

6. Logical Venn Diagrams

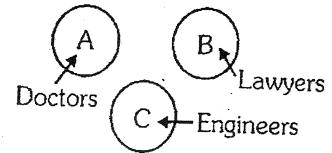
This section deals with questions which aim at analysing a candidate's ability to relate a certain given group of items and illustrate it diagrammatically. Here are a few different types of Venn diagrams with their implications made clear.

Suppose you are given a group of three items. Then,

1. If the items evidently belong to three different groups, the Venn diagram representing it would be as shown alongside.

Ex. Doctors, Engineers, Lawyers

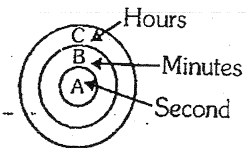
These three items bear no relationship to each other. So they are represented by 3 disjoint figures as shown in fig.



2. If one item belongs to the class of the second and the second belongs to the class of third, then the representation is in the form of three concentric circles, as shown in fig.

Ex. Seconds, Minutes, Hours

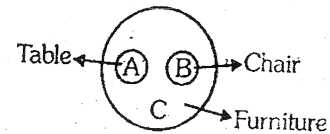
Clearly, seconds are a part of minutes and minutes are a part of hours. So, the Venn diagram would be as shown in the adjoining figure with circle A representing *Seconds*, circle B representing *Minutes* and circle C representing *Hours*.



3. If two separate items belong to the class of the third, they are represented by two disjoint circles inside a bigger circle as shown in fig.

Ex. Table, Chair, Furniture

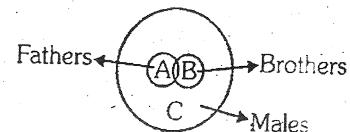
Clearly, table and chair are separate items but both are items of furniture. So, they would be represented as in the adjoining figure with circle A representing *Table*, circle B representing *Chair* and circle C representing *Furniture*.



4. If two items belong to the class of the third such that some items of each of these two groups are common in relationship, then they are represented by two intersecting circles enclosed within a bigger circle.

Ex. Males, Fathers, Brothers

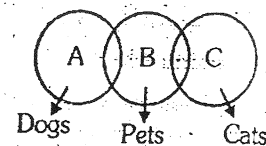
Clearly, some fathers may be brothers and vice-versa. So, fathers and brothers would be represented by two intersecting circles. Also both fathers and brothers are males. So, the diagrammatic representation would be as shown in fig., with circle A representing *Fathers*, circle B representing *Brothers* and circle C representing *Males*.



5. If two items are partly related to the third, and are themselves independent of each other they are represented by three intersecting circles in a line.

Ex. Dogs, Pets, Cats

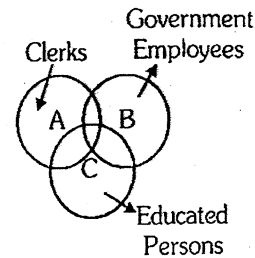
Clearly, some dogs and some cats are pets. But all the pets are not dogs or cats. Also dogs and cats are not related to each other. So, the given items would be represented as shown in fig. with circle A representing *Dogs*, circle B representing *Pets* and circle C representing *Cats*.



6. If the three items are partly related to each other, they are represented as shown in the adjoining figure.

Ex. Clerks, Government Employees, Educated Persons

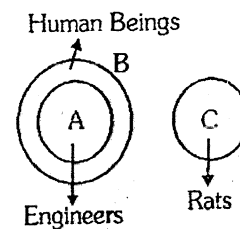
Clearly, some clerks may be government employees and some may be educated. Similarly, some government employees may be clerks and some may be educated. Also, some educated persons may be clerks and some may be government employees. So, the given items may be represented as shown in fig. with three intersecting circles denoting the three classes.



7. If one item belongs to the class of second while third item is entirely different from the two, then they may be represented by the adjoining diagram.

Ex. Engineers, Human Beings, Rats

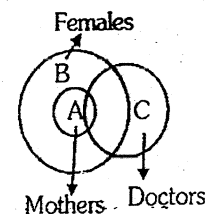
Clearly, all engineers are human beings. This would be represented by two concentric circles. But the class of rats is entirely different from these two. Thus, these items would be represented as shown in fig. with circle A representing Engineers, circle B representing Human beings and circle C representing Rats.



8. If one item belongs to the class of second and the third item is partly related to these two, they are represented as shown alongside.

Ex. Females, Mothers, Doctors

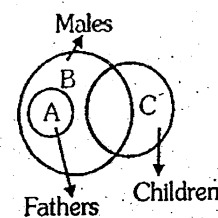
Clearly, all mothers are females. This would be represented by two concentric circles. But, some females and some mothers can be doctors. So, the circle representing doctors would intersect each of the two concentric circles. Thus, the diagram becomes as shown in fig. with circle A representing Mothers, circle B representing Females and circle C representing Doctors.



9. If one item belongs to the class of second and the third item is partly related to the second, they are represented as shown alongside.

Ex. Males, Fathers, Children

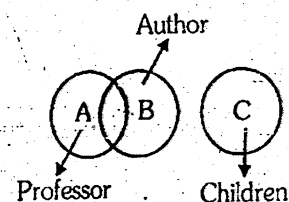
Clearly, all fathers are males. This would be represented by two concentric circles. But, some males are children. But, children cannot be fathers. Thus, the diagram becomes as shown in Fig. with circle A representing Fathers, circle B representing Males and circle C representing Children.



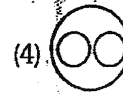
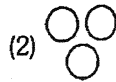
10. If two items are partly related to each other and the third item is entirely different from the two, they are represented as shown alongside.

Ex. Professor, Author, Children

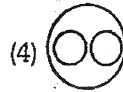
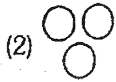
Clearly, some professors can be authors and vice versa. This would be represented by two intersecting circles. But the class of children would be entirely different from these two. Thus, the venn diagram would be as shown in fig. with circle A representing Professors, circle B representing Authors and circle C representing Children.



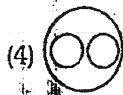
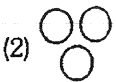
1. Which of the following diagrams indicates the best relation between Adult, Singer and children ?



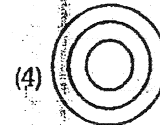
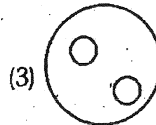
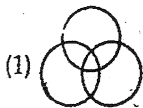
2. Which of the following diagrams indicates the best relation between Engineers, Patients and Doctors ?



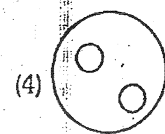
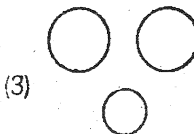
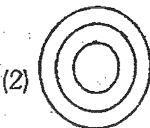
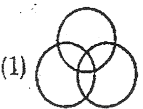
3. Which of the following diagrams indicates the best relation between Mediterranean Sea, Arctic and Atlantic ?



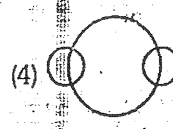
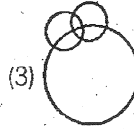
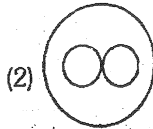
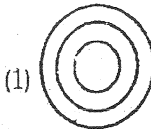
4. Which of the following Venn diagrams given below correctly represents the students who learn law & music, music & dance, law & dance and law, music & dance?



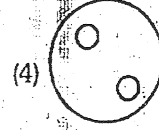
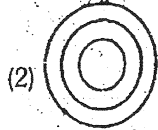
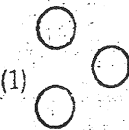
5. Which of the following Venn diagrams given below correctly represents the relationship among Husband, Wife and Family?



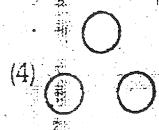
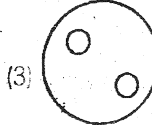
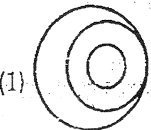
6. Which one of the following Venn diagrams correctly represents the relationship among Vegetable, Carrot, Food?



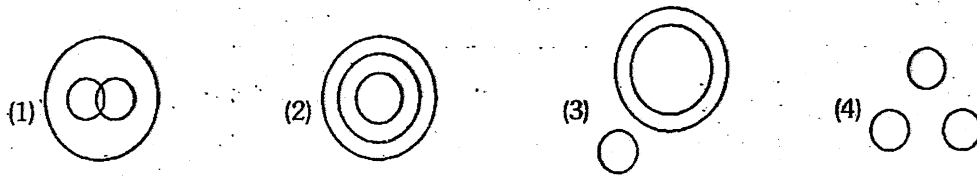
7. Which one of the following Venn diagrams correctly represents the relation among Man, Vegetables and Cow?



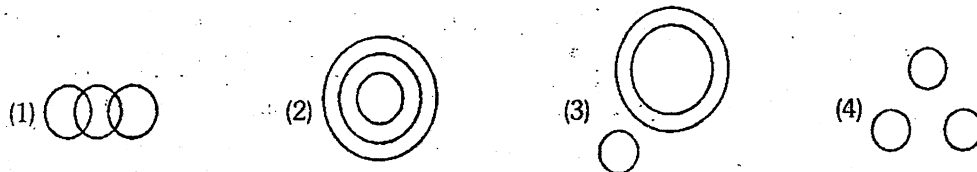
8. Which one of the following Venn diagrams correctly represents the relation among Bus, Car and Brake?



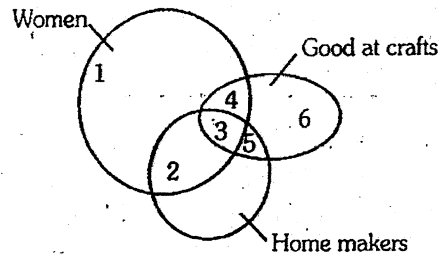
9. Which one of the following Venn diagrams correctly represents the relation among Men, Son and Father?



10. Which one of the following Venn diagrams correctly represents the relation among Men, Women and Doctor?

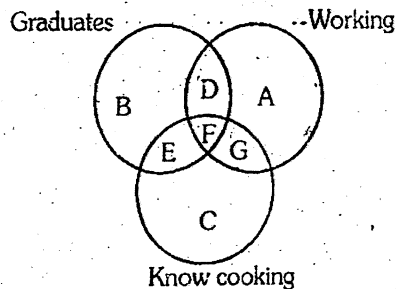


11. Which number in the given Venn diagrams indicates among Women, Home makers who are good at Crafts?



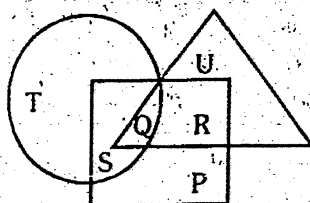
- (1) 1 (2) 2 (3) 3 (4) 4

12. Three circles representing GRADUATES, WORKING and KNOW COOKING are intersecting one another. The intersections are marked A, B, C, D, E, F and G. Which part represents GRADUATES KNOWING COOKING and are not WORKING?



- (1) B (2) F (3) E (4) C

Directions (Q.13 to Q17) : In the following diagram, Triangles represent the Doctors, Square represents the Masons and the circle represents the persons living in Villages.



13. Masons who are doctors and living in villages are represented by
 (1) U (2) R (3) P (4) Q
14. Doctors who are Masons and living in city are represented by
 (1) U (2) R (3) P (4) S

