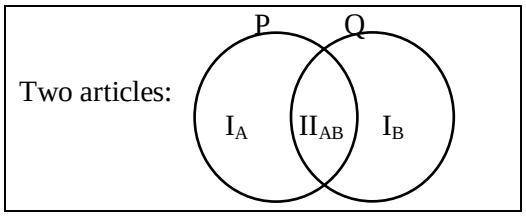
Reasoning and General Intelligence - Venn Diagrams

Venn diagrams are pictorial way of represent the set of article There, are different reverent regions which needs proper understanding for solving problems based on given Venn diagrams.

TYPE-1

Case-1:

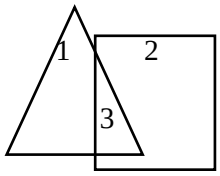


here I_A represents only A

I_B represents only B

II_{AB} represents A and B

For example:



△ - represents student passed in English

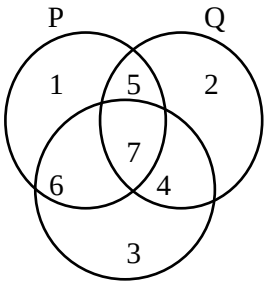
□ - represents student passed in Reasoning.

1 - represents student passed in English only.

2 - represents student passed in Reasoning only

3 - represents student passed in both English Reasoning both.

Case: -II Three articles



R

1 - represents P only

2 - represents Q only

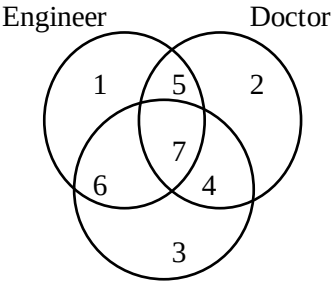
3 - represents R only

4 - represents Q and R (not P)

5 - represents P and Q (not R)

6 - represents P and R (not Q)

7 - represents P, Q and R



Farmer

1 → Engineer

2 → Doctor

3 → Farmer

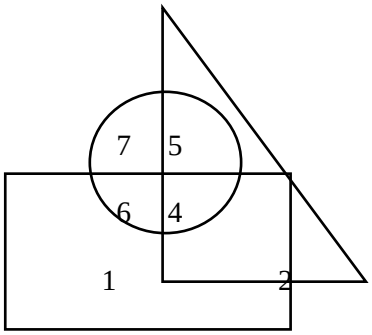
4 → Doctor who is farmer also

5 → Engineer who is doctor also

6 → Engineer who is farmer also

7 → Person who is Engineer, doctor and farmer.

EXAMPLE**1. In the following venn diagram identify the number which denotes Doctor who know both swimming and dancing.**



△ → swimmers

□ → doctors

○ → dancers

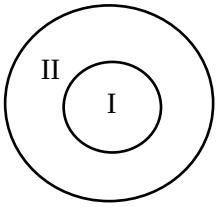
(a) 5 (b) 3

(c) 4 (d) 6

Sol. (c) Area 4 which is common to Δ □ and ○ represents the required condition.

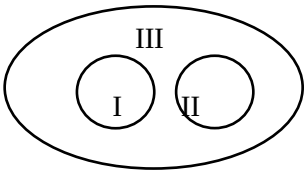
TYPE-II

Note I-When one class of items is completely included in the another class of item and is represented by the given diagram.



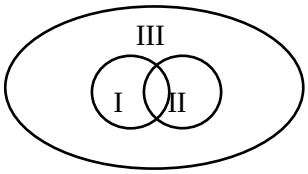
eg: I - Mango
II-Fruit
Here all mango are fruit

Note 2: If two classes of item are completely different from each other but they all are completely included in third class then the relationship is represent of the diagram.



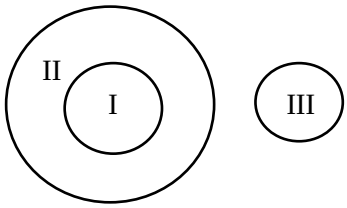
eg: I- represent potato
II - represent onion
III- represent vegetable

Note 3: If two group of items having some common relationship and both of them are all included in third class then the relationship is represented by the diagram.



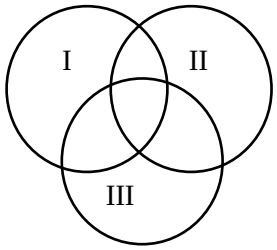
Ex;-Brother, Father, Male.
I → Brother
II → Father
III → Male
Some Brother may be Father and all are male.

Note 4: When one class of item is completely included in another group while third is not related to both of them then such conditions are diagrammatically represented by



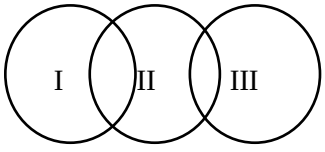
Ex:- Cricketer, player and farmer
I- Cricketer
II- Player
III-Fanner
All cricketers are players but farmers not.

Note 5:- If three group of things are related to each other.

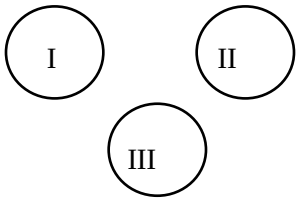


Ex:-Graduate, Engineer and Doctor
Graduate may be Engineer and Doctor.

Note 6: When two group of items are completely unrelated to each other while they are partly related with third group of item and is shown in.

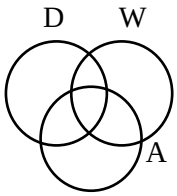


Ex:- Cloth, Red, Flowers.
Some cloth are Red and also some Flowers are red.
Note 7:- When group of items are completely different from each other



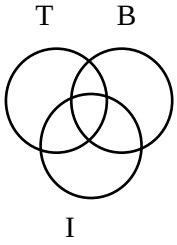
Red, Yellow, Black
These are all different colour.

EXAMPLE**2. Diagrammatic representation of the following:**
(1) Women, Doctors, Anchors
(2) Tall men, Black haired people, Indians
(3) Mars, Solar System, Universe
(4) Girls, Boys, Students
(5) Children, Men, Women
Sol.

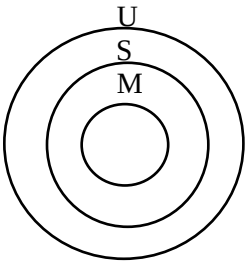


D → Doctor
W → Women
A → Anchors
Some women are doctors and some are anchors. Among these women, some are both doctors and anchors.

2)

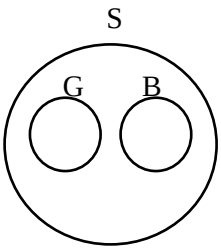


T → Tall men
B → Black haired people
I →Indians
Some Indians are tall men. Some Indians have black hair. Among these Indians, some Indians are tall men with black hair.
(3)

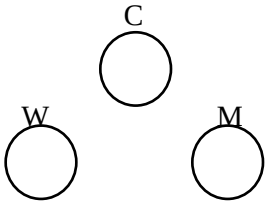


U – Universe
S – Solar System
M – Mars
Universe contains Solar System and Solar System contains Mars.

(4)



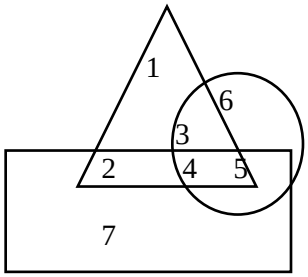
G ---- Girls
B --- Boys
S --- Students
Girls and boys are students.
(5)



C --- Childern
W --- Women
M --- Men
Children, Women and Men are three different groups.

★ Some times venn diagram can be represented by different types of geometrical figures.

EXAMPLE**3. 'Triangle' represents young persons, 'circle' represents uneducated persons and 'rectangle' represents employed persons.**
Give the answers of the following questions:



(1) Which region represents young, uneducated and employed persons?

(2) Which region represents educated, employed and young persons?

(3) Which region represents young, educated and unemployed persons?

(4) Which region represents young, uneducated and unemployed persons?

Sol.

(1) Region – 4, because this region is common to all three.

(2) Region – 2, because this region is common between young persons and employed persons but not with uneducated.

(3) Region – 1, because this region contains only young persons not a part of uneducated region and employed region.

(4) Region – 3, because this region is common between young persons and uneducated persons but not included in employed region.