H.W
13.7.21

Date
Page 34

## EXERCISE - 10(D)

(1) State whether the given set is infinite or finite:

i) $\{3, 5, 7, \ldots\}$ Infinite Set

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

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

iv) $\{20, 30, 40, 50, \ldots, 200\}$ Finite Set

(2) which of the following sets is empty?

i) Set of counting no.s between 5 and 6.

There no counting no.s between 5 and 6, as they are adjacent no.s.
So, this an empty set.

ii) Set of odd no.s between 7 and 19.

There are odd no.s between 7 and 19.
Hence, this set consists the elements 9, 11, 13, 15, and 17.
So, this is not an empty set.

iii) Set of odd no.s between 7 and 9.

There are no odd no.s between 7 and 9, as 7 and 9 are adjacent odd no.s.
So, this is an empty set.

iv) Set of even no.s that are not divisible by 2.

Here, the elements of the set are the even no.s that are not divisible by 2.
But, such no. doesn't exist.
So, this is an empty set.

v) {0}

Here, 0 is the element in the given set.
So, this is not an empty set.

(3) State which pair of sets given below are equal, and which are equivalent:

i) {3, 5, 7} and {5, 3, 7}

Here, all the elements (i.e. 3, 5 and 7) are common.
No. of elements in both sets = 3

∴ These set are equal and equivalent.

ii) {8, 6, 10, 12} and {3, 2 4, 6}

No. of elements in both sets = 4

∴ These set are only equivalent.

iii) {7, 7, 2, 1, 2} and {1, 2, 7}

$\{7, 7, 2, 1, 2\}$

$= \{7, 2, 1\}$

No. of elements in both sets - 3

Here, all the elements (i.e. 7, 2, 1) are in common.

∴ These sets are equal and equivalent.

iv) $\{2, 4, 6, 8, 10\}$ and $\{a, b, d, e, m\}$

No. of elements in both sets - 5

∴ These sets are equivalent.

(4) State which of the following are finite sets and which are infinite:

i) Set of integers. Infinite Sets

ii) {Multiples of 5}. Infinite Sets

iii) {Fractions between 1 and 2}. Infinite Sets

iv) {No. of people of India}. Finite Sets

v) Set of trees in the world. Infinite Sets

vi) Set of leaves on a tree. Finite Sets

vii) Set of children in all the schools of Delhi.
Finite Sets

viii) $\{\ldots, -4, -2, 0, 2, 4, 6, 8\}$. Infinite Sets

ix) $\{-12, -9, -6, -3, 0, 3, 6, \ldots\}$ Infinite Sets

x) {No. of points in a line segment 4 cm long}.
Infinite Sets.

(5) State whether or not the following sets are empty:

i) {Prime no.s divisible by 2} not empty

ii) {Negative natural no.s} empty

iii) {women with height 5 metre} empty

iv) {Integers less than 5} not empty

v) {Prime no.s between 14 and 23} not empty

vi) Set of even no.s not divisible by 2. empty

vii) Set of multiples of 3 that are more than 9 and less than 15. not empty

(6) State if the given sets are equal sets or equivalent sets:

i) {Natural no.s less than five} and {letters of the word 'BOAT'}. Equivalent sets

ii) $\{2, 4, 6, 8, 10\}$ and {even natural no.s less than 12}.
Equal sets