

CH 4 LOGICAL VENN DIAGRAM

ANSWERS AND EXPLANATIONS

1. (b) Asian Non-Christian females who are professionals are represented by the common figure of all square except Christians's square i.e., 10
2. (a) Asian females who are neither professional nor Christian are denoted by the common figure of Asians square and Females square i.e., 6
3. (c) Non-Asian professional christian male are represented by the common figure of christian's square and professional square i.e., 12
4. (d) Christian females who are Non-professional and Asian are represented by the common figure of all squares except professionals square. But no any figure belongs in these three squares.
5. (b) The shaded portion is the common portion of all square except Asians.
6. (b) The required region is the region which is common to the triangle and square but lies outside the circle i.e. B.
7. (b) Strong armymen will be represented by the region which is common to the square and the triangle i.e. 4, 7.
8. (c) The persons satisfying the given conditions are denoted by regions which lie inside the smaller triangle or the circle but outside the bigger triangle i.e. A and E.
9. (a) The person satisfying the given conditions are represented by regions which are common to the bigger triangle and the circle but lies outside the rectangle i.e. B and C.
10. (d) The persons satisfying the given conditions are represented by regions which lie inside the bigger triangle but outside the smaller triangle and the circle i.e. L and H.
11. (b) The person satisfying the given conditions is represented by the region common to the rectangle, circle and the smaller triangle i.e. F.
12. (a) The required region is the one common to the rectangle, square, circle and the triangle i.e. 7.
13. (d) The required region is the one which is common to only the rectangle and the circle and is not a part of either the triangle or the square i.e. 4.
14. (b) The required region is the one which lies inside the triangle and outside the rectangle, square and circle i.e.1.
15. (c) The required region is the one which lies inside the circle but outside the rectangle, square and triangle i.e. 3.
16. (c) The required region is the one which is common to only the triangle and the circle i.e. 2.
17. (a) The required region is the one which is common to circles X and Z but lies outside the circle Y i.e. T.
18. (c) Married persons living in joint families are presented by the region common to the square and the circle i.e., D and B. But, according to the conditions, the persons should not be school teachers. So, B is to be excluded . Hence, the required condition is denoted by region D.
19. (c) Persons living in joint families are represented by the circle. According to the given conditions, the persons should be unmarried and not working as school teachers. So, the region should not be a part of either the square or the triangle. Thus, the given conditions are satisfied by the region E.
20. (b) Married teachers are represented by the region common to the square and the triangle i. e. ,B and C. But, according to the given conditions, the persons should be living in joint families. So, the required region should be a part of the circle .Since B lies inside the circle, so the given conditions are satisfied by the persons denoted by the region B.
21. (a) As in the above question, married teachers are represented by B and C. But, here, the given conditions lay down that the persons should not be living in joint families. So, the required region



should lie outside the circle. Since C lies outside the circle, so the given conditions are satisfied by the persons denoted by the region C.

22. (a) School teachers are represented by the triangle. But according to the given conditions, persons are neither married nor do they live in joint families. So, the region should not be a part of either of either the square or the circle. Such region is F. Hence, the answer is (1).

23. (d) The required region is the one which is common to the circle and the triangle only i.e, D

24. (d) The required region is the one which is common to the triangle and the rectangle but lies outside the circle i.e, Z.

25. (c) C lies inside the triangle only. So, C represents surgical Specialists.

26. (c) B lies inside the rectangle only. So, B represents Medical Specialists who are neither Professors nor surgical Specialists.

27. (b) The required region is the one which is common to the triangle and the circle but lies outside the square i.e, X.

28. (a) The required set of students is denoted by region common to any three circle only

$$\therefore \text{Required number} = (13 + 13 + 18 + 18) = 62.$$

29. (a) The required set of students is denoted by regions lying inside the circles representing History, Mathematics and Science. \therefore Required number = $(9 + 14 + 18 + 15 + 16 + 13 + 13 + 20 + 18 + 13 + 16 + 19) = 183.$

30. (b) The required set of students is denoted by the regions common to the circles representing History and Geography.

$$\therefore \text{Required number} = (20 + 13 + 12 + 18) = 63.$$

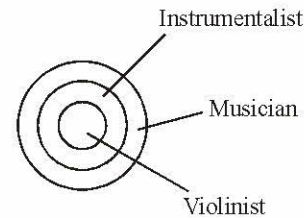
31. (b) Number of students who took History = $(16 + 12 + 18 + 20 + 18 + 14 + 13) = 111.$

Number of students who took Geography = $(9 + 16 + 13 + 20 + 13 + 12 + 18) = 101.$

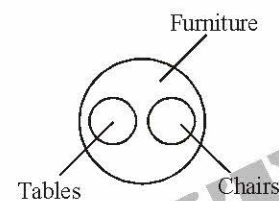
Number of students who took science = $(19 + 15 + 18 + 20 + 18 + 16 + 13) = 119.$

Number of students who took mathematics = $(9 + 14 + 13 + 20 + 13 + 15 + 18) = 102.$

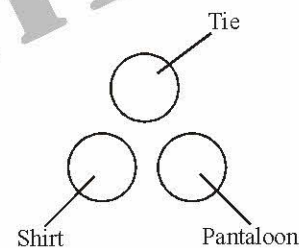
32. (a) All violinists are instrumentalists. All instrumentalists are musicians.



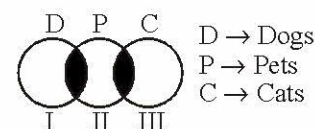
33. (d) Tables and chairs are unrelated items. But, both are items of Furniture.



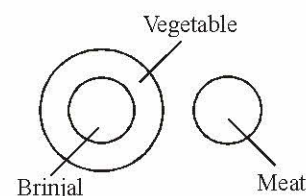
34. (c) Tie, Shirt and Pantaloon are separate items, entirely different from each other.



35. (e) Dogs and Cats are entirely different from each other. But, both are pet animals. Some dogs and cats are pets.



36. (b) Brinjal is a vegetable. But meat is entirely different.



37. (d) Machinery and Product are entirely different. But, both are present in a factory.



