

Q9) Given universal set =  $\{x : x \in \mathbb{N}, 10 \leq x \leq 35\}$

$$A = \{x \in \mathbb{N} : x \leq 16\} \text{ and}$$

$$B = \{x : x > 29\} \text{ Find:}$$

(i) A (ii) B

Ans  $\rightarrow$  universal set =  $\{x : x \in \mathbb{N}, 10 \leq x \leq 35\}$

$$= \{10, 11, 12, 13, 14, 15, \dots, 34, 35\}$$

$$A = \{x \in \mathbb{N}, x \leq 16\}$$

$$= \{10, 11, 12, 13, 14, 15, 16\}$$

$$B = \{x : x > 29\}$$

$$= \{30, 31, 32, 33, 34, 35\}$$

$$(i) A = \{17, 18, 19, 20, 21, 22, \dots, 33, 34, 35\}$$

$$= \{x : x \in \mathbb{N}; 17 \leq x \leq 35\}$$

$$(ii) B = \{10, 11, 12, 13, 14, 15, \dots, 29\}$$

$$= \{x : x \leq 29\}$$

Q10) Given universal set =  $\{x \in \mathbb{Z} : -6 \leq x \leq 6\}$ ,  $\mathbb{N} = \{n : n \text{ is a non-negative number}\}$

and

$$P = \{x : x \text{ is a non-positive number}\}$$

Find: (i)  $\mathbb{N} \cap P$

$$\text{Ans} \rightarrow \text{universal set} = \{x \in \mathbb{Z}; -6 < x < 6\}$$

$$= \{-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6\}$$

$$N = \{n: n \text{ is a non-negative number}\}$$

$$= \{0, 1, 2, 3, 4, 5, 6\}$$

$$P = \{x: x \text{ is a non-positive number}\}$$

$$= \{-5, -4, -3, -2, -1, 0\}$$

$$(i) N' = \{-5, -4, -3, -2, -1\}$$

$$(ii) P = \{0, 1, 2, 3, 4, 5, 6\}$$

Q11) let  $M = \{\text{letter of the word REAL}\}$

and  $N = \{\text{letter of the word LA RE}\}$ . write set  $M$  and  $N$  in roster form and then state whether

(i)  $M \subset N$  is true (ii)  $N \subset M$  is true

(iii)  $M = N$  is true

Ans  $\rightarrow M = \{\text{letter of the word REAL}\}$

$$= \{R, E, A, L\}$$

and  $N = \{\text{letter of the word LA RE}\}$

$$= \{L, A, R, E\}$$

(i)  $M \subset N$  is true: yes

(ii)  $N \subset M$  is true: yes

(iii)  $M = N$  is true: yes