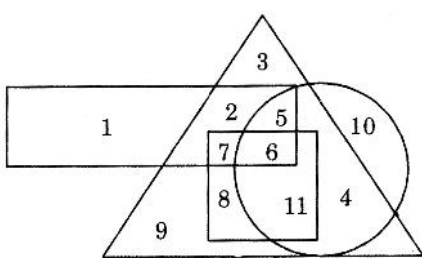


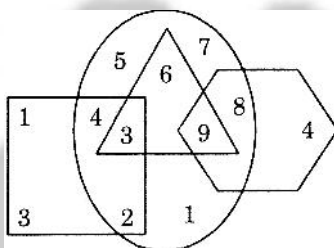
LOGICAL VEN DIAGRAM

Directions for Q.1 to Q. 3 : The following questions are based on the diagram given below :



- (a) The rectangle represents government employees
(b) The triangle represents urban people
(c) The circle represents graduates
(d) The square represents clerks
- Which of the following statement is true ?
(a) All government employees are clerks.
(b) Some government employees are graduates as well as clerks
(c) All government employees are graduates
(d) All clerks are government employees but not graduates
 - Which of the following statements is true ?
(a) All urban people are graduates
(b) Some clerks are government employees but not urban
(c) All government employees are clerks
(d) Some urban people are not graduates
 - Choose the correct statement :
(a) Some clerks are government employees
(b) No clerk is urban
(c) All graduates are urban
(d) All graduates are government employees

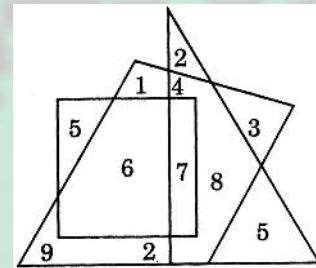
Directions for Q.4 to Q.8 : Study the figure given below carefully and answer the question that follow :



- Which number belongs to all the figures ?
(a) 3 (b) 4 (c) 6 (d) None
- What is the sum of the numbers which belong to two figures only ?
(a) 6 (b) 15 (c) 20 (d) None

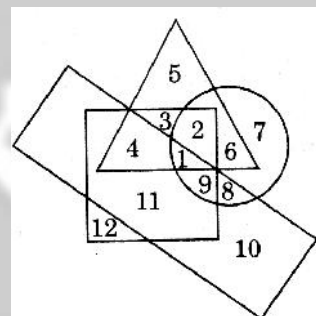
- What is the product of the numbers which belong to three figures only ?
(a) 27 (b) 162 (c) 648 (d) None
- What is the sum of the numbers which belong to one figure only ?
(a) 5 (b) 16 (c) 21 (d) None
- What is the product of the numbers which belong to two figures only ?
(a) 64 (b) 192 (c) 384 (d) None

Directions for Q. 9 to Q.12 : These questions are based on the diagram given below :



- Which number is inside all three figures?
(a) 2 (b) 6 (c) 7 (d) 8
- What is the sum of the numbers which belong to two figures only ?
(a) 10 (b) 14 (c) 18 (d) None
- Multiply the number which belongs to the square only with the sum of the numbers which belong to the trapezium only. What is the result ?
(a) 45 (b) 60 (c) 75 (d) None
- Multiply the number which belongs to all the three figures with the sum of the numbers which belong to the triangle only. What is the result ?
(a) 14 (b) 35 (c) 49 (d) None

Directions for Q. 13 to Q. 20 : In the given diagram, the circle stands for educated, square for hard-working, triangle for urban and the rectangle for honest people. Different regions in the diagram are numbered from 1 to 12 . Study the diagram carefully to choose the correct answer in the following questions.



13. People who are educated, hard-working and honest but not urban are represented by :
(a) 2 (b) 8 (c) 9 (d) 13
14. Hard- working people who are uneducated, dishonest and urban are represented by :
(a) 3 (b) 4 (c) 8 (d) 9
15. Non- urban, educated people who are neither honest nor hard-working are represented by :
(a) 12 (b) 11 (c) 10 (d) 7
16. Hard- working, non-urban people who are neither educated nor honest are indicated by :
(a) 9 (b) 10 (c) 11 (d) 12
17. Urban educated people who are neither honest nor hard-working are indicated by :
(a) 2 (b) 4 (c) 6 (d) 9
18. Urban people who are hard- working and educated but not honest are represented by :
(a) 1 (b) 2 (c) 3 (d) 4
19. Which of the following statements is true ?
(a) No person is urban, educated, honest and hard- working
(b) Some honest people are also hard- working and educated
(c) All educated people are urban
(d) Uneducated people are either honest or hard-working
20. Region 4 is best described as consisting of :
(a) People who are non- urban, honest, uneducated and hard- working
(b) People who are uneducated, urban honest and hard-working
(c) People who are uneducated, urban hard- working and dishonest
(d) People who are urban, hard- working, honest and educated

Class-Test

Logical Venn Diagrams (Solution)

1. (b) The above cases may be considered as under :

For statement (a) to be true, the rectangle should lie inside the square. This is not true. Hence (a) is false.

For statement (b) to be true, there should be region common to the rectangle, circle and the square. Such a region is 6. Hence, (b) is true.

Further, for statement (c) to be true, the rectangle should lie inside the circle. So, (c) is false.

For statement (d) to be true, square should lie wholly inside the rectangle, with no region common to the circle. This is not true. So, (d) is false.

2. (d) For the validity of condition (a), the rectangle should lie inside the circle. This is not true. Hence (a) is false.

For the validity of statement (b), there should be a region which is common to the square and the rectangle but is not a part of the triangle. since no such region exists, (b) is false.

For the validity of statement (c), the rectangle should lie inside the square. This is not true. So, (c) is false.

For the validity of statement (d), some region of the triangle should lie outside the circle. Since this is true, so, (d) is true.

3. (a) For the validity of statement (a), there should be a region common to the square and rectangle. Such regions are 6 and 7. So, (a) is true.

Further, for statement (b) to be true, there should be no region common to the square and the triangle. But since square lies wholly inside the triangle, (b) is false.

For statement (c) to be true, circle should lie inside the triangle. Clearly (c) is false.

For the validity of statement (d), the circle should lie inside the rectangle. Clearly (d) is false.

4. (d) Clearly, we have to find a number which lies inside each one of the four figures — triangle, square, oval and hexagon. There is no such number in the given diagram.

Hence, the answer is (d).

5. (c) We first find the numbers which belong to two figures only, as follows :

Numbers common to square and oval : 2, 4

Numbers common to triangle and oval : 6

Numbers common to hexagon and oval : 8.

The numbers common to square and triangle i.e. 3 or triangle and hexagon i.e. 9 lie inside the oval also, and hence none of them shall be considered here.

\therefore Required sum = $(2 + 4 + 6 + 8) = 20$

Hence, the answer is (c).

6. (a) We first find the numbers which belong to three figures only, as follows :

Number common to square, triangle and oval : 3.

Number common to triangle, hexagon and oval : 9.

\therefore Required product = $3 \times 9 = 27$.

7. (c) We first find the numbers which belong to one figure only, as follows :

Numbers inside the square only : 1, 3.

Numbers inside the oval only : 1, 5, 7.

Numbers inside the hexagon only : 4.

\therefore Required sum = $(1 + 3 + 1 + 5 + 7 + 4) = 21$

8. (c) We first find the numbers which belong to two figures only. Clearly, such numbers are 2, 4, 6, 8.

\therefore Required product = $(2 \times 4 \times 6 \times 8) = 384$.

9. (c) Clearly, 7 lies inside the square, trapezium and triangle.

10. (c) Numbers common to square and trapezium : 6.

Numbers common to trapezium and triangle : 4, 8

The number common to square and triangle i.e. 7 also lies inside the trapezium. So, it is not to be considered.

\therefore Required sum = $(6 + 4 + 8) = 18$

11. (c) Number which belongs to the square only : 5.

Numbers which belong to the trapezium only : 1, 3, 9, 2.

\therefore Required product = $5 \times (1 + 3 + 9 + 2) = (5 \times 15) = 75$.

12. (c) Number which belongs to all the three figures : 7.

Numbers which belong to the triangle only : 2, 5.

\therefore Required product = $7 \times (2 + 5) = (7 \times 7) = 49$.

13. (b) The required set of people is represented by the region which lies outside the triangle and is common to the circle, square and rectangle i.e. 9.

14. (a) The required set of people is represented by the region which is common to the triangle and the square but lies outside the circle and rectangle i.e. 3.

15. (d) The required set of people is represented by the region which lies outside the triangle, inside the circle but outside the rectangle and the square i.e. 7.

16. (d) The required set of people is denoted by the region which lies inside the square but outside the triangle, circle and rectangle i.e. 12.

17. (c) The required set of people is denoted by the region which is common to the triangle and the circle, but is not a part of either the rectangle or the square i.e. 6.

18. (b) The required set of people is represented by the region which is common to the triangle, square and circle but is not a part of the rectangle i.e. 2.

19. (b) For (a) to be true, there should be no region common to all the four figures. But such a region exists, which is 1. So (a) is false

For (b) to be true, there should be a region common to rectangle, circle and square, which is 9. So, (b) is true.

For (c) to be true, the circle should lie inside the triangle. But this is not so. So, (c) is false.

It follows from the figure that uneducated people are honest, hard-working or urban or may possess a combination of these qualities. So, (d) is false.

20. (b) 4 lies outside the circle and is common to the triangle, square and rectangle. So, 4 represents people who are uneducated, urban, honest and hard-working.