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Class = Software Engineering  
Section = B

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Assignment

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Page (1)

## Question      No (1)

### Answer

Venn Diagram ⇒

A Venn Diagram is an illustration that uses circles to show the relationships among things or finite groups of things. Circles that overlap have a commonality while circles that do not overlap do not share those traits.

Venn diagrams help to visually represent the similarities & differences between two concepts. They have long been recognized for their usefulness as educational tools. Since the mid-20th century, Venn diagrams have been

Name = Abdullah Abid

ID = 16453

Page(2)

used as part of the introductory logic curriculum & in elementary-level educational plans around the world.

Understanding the Venn Diagram ⇒ The English logician John Venn popularized the diagram in the 1880s.

He called them Eulerian circles after the Swiss mathematician Leonard Euler who created similar diagrams in the 1700s.

Important ⇒ Venn diagrams have been used since

the mid-20th century in classrooms from the elementary school level to introductory logic.

Applications ⇒ Venn diagrams are used to depict how items relate to each other against an overall backdrop,

Name = Abdullah Abid

ID = 16453

Page (3)

Universe, "data" set, 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~~ offer (where circles overlap) & the products that are exclusive to each company (outer circles).

→ Venn diagrams are, at a basic level, simple pictorial representations of relationship that exists b/w two sets of things.

Venn Diagrams.



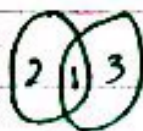
or



## Question No (2)

### Answer

Union  $\Rightarrow$  2 Set operations.  
The Union of two sets is a set containing all elements that are in "A" or in "B" (possibly both).  
For example  $\Rightarrow \{1,2\} \cup \{2,3\} = \{1,2,3\}$ .  
Thus, we can write  $x \in (A \cup B)$  if & only if  $(x \in A) \text{ or } (x \in B)$ .  
Union represented by "U".



A	B	A ∪ B
0	0	0
0	0	0
0	1	1
0	1	1
1	0	1
1	0	1
1	1	1
1	1	1

Name = Abdullah Abid

ID = 16453

page(5)

## Question No(3)

### Answer

**Intersection**  $\Rightarrow$  The intersection of two sets is a new set that contains all of the elements that are in both sets. The intersection is written as  $A \cap B$  or  $A \cdot B$  A and B.

Intersection represented by " $\cap$ "  
The intersection symbol is an upside down "U" like this  $\cap$ .

An intersection only taken common element. For example  $A = \{1, 2, 3, 4\}$ ,  $B = \{3, 4, 5, 6\}$   
 $A \cap B = \{3, 4\}$ .

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

Name = Abdullah Abid

ID = 16453

Page (6)

## Question No (4)

### Answer

Difference  $\Rightarrow$  If  $A$  &  $B$  are

two sets, then their difference is given by  $A-B$  or  $B-A$ ,  $A-B$  means elements of  $A$  which are not the elements of  $B$ .

Examples Let  $A = \{a, b, c, d\}$  &  
 $B = \{b, d, e\}$ . Then  $A-B = \{a, c\}$   
&  $B-A = \{e\}$

In mathematical terms  $\Rightarrow$

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

Membership table For Difference.

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