

Name:- Qazi Azmat Ullah

ID #:- 14448

Subject:- Discrete Structure

Program:- BSCSE)



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Q No :- 1

### Venn Diagram :-

A Venn Diagram is an illustration that uses circles to show the relationships among things or finite groups of things.

Venn Diagram help to visually represent the similarities and differences between two concepts.

### Applications of Venn Diagram :-

Venn diagrams are used to depict how items relate to each other against an overall backdrop, universe, dataset or environment -

A Venn diagram could be used, for example to compare two companies within the same industry by illustrating the products both companies offer and the products that are exclusive to each company - Venn diagram use in many fields, including statistics, linguistics, logic, education, computer science and business.



Question

No 2

Union??

The union of two sets A and B is the set of elements, which are in A or in B or in both.

It is denoted by  $A \cup B$  and it is read as 'A union B'.

Example #1

A	B	$A \cup B$
1	1	1
1	0	1
0	1	1
0	0	0

Example #2

C	D	$C \cup D$
1	1	1
1	1	1
1	0	1
1	0	1
0	1	1
0	1	1
0	0	0
0	0	0



Question #3:-

Intersections:

The intersection of two sets A and B denoted by  $A \cap B$ , is the set containing all elements of A that also belong to B (or equivalently, all elements of B that also belong to A)

Example #1:-

A	B	$A \cap B$
1	1	1
1	0	0
0	1	0
0	0	0

Example #2:-

C	D	$C \cap D$
1	1	1
1	1	1
1	0	0
1	0	0
0	1	0
0	1	0
0	0	0
0	0	0



## Question # 4:-

### Difference:-

The difference of set B from set A, denoted by  $A-B$ , is the set of all the elements of set A that are not in set B.

In mathematical term;

$$A-B = \{x : x \in A \text{ and } x \notin B\}$$

#### Example # 1

A	B	$A-B$
1	1	0
1	0	1
0	1	0
0	0	0

#### Example # 2:-

C	D	$C-D$
1	1	0
1	1	0
1	0	1
1	0	1
0	1	0
0	1	0
0	0	0
0	0	0