Exercise 10(D)

(1)

(i) Infinite set
(ii) Finite set
(iii) Infinite set
(iv) Finite set.

(2)

(i) Empty.
(ii) Not empty.
(iii) Empty.
(iv) Empty.
(v) Not empty.

(3)

(i) Equal sets
(ii) Equivalent sets
(iii) Equal sets
(iv) Equivalent sets.

4

(i) Infinite sets
(ii) Infinite sets
(iii) Infinite sets
(iv) Finite sets
(v) Infinite sets
(vi) Finite sets
(vii) Finite sets
(viii) Infinite sets
(ix) Infinite sets
(x) Infinite sets

5

(i) Not empty
(ii) Empty
(iii) Empty
(iv) Not empty
(v) Not empty
(vi) Empty
(vii) Not empty

6 Equivalent sets

(i) Equal sets
(ii) Equal sets
(iii) Equal sets
(iv) Equal sets
(v) Equal sets
(vi) Equivalent sets

7

(i) Finite
(ii) Infinite

(iii) Finite

(iv) Finite

(v) Infinite

(vi) Finite

(8) ~~False~~

(i) False

(ii) False

(iii) True

(iv) True (each set is the empty set)

(v) True

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

(vii) True (no positive number will be less than the number 0)

(viii) False

(9)

(i) Disjoint sets.
no girls can be of age above 15 years or below 15 years.

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

(iii) Overlapping sets
natural numbers from 50 to 59 are common to both the sets.

(iv) Overlapping sets
students of class IX studying in I.C.S.E. board are common.

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

(vi) Disjoint sets
no letter is common to both sets.

Exercise - 10(E)

(1)

(i) $A = \{0, 1, 2, 4\}$ i.e. $n(A) = 4$

(ii) $B = \{3, -1, 1, 3, 5, 7\}$ i.e. $n(B) = 6$

(iii) ~~$t = 50$~~ $C = \{\}$ i.e. $n(C) = 0$

(iv) $D = \{3, 2, 2, 1, 3, 1, 2\} \Rightarrow D = \{3, 2, 1\}$ i.e. $n(D) = 3$

(v) $E = \{16, 17, 18, 19\}$ i.e. $n(E) = 4$

(vi) $F = \{8, 9, 10, 11, 12, 13, 14\}$ i.e. $n(F) = 7$

(2)

Here,

$A = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$B = \{P, V, E, T\}$

$C = \{0, 1, 4, 9\}$

$D = \{\}$

(i) $n(A) = 9$

(ii) $n(B) = 4$

(iii) $n(C) = 4$

(iv) $n(D) = 0$

③

(i) False

$n(A) = 1$

(ii) False

$n(\varphi) = 0$

(iii) True

(iv) False

$B = \{1, 5, 51, 15\} \Rightarrow n(B) = 4$