

Que If  $A = \{1, 2, 3, 4\}$   $B = \{2, 4, 5, 8\}$   
 $C = \{3, 4, 5, 6, 7\}$

then find (1)  $A \cap B$  (3)  $A \cap (B \cup C)$   
(2)  $B \cup C$  (4)  $A \cap B \cap C$

Ans (1)  $A \cap B = \{1, 2, 3, 4\} \cap \{2, 4, 5, 8\}$   
 $= \{2, 4\}$  Ans

(2)  $B \cup C = \{2, 4, 5, 8\} \cup \{3, 4, 5, 6, 7\}$   
 $= \{2, 3, 4, 5, 6, 7, 8\}$  Ans

(3)  $A \cap (B \cup C) = \{1, 2, 3, 4\} \cap \{2, 3, 4, 5, 6, 7, 8\}$   
 $= \{2, 3, 4\}$

(4)  $A \cap B \cap C = \{1, 2, 3, 4\} \cap \{2, 4, 5, 8\} \cap \{3, 4, 5, 6, 7\}$   
 $= \{4\}$  Ans

Que 2. Universal set  $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$

$$A = \{1, 9, 10\}$$

$$B = \{3, 4, 6, 11, 12\}$$

$$C = \{2, 5, 6\}$$

Find = (1)  $A'$  =

(2)  $A \cup (B \cap C)$

(3)  $(A \cup B) \cap (A \cup C)$

Ans (1)  $A' = U - A$   
 $= \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\} - \{1, 9, 10\}$   
 $= \{2, 3, 4, 5, 6, 7, 8, 11, 12\}$  Ans

(2)  $B \cap C = \{3, 4, 6, 11, 12\} \cap \{2, 5, 6\}$   
 $= \{6\}$

$$A \cup (B \cap C) = \{1, 9, 10\} \cup \{6\}$$
$$= \{1, 6, 9, 10\}$$
 Ans

(3)  $A \cup B = \{1, 3, 4, 6, 9, 10, 11, 12\}$

~~$A \cup C$~~   $A \cup C = \{1, 2, 5, 6, 9, 10\}$

$$(A \cup B) \cap (A \cup C) = \{1, 6, 9, 10\}$$
 Ans

Que If  $A = \{11, 12, 13, 14, 15, 16\}$  and  
 $B = \{11, 12, 15, 16, 17, 18, 19\}$

then find  $A \cup B$ ,  $A \cap B$ ,  $A - B$ ,  $B - A$  ?

Ans  $A \cup B = \{11, 12, 13, 14, 15, 16, 17, 18, 19\}$   
Ans

$$A \cap B = \{11, 12, 13, 14, 15, 16\} \cap \{11, 12, 15, 16, 17, 18, 19\}$$
$$= \{11, 12, 15, 16\} \text{ Ans}$$

$$A - B = \{11, 12, 13, 14, 15, 16\} - \{11, 12, 15, 16, 17, 18, 19\}$$
$$= \{13, 14\} \text{ Ans}$$

$$B - A = \{11, 12, 15, 16, 17, 18, 19\} - \{11, 12, 13, 14, 15, 16\}$$
$$= \{17, 18, 19\} \text{ Ans}$$