Ex-10(D)

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

2) i) Set of counting numbers between 5 and 6. [✓]
ans) Empty

ii) Set of odd numbers between 5 7 and 10. [✗]
ans) This set is not empty.

iii) Set of odd numbers between 7 and 9. [✓]
ans) Empty.

iv) Set of even numbers that are not divisible by 2. [✓]
ans) Empty.

v) {0}
ans) This set in not empty.

3) i) {3, 5, 7} and {5, 3, 7}
ans) Both equal and equivalent

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

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

iv) {3, 4, 6, 8, 1} and {a, b, d, e, m}
ans) Equivalent

4) i) Set of integers.
ans) As, integers are infinite, this set is infinite.

ii) {Multiples of 5}
ans) As, the multiples of a no. are infinite, this set is infinite.

iii) {Fractions between 1 and 2}
ans) As, there are infinite number of fractions between 1 and 2, this set is infinite.

iv) {Number of people in India}
ans) As, a finite number of people live in India, this set is a finite set.

v) Set of trees in the world.
ans) As, there are infinite no. of trees in the world, this set is infinite set.

vi) Set of leaves on a tree.
ans) As, there are infinite no. of leaves in a tree, So, this set is infinite set

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

ans) As, there are a finite no. of children studying in the schools of Delhi, this set is a finite set.

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

ans) Infinite

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

ans) Infinite

x) {Number of points in a line segment 4 cm long}.

ans) Infinite

1) i) $A = \{0, 1, 2, 4\}$
ans) No. of elements of this set = 4
∴ 4 is the cardinal number of this set.

ii) $B = \{-3, -1, 1, 3, 5, 7\}$
ans) No. of elements of this set = 6
∴ 6 is the cardinal number of this set.

iii) $C = \{\}$
ans) No. of elements of this set = 0.
∴ 0 is the cardinal number of this set.

iv) $D = \{3, 2, 2, 1, 3, 1, 2\}$
ans) No. of elements of this set = 3.
∴ 3 is the cardinal number of this set.

v) $E = \{$Natural numbers between 15 and 20$\}$
ans) No. of elements of this set = 4
∴ 4 is the cardinal number of this set.

vi) $F = \{$Whole numbers from 8 to 14$\}$.
ans) No. of elements of this set = 7
∴ 7 is the cardinal number of this set.

2) i) $n(A)$
ans) Set $A = \{$Natural numbers less than 10$\}$
$= \{1, 3, 3, 4, 5, 6, 7, 8, 9\}$
Cardinal no. = 9
∴ $n(A) = 9$

ii) n(B)

ans) Set B = {Letters of the word 'PUPPET'}
= {p, u, e, t}
Cardinal no. = 4
∴ n(B) = 4

iii) n(C)

ans) Set C = {Squares of first four whole numbers}
= {0, 1, 4, 9}
Cardinal no. = 4
∴ n(C) = 4

iv) n(D)

ans) Set D = {Odd numbers divisible by 2}.
= { }
Cardinal no. = 0
∴ n(D) = 0

3) i) If A = {0}, then n(A) = 0.

ans) False
n(A) = 1

ii) n(∅) = 1

ans) False
n(∅) = 0

iii) If T = {a, a, h, b, d, h}; then n(T) = 5

ans) True
Because an element cannot be repeated.

iv) If B = {1, 5, 51, 15, 5, 1}, then n(B) = 6.

ans) False
Because an element cannot be repeated.