19-7-21

EX- 10(D)

1. State whether the given set is infinite or finite:

(i) $\{3, 5, 7, \ldots\}$ — Infinite
(ii) $\{1, 2, 3, 4\}$ — finite
(iii) $\{\ldots -3, -2, -1, 0, 1, 2\}$ — Infinite
(iv) $\{20, 30, 40, 50, \ldots 200\}$ — finite

2. Which of the following sets is empty?

i) Set of Counting numbers between 5 an 6. empty
ii) Set of odd numbers between 7 and 19. Not empty.
iii) Set of odd numbers between 7 and 9. Empty
iv) Set of even numbers that are not divisible by 2. empty
v) $\{0\}$ not empty.

3. State which pair of sets given below are equal sets and which are equivalent :

i) $\{3, 5, 7\}$ and $\{5, 3, 7\}$ — Equal
ii) $\{8, 6, 10, 12\}$ and $\{3, 2, 4, 6\}$ — Equivalent
iii) $\{7, 7, 2, 1, 2\}$ and $\{1, 2, 7\}$ — Equal
iv) $\{2, 4, 6, 8, 10\}$ and $\{a, b, d, e, m\}$ — Equivalent.

4. State which of the following are finite sets and which are infinete :—

(i) Sets of integers — Infinite
ii) {Multiples of 5} — Infinite
iii) {Fractions between 1 and 2} — Infinite.

iv) {Number of people in India} — Finite.

v) Set of trees in the world — Infinite

vi) Set of leaves on a tree — finite

vii) Set of children in all the schools of Delhi — finite

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

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

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

5. State whether or not the following sets are empty

i) {Prime numbers divisible by 2} — Not empty.

ii) {Negative natural numbers} — Empty.

iii) {Women with height 5 metre} — Empty.

iv) {Integers less than 5} — Not Empty.

v) {Prime numbers between 17 and 23} — Not empty.

vi) Set of even numbers not divisible by 2 — Empty.

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

Exercise- 10 (E)

1. Write the Cardinal number of each of the following sets :-

i) $A = \{0, 1, 2, 4\}$ — 4

ii) $B = \{-3, -1, 1, 3, 5, 7\}$ — 6

iii) $C = \{\}$ — 0

iv) $D = \{3, 2, 2, 1, 3, 1, 2\}$ — 3

v) $E = \{$Natural numbers between 15 and 20$\}$ — 4

vi) $F = \{$whole numbers from 8 to 14$\}$ — 7

2. Given : $A = \{$Natural numbers less than 10$\}$
$B = \{$Letters of the word 'PUPPET'$\}$
$C = \{$Squares of the first four whole numbers$\}$
$D = \{$Odd numbers divisible by 2$\}$

Find :—

i) $n(A)$ · $A = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

ii) $n(B)$. $B = \{P, U, E, T\}$

iii) $n(C)$. $C = \{0, 1, 4, 9\}$

iv) $n(D)$. $D = \{\}$ or $\emptyset$

3. State True / False for each of the following. Correct the wrong statement :—

i) If $A = \{0\}$, then $n(A) = 0$ False
Correct statement — $n(A) = 1$

ii) $n(\emptyset) = 1$ False
Correct statement — $n(\emptyset) = 0$.

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

iv) If $B = \{1, 5, 51, 15, 5, 1\}$; then $n(B) = 6$
False
Correct statement — $n(B) = 4$.