

1) i)  $\{3, 5, 7, 2\}$  Ans - Infinite

ii)  $\{1, 2, 3, 4\}$  Ans - Finite

iii)  $\{-3, -2, -1, 0, 1, 2\}$  Ans - Infinite

iv)  $\{20, 30, 40, 50, 200\}$  Ans - Finite

v)  $\{7, 14, 21, 240\}$  Ans - Finite

2) i) Yes, it is empty

ii) No, it's not empty.

iii) Yes, it is empty

iv) Yes, it is empty

v) No, it's not empty

3) i) Equal

ii) Equivalent

iii) Equal

iv) Equivalent

v) Equal

4) Set of integer = Infinite

i) {Multiple of 5} = Infinite

ii) {fractions between 1 and 2} = Infinite

iii) {Number of people in India} = Definite

iv) Set of trees in the world = Infinite

5) Prime numbers divisible by 2 = No

i) {Negative natural numbers} = empty

ii) women with height 5 metre = empty

iii) Integer less than 5 = Not

iv) Prime numbers between 7 and 23 = Not

vi) Natural numbers less than 5 and letters of word 'BOAT'.

Ans: {1, 2, 3, 4}  $\rightarrow$  4 elements

ii)  $\{ \text{Natural numbers less than five} \}$  and  $\{ \text{letters of the word 'Boat'} \}$

Ans =  $\{1, 2, 3, 4\} \rightarrow 4 \text{ elements}$   $\{b, o, a, t\} \rightarrow 4 \text{ elements}$

ii)  $\{2, 4, 6, 8, 10\}$  and  $\{ \text{even numbers less than } 12 \}$

Ans =  $\{1, 3\}$

iii)  $\{1, 3, 5, 7\}$  and set of odd natural numbers

Ans - iv) letter  $\{1, 3, 5, 7\} \rightarrow 4 \text{ elements}$

iv)  $\{ \text{letters of the word MEMBER} \}$  and  $\{ \text{letters of the word 'REMEMBER'} \}$

Ans -  $\{ \text{letters of word MEMBER} \}$  and  $\{ \text{letters of word 'REMEMBER'} \}$  Here, the letters of both the sets are same.

v)  $\{ \text{Negative natural numbers} \}$  and  $\{ \text{letters of the word 'REMEMBER'} \}$

we know, there is no negative natural numbers and there is no month which has 50 days. Thus both sets are empty.

7) i) finite

ii) Infinite

iii) finite

iv) finite

v) Infinite

vi) finite

8) i) False

ii) False

iii) True

iv) True (Each set is the empty set)

v) True

vii) False (6 is an even natural number which is divisible by 3)

vii) True (no positive number can be less than 0)

viii) False

9) i) Disjoint sets; as no girl can be of age below 15 years and also above 15 years

ii) Overlapping sets; as boys above 27 years are also above 20 years.

iii) Overlapping sets; as natural numbers from 50 to 59 are common to both the sets

iv) Overlapping sets; as many students of IX studying in I.C.S.E board are common.

v) Overlapping sets; as natural number 24 is common to both the sets.

vi) Disjoint sets; as no letter is common to both the sets.