

ID: 15815

Name: Ahmed

BS(SE) 2nd Semester

Discrete structure

Q.1) What is Venn diagram? Explain in detail the Application of Venn diagram

ANS.)

Venn diagram;

A Venn diagram uses overlapping circles or other shapes to illustrate the logical relationships between two or more sets of items. Often, they serve to graphically organize things, highlighting how the items are similar and different.

Application of Venn diagram;

Although Venn diagrams are primarily a thinking tool, they can also be used for assessment

When to use

Venn diagrams are used to compare and contrast groups of things.

They are a useful tool for formative assessment because they:

- can be used to generate discussion; and
- provide teachers with information about students' thinking.

In science, they are helpful for classification.

As an accepted convention for representing similarities and differences, knowing how to use them contributes to the Key Competency, *Using language, symbols, and texts*.

How the strategy works

A Venn diagram consists of overlapping circles. Each circle contains all the elements of a set. Where the circles overlap shows the elements that the set have in common. Generally there are two or three circles

Q.2) What is Union? Draw Membership table for union using different examples?

ANS. In set theory, the **union** (denoted by \cup) of a collection of sets is the set of all elements in the collection. It is one of the fundamental operations through which sets can be combined and related to each other. **The**

| A | B | AUB |
|----------|----------|------------|
| 1 | 1 | 1 |
| 1 | 0 | 1 |
| 0 | 1 | 1 |
| 0 | 0 | 0 |

Q.3) What is Intersection? Draw Membership table for intersection using different examples.

ANS) Intersection of two given sets is the largest set which contains all the elements that are common to both the sets.

To find the intersection of two given sets A and B is a set which consists of all the elements which are common to both A and B.

| A | B | A intersection B |
|----------|----------|-------------------------|
| 1 | 1 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |

Q4) What is Difference? Draw Membership table for Set difference using different examples.

ANS.) If A and B are two sets, then their difference is given by $A - B$ or $B - A$.

- If $A = \{2, 3, 4\}$ and $B = \{4, 5, 6\}$

$A - B$ means elements of A which are not the elements of B.

i.e., in the above example $A - B = \{2, 3\}$

| A | B | A-B |
|----------|----------|------------|
| 1 | 1 | 0 |
| 1 | 0 | 1 |
| 0 | 1 | 0 |
| 0 | 0 | 0 |