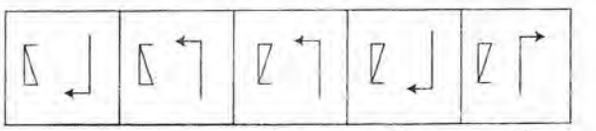
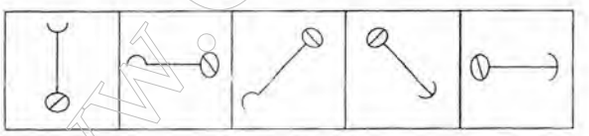
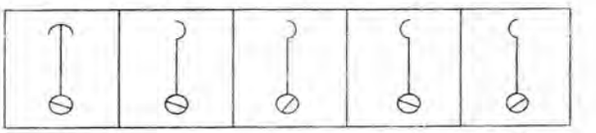
14. 



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

15. 



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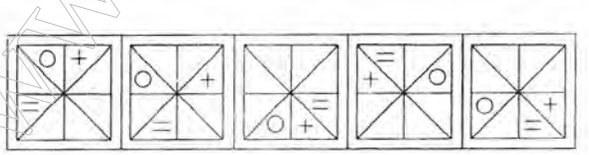
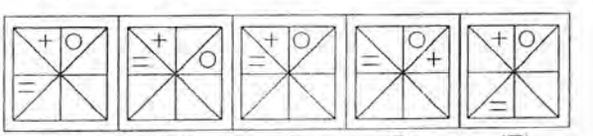
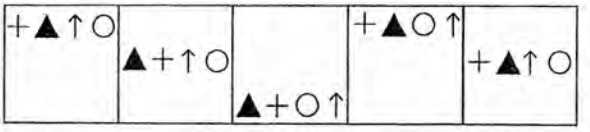
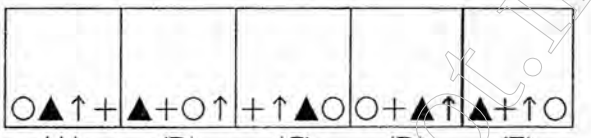
16. 



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

Problem Figures **Answer Figures**

17. 



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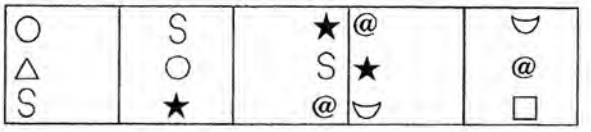
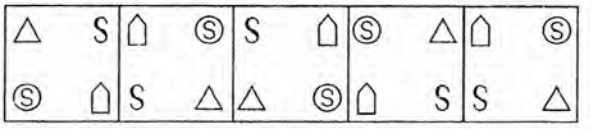
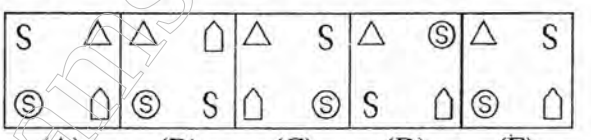
18. 

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

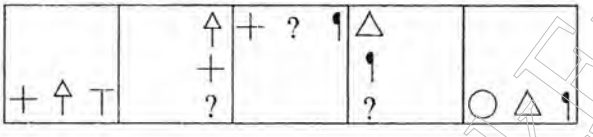
19. 

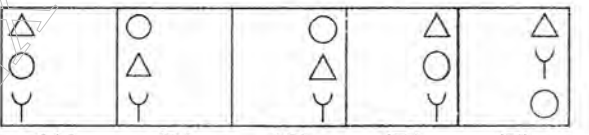
(A) (B) (C) (D) (E)

20. 



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

21. 



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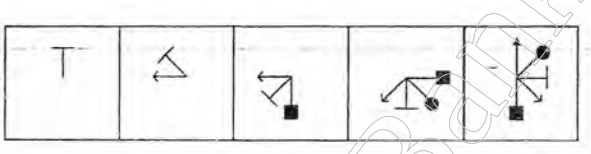
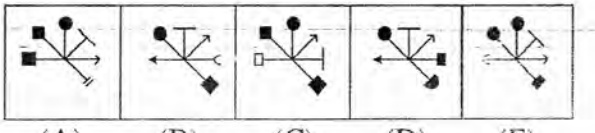
22. 



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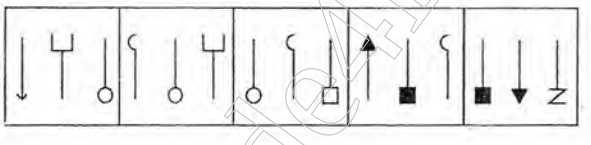
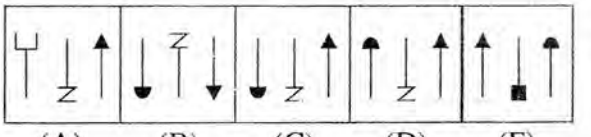
23. 



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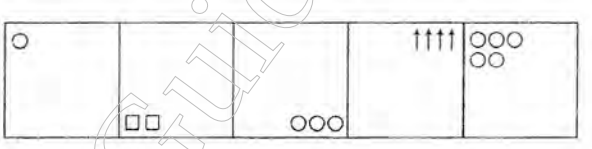
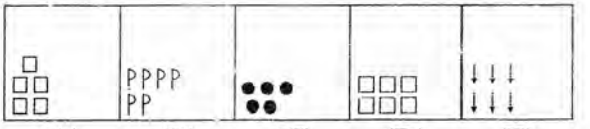
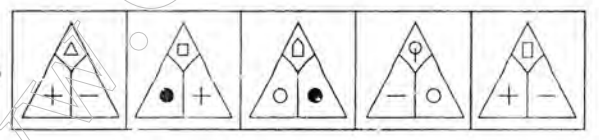
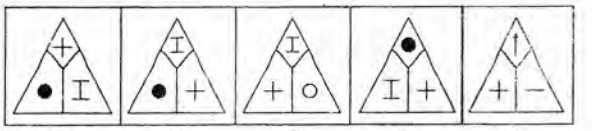
24. 

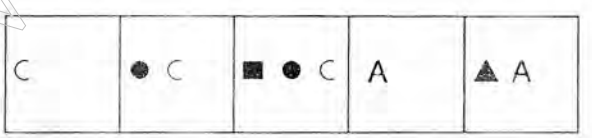


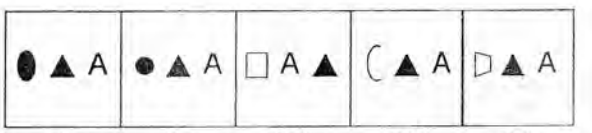
(A) (B) (C) (D) (E)

25. 



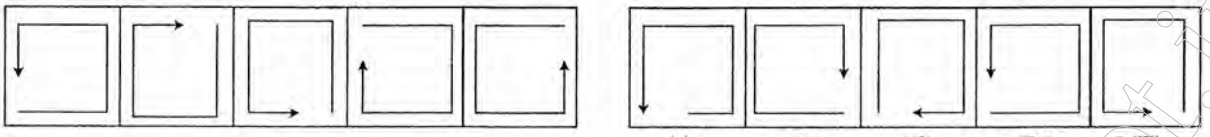
(A) (B) (C) (D) (E)

26. 



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

Problem Figures **Answer Figures**

27. 
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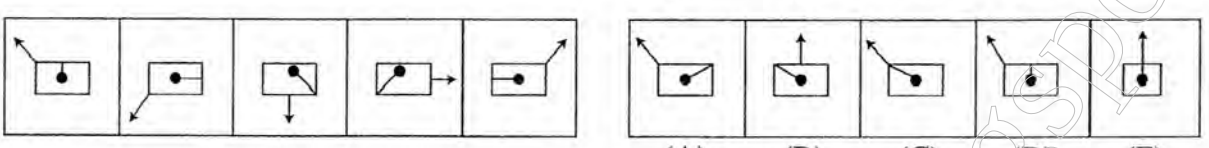
28. 
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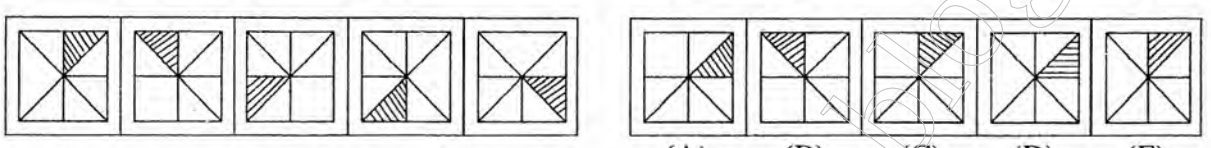
29. 
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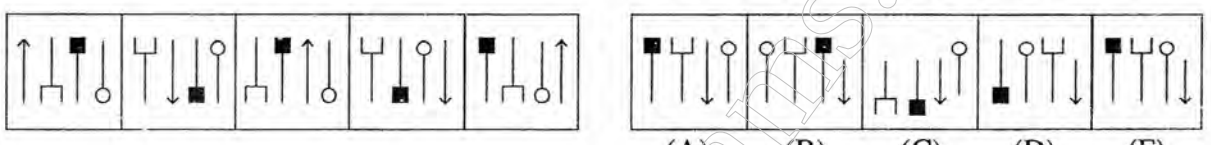
30. 
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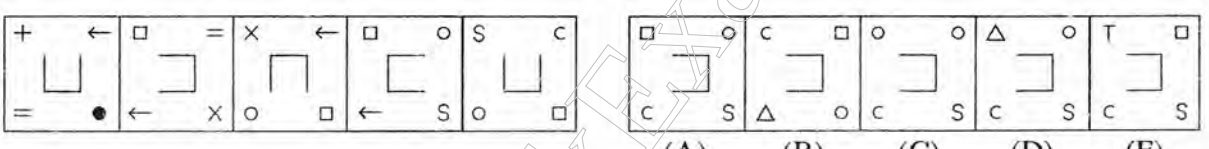
31. 
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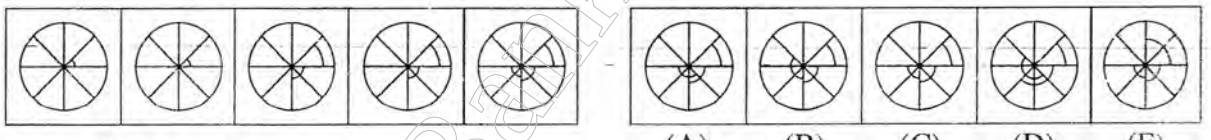
32. 
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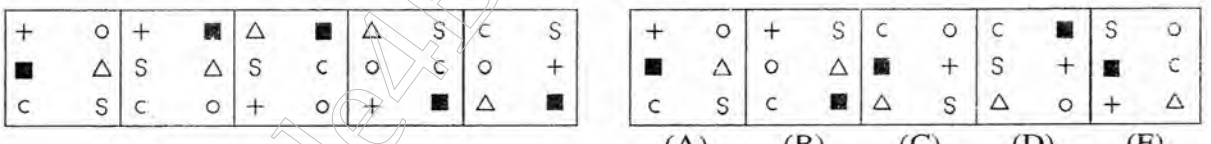
33. 
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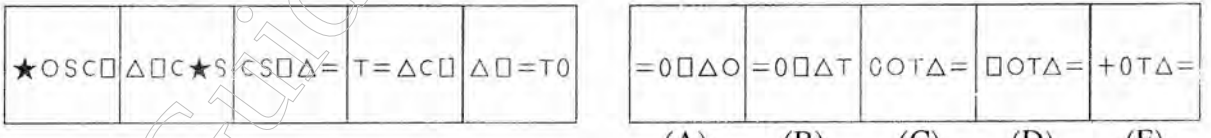
34. 
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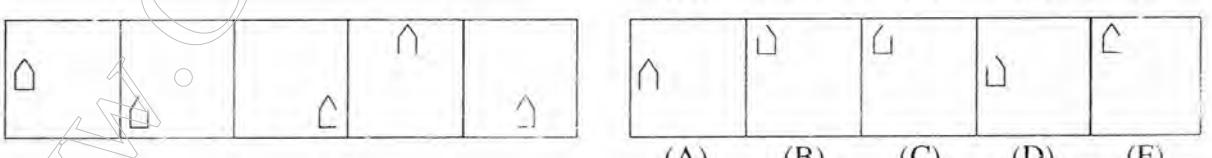
35. 
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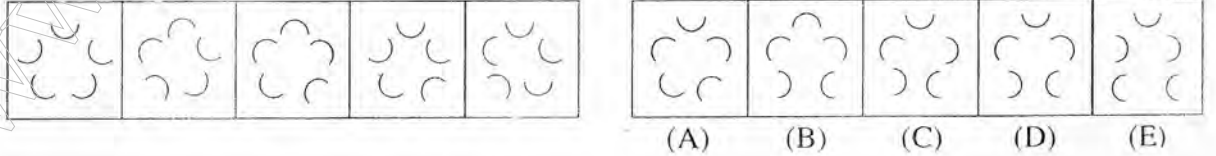
36. 
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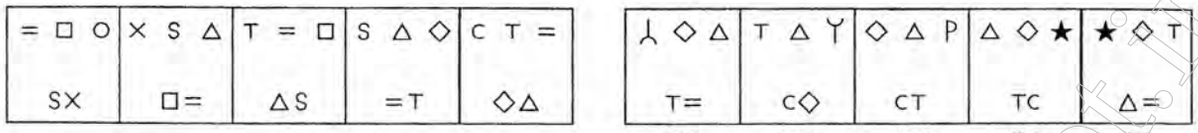
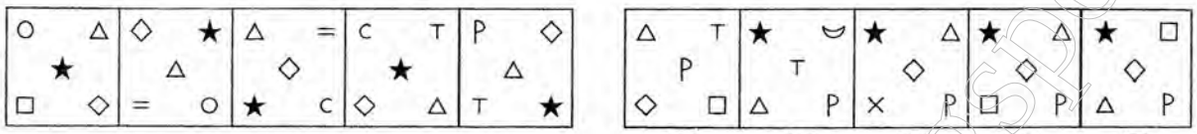
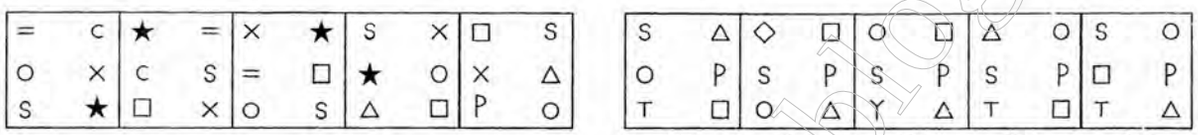
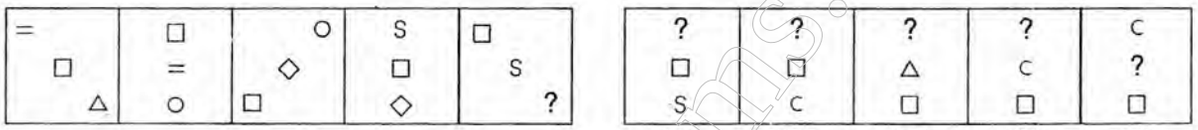
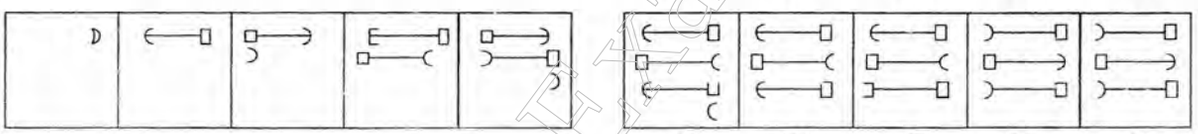
Problem Figures **Answer Figures**

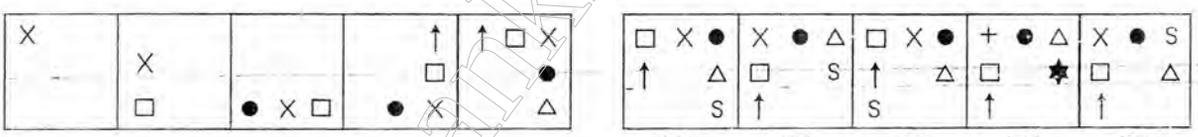
37. 

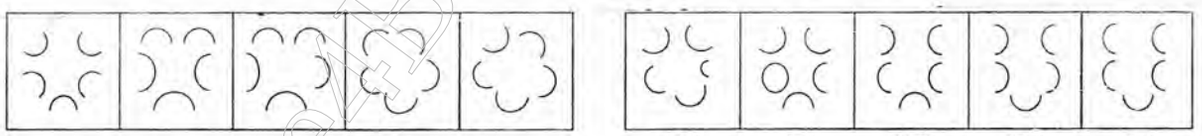
38. 

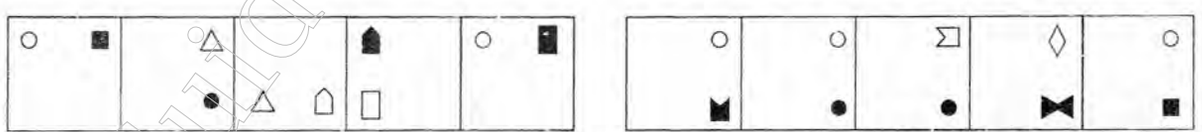
39. 

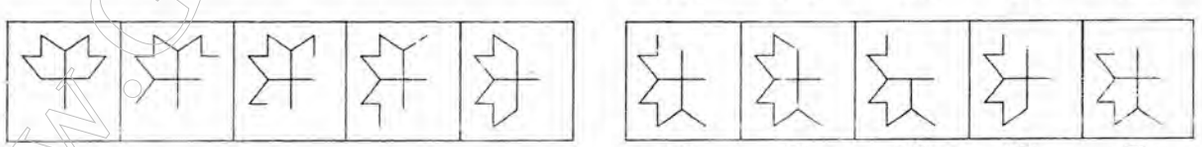
40. 

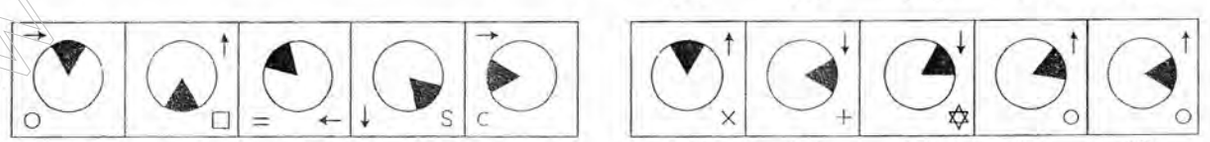
41. 

42. 

43. 

44. 

45. 

46. 

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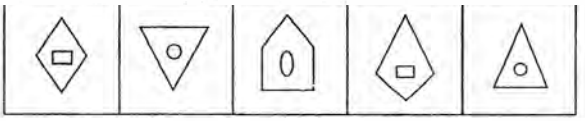
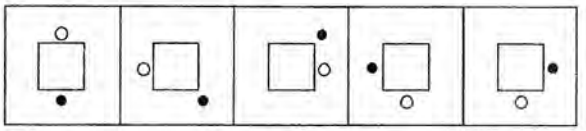


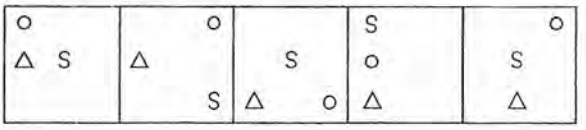
(A) (B) (C) (D) (E)

48.



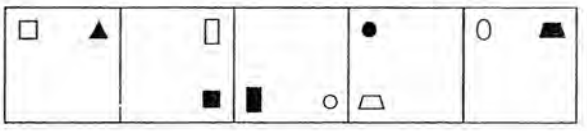
(A) (B) (C) (D) (E)

49.



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

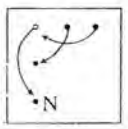
50.



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

Answers with Explanations

1. (E) In each subsequent figure the design is moving through 90° clockwise. Besides, one line from inside is disappearing starting from upper left clockwise.
2. (A) In each subsequent figure the semicircle is shifting $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2 and $2\frac{1}{2}$ lines respectively clockwise while the inner design is shifting 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$ and 3 lines respectively anticlockwise.
3. (F) From Pf_1 to Pf_2 the topmost design takes a new shape while the bottom design shifts to second place from top and each of the rest two design shifts one place down. From Pf_2 to Pf_3 the bottom design takes a new shape and the topmost design shifts one place down while each of the rest two designs shifts one place above. The order of change continues.
4. (C) The change of order is shown below :

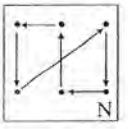


From Pf_1 to Pf_2, From Pf_3 to Pf_4 and from Pf_5 answer figure.

5. (A) The designs are shifting as shown below :

From Pf_1 to Pf_2 From Pf_2 to Pf_3
From Pf_3 to Pf_4 From Pf_4 to Pf_5
From Pf_5 to Pf_6

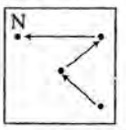
6. (D) In each subsequent figure each designs shifts one step clockwise. But lower left design after reaching to upper left reverses on horizontal axis.
7. (E) In each subsequent figures five lines are increasing in anticlock direction.
8. (A) In each subsequent figure each square shifts one step anticlockwise after moving through 90° in this direction. Beside next to half black square one more square is also half blackened.
9. (A) In each subsequent figure the design '=' interchanges with its next design which is at its clockwise while the third design shifts one step anticlockwise and then takes a new shape.
10. (B) In each subsequent figure the designs shift as shown below :



11. (E) From Pf_1 to Pf_2 both the designs at the end of a line interchange their places and the design at the left end are reaching to the right end is enlarged while the other design is reduced.

12. (C) From Pf_1 to Pf_5 all the designs are reversed. Hence in answer figures all the designs of Pf_2 will be reversed.

13. (D) The designs are shifting as shown below :



From Pf_1 to Pf_2
From Pf_3 to Pf_4
and from Pf_5 to answer figure

14. (C) From Pf_1 to Pf_2 both the designs interchange their places and then each of the them moves through 180°. Such changes will also take place from Pf_2 to answer figure.

15. (E) In each subsequent figure the whole rotates through 90°, 45°, 90° respectively anticlockwise. Besides, the design ⌴ from Pf_1 to Pf_2 rotates through 90° and the design ⊘ from Pf_2 to Pf_3 through 90° anticlockwise. The same rule continues. Thus the answer fig. (E) is obtained.

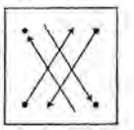
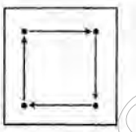
16. (C) In each subsequent figure the design '+' shifts 1, 2, 3, 4 and 5 steps clockwise respectively while each of the other two designs shifts 1, 2, 3, 4 and 5 steps anticlockwise respectively.

17. (E) Pf_1 to Pf_4 two designs at the right interchange their places. Pf_2 to Pf_5 two designs at the left interchange their positions. Therefore from Pf_3 to Pf_6 the two designs at the right will interchange their positions. Thus the answer figure (E) is obtained.

18. (B) Upto Pf_3 the whole group of designs shifts half side to the right and then from Pf_4 to Pf_5 it shifts half side towards the right. Besides, in each subsequent figure the designs shift as shown below :

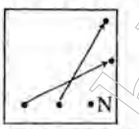
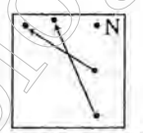
19. (A) Here $Pf_1 = Pf_5$, therefore Answer figure is $Pf_6 = Pf_2$.

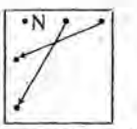
20. (E) Here the designs are shifting as shown below :

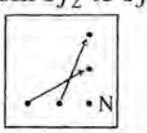
From Pf_1 to Pf_2 From Pf_2 to Pf_3
From Pf_3 to Pf_4 From Pf_4 to Pf_5
From Pf_5 to Pf_6

21. (D) The designs are shifting their places as shown below :



From Pf_1 to Pf_2 From Pf_2 to Pf_3 From Pf_3 to Pf_4



From Pf_5 to Pf_6 From Pf_5 to Pf_6

22. (E) In each subsequent figure design T moves through 45°, 90°, 45°, 90° respectively anticlockwise and a new design its left and then right is added respectively. Thus answer figure (E) is obtained.

23. (D) From Pf_1 to Pf_2 two designs from the right interchange and the third design takes a new shape at its own place. From Pf_2 to Pf_3 the designs from the left interchange while the third design takes a new shape at its own place. The same rule continues further. Thus answer figure (D) is obtained.

24. (B) In each subsequent figure the number of the designs is increasing by one and the designs take new shape. Besides these designs after increasing by one, shift one side anticlockwise. Thus answer figure (B) is obtained.

25. (B) In each subsequent figure, in the upper part of Δ a new design appears while in all other respect Pf_1 is same as Pf_5, so Pf_2 will be same as Pf_6.

26. (A) Upto Pf_3 in each figure one design is increasing which comes on the left side in larger shape and the previous design shifts half side after reducing in size. The order of change repeats from Pf_4 to answer figure.

27. (C) From Pf_1 to Pf_3 and from Pf_3 to Pf_5 the whole design is moving through 90° anticlockwise and also from Pf_2 to Pf_4 there is

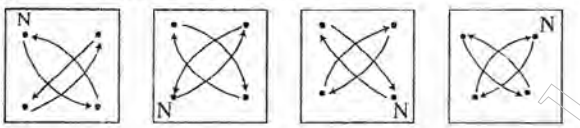
same change. Hence from Pf_5 to Pf_6 there will be same change.

28. (D) In each alternate figure the arrow shifts 1 and $\frac{1}{2}$ sides respectively anticlockwise while the other design shifts 1 and $\frac{1}{2}$ sides respectively clockwise.

29. (A) In each subsequent figure all the lines in the square moves through 45° anticlockwise while the shaded portion shifts one step anticlockwise.

30. (D) All the designs are inverted in next figure. Besides, from Pf_1 to Pf_2 I and II interchange their positions. Pf_2 to Pf_3 II and III interchange. From Pf_3 to Pf_4 III and IV interchange. From Pf_4 to Pf_5 I and II interchange. Hence Pf_5 to Pf_6 II and III will interchange.

31. (D) In each subsequent figure the central design moves through 90° anticlockwise. Besides, the other designs change their positions as shown below :



From Pf_1 to Pf_2 | From Pf_2 to Pf_3 | From Pf_3 to Pf_4 | From Pf_4 to Pf_5

From Pf_5 to Pf_6

32. (C) Here $Pf_1 = Pf_2$, $Pf_3 = Pf_4$

Hence Pf_5 = answer figure.

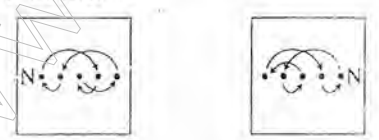
33. (C) The designs are shifting as shown below :

Pf_1 to Pf_2 | Pf_2 to Pf_3

Pf_3 to Pf_4 | Pf_4 to Pf_5

Pf_5 to Pf_6

34. (E) The designs are changing their positions as shown below :

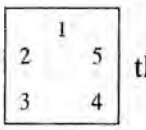


Pf_1 to Pf_2 | Pf_2 to Pf_3

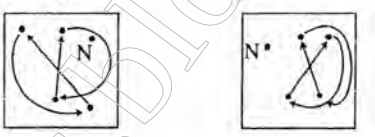
Pf_3 to Pf_4 | Pf_4 to Pf_5

Pf_5 to Pf_6

35. (B) In each subsequent figure the design shifts $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2 and $2\frac{1}{2}$ sides anticlockwise and one side disappears clockwise which is again added in the next figure.

36. (B) If  then arcs are reversing in following order 1, 2, 3; 3, 4, 5; 5, 1, 2; 2, 3, 4 and 4, 5, 1.

37. (D) The designs are shifting as shown below :

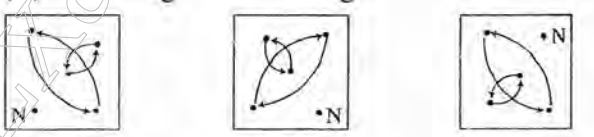


Pf_1 to Pf_2 | Pf_2 to Pf_3

Pf_3 to Pf_4 | Pf_4 to Pf_5

Pf_5 to Pf_6

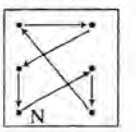
38. (C) The designs are shifting as shown below :



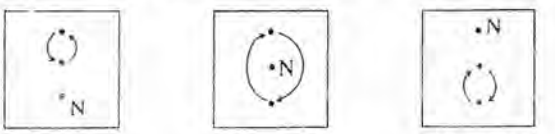
Pf_1 to Pf_2 | Pf_2 to Pf_3 | Pf_3 to Pf_4

Pf_4 to Pf_5 | Pf_5 to Pf_6

39. (C) In subsequent figure the designs are shifting as shown below :



40. (D) In each subsequent figure all the designs shift from the middle to the diagonals. Besides, the shifts as shown below :



Pf_1 to Pf_2 | Pf_2 to Pf_3 | Pf_3 to Pf_4

Pf_4 to Pf_5 | Pf_5 to Pf_6

41. (B) Each of designs —□ and arc is added in alternate figures. Besides arcs and —□ reverse in direction.

42. (C) The design 'x' shifts $\frac{1}{2}$ side and 1 side respectively anticlockwise. Besides, one new design is added once before and once after the prexisting design.

43. (A) Two and one arcs reverse respectively in alternate figures.

44. (C) In each subsequent figure the white design shifts opposite and diagonally and changes to black, while the blacks takes a new shape in its own place.

45. (A) In each subsequent figure one line disappears from upper part while one line is added to the lower part.

46. (E) The black sector shifts 180° and 135° anticlockwise alternately. The arrow shifts one side clockwise and moves through 90° anticlockwise each next figure. Besides the third design shifts from lower left to lower right vice versa and takes a new shape each time.

47. (C) Pf_1 reappears as Pf_4 but inverted shape. Similarly Pf_2 as Pf_5 and Pf_3 will reappear as answer figure.

48. (A) In each subsequent figure the black circle shifts $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2 and $2\frac{1}{2}$ sides respectively anticlockwise while the white circle is shifting 1, 2, 3, 4 and 5 sides respectively anticlockwise.

49. (D) In each subsequent figure the circle is shifting 1, 1, $1\frac{1}{2}$, $1\frac{1}{2}$ and 2 sides respectively clockwise and the triangle is shifting 0, $\frac{1}{2}$, 0, $\frac{1}{2}$ and 0 sides respectively anticlockwise while S is shifting $\frac{1}{2}$ along diagonal.

50. (E) In each subsequent figure the white design shifts to opposite end and becomes black while the other design is changed into a new shape at its own place.

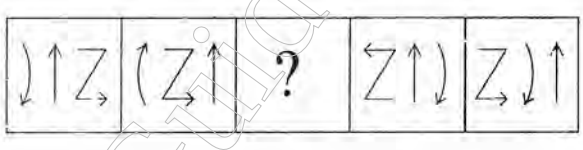
Exercise 3

Directions—(Q. 1–50) In each of the following questions there are two sets of figures. The figures on the left are problem figures (four figures and one question marked (?) space) and those on the right are answer figures indicated by letters, (A), (B), (C), (D) and (E). A series is established if one of the five answer figures is placed at the question marked (?) space. Figures form a series if they change from left to right according to same rule. The letter of the answer figure which should be placed in the question marked space is the answer.

Problem Figures **Answer Figures**

1. 

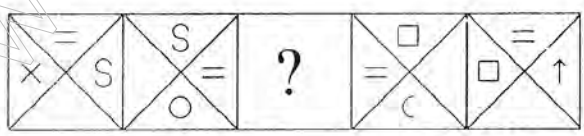
(A) (B) (C) (D) (E)

2. 

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

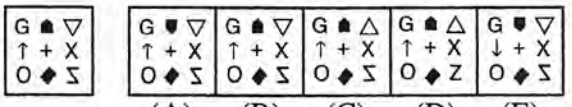
3. 

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

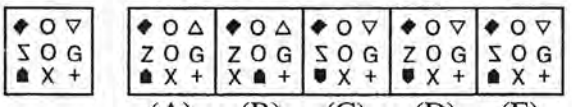
4. 

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

Question Figure **Answer Figures**

45. 
(A) (B) (C) (D) (E)

46. 
(A) (B) (C) (D) (E)

47. 
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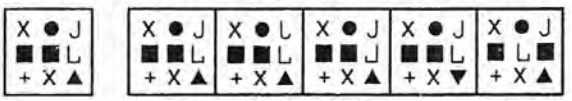
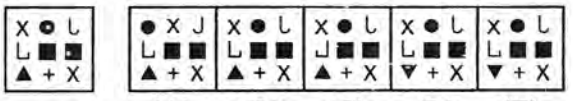
48. 
(A) (B) (C) (D) (E)

49. 
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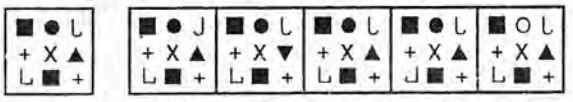
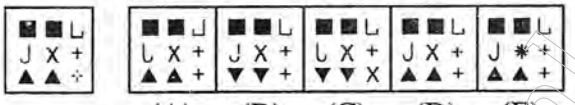
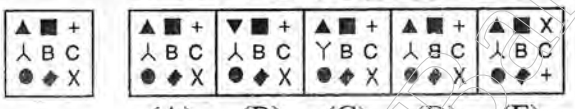
50. 
(A) (B) (C) (D) (E)

51. 
(A) (B) (C) (D) (E)

52. 
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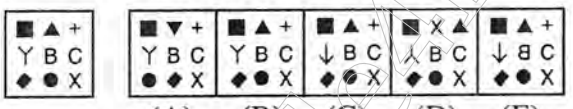
53. 
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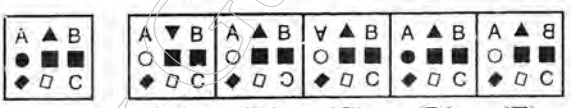
54. 
(A) (B) (C) (D) (E)

55. 
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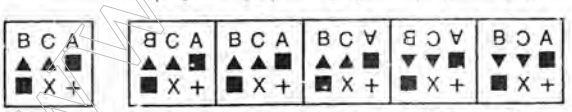
56. 
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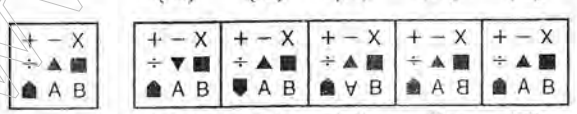
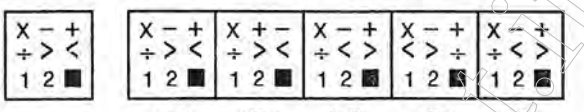
57. 
(A) (B) (C) (D) (E)

Question Figure **Answer Figures**

58. 
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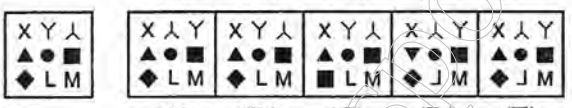
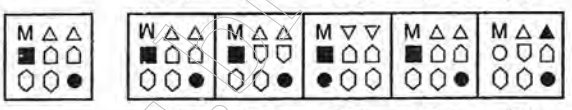
59. 
(A) (B) (C) (D) (E)

60. 
(A) (B) (C) (D) (E)

61. 
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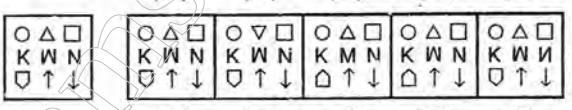
62. 
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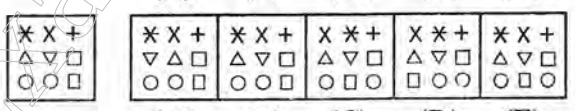
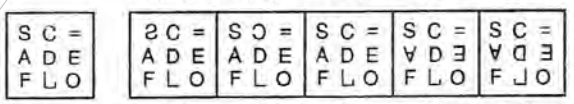
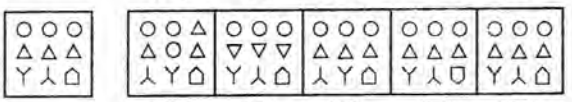
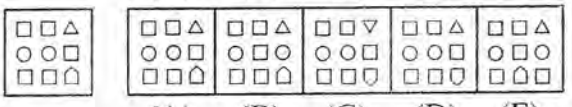
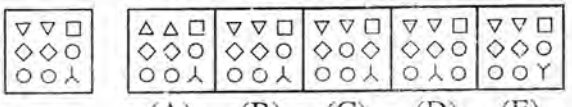
63. 
(A) (B) (C) (D) (E)

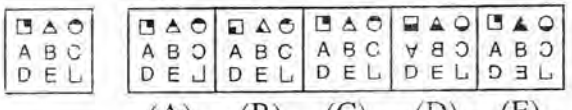
64. 
(A) (B) (C) (D) (E)

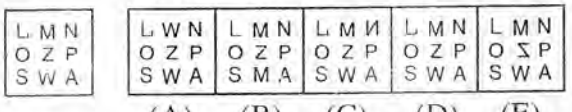
65. 
(A) (B) (C) (D) (E)

66. 
(A) (B) (C) (D) (E)

67. 
(A) (B) (C) (D) (E)

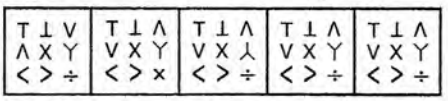
68. 
(A) (B) (C) (D) (E)

69. 
(A) (B) (C) (D) (E)

70. 
(A) (B) (C) (D) (E)

Question Figure **Answer Figures**

71. 



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

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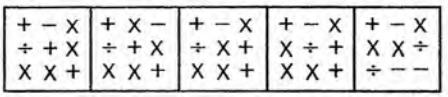
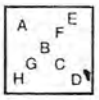
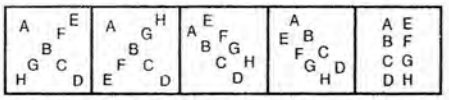
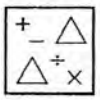


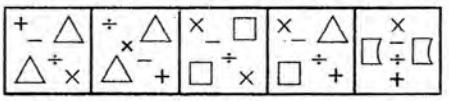
(A) (B) (C) (D) (E)

73. 



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

74. 



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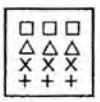
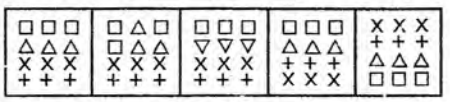
75. 



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

Answers

1. (A)	2. (E)	3. (C)	4. (D)	5. (C)
6. (A)	7. (D)	8. (B)	9. (B)	10. (E)
11. (B)	12. (A)	13. (C)	14. (B)	15. (C)
16. (E)	17. (B)	18. (A)	19. (D)	20. (A)
21. (C)	22. (E)	23. (A)	24. (D)	25. (C)
26. (D)	27. (A)	28. (E)	29. (B)	30. (C)
31. (A)	32. (C)	33. (A)	34. (D)	35. (B)
36. (D)	37. (C)	38. (C)	39. (C)	40. (B)
41. (A)	42. (D)	43. (E)	44. (A)	45. (B)
46. (D)	47. (E)	48. (A)	49. (B)	50. (C)
51. (D)	52. (A)	53. (B)	54. (C)	55. (D)
56. (B)	57. (E)	58. (A)	59. (B)	60. (C)
61. (D)	62. (A)	63. (B)	64. (C)	65. (D)
66. (E)	67. (A)	68. (B)	69. (C)	70. (D)
71. (E)	72. (A)	73. (A)	74. (A)	75. (A)