Instructions for students: The notes provided must be copied to the Maths copy and then do the homework in the same copy.

Chapter 5

SETS

Types of Set:

Finite set: A set that contains limited number of elements.

    e.g. A ={2,4,6,8}

Infinite set: A set that contains unlimited number of elements.

    e.g. B =(All natural numbers}

Singleton set: a set that contains only one element.

    e.g. C={6}

Empty set: a set that contains no element.

    Denoted by { } or ϕ

Universal set : a set that contains all the elements under consideration.

Cardinal Number of a set: The number of elements in a set is known as the cardinal number of that set.

  e.g. : A= {2, 3, 5, 7, 11}   n(A) = 5

Cardinal number of set 'A' is denoted by n(A).

Equal sets: Two sets are said to be equal if they have same elements.

Equivalent sets: Two sets are said to be equivalent if their cardinal numbers are same.(Or if they have same number of elements)

Subsets: If A and B are two sets, A is called the subset of B if every element of A is also a member of B.

e.g A = {4, 5)   B ={1, 2, 3, 4, 5}

    Here, **A $\subset$ B** (Read as '**A is a subset of B'**)

     Or   **B $\supset$ A** (Read as '**B is a super set of A'**)

Exercise 5.2

3. Find the pairs of equal sets from the following sets:

   i) A ={0,1, 2, 3} , B ={x : x^2<10, x ∈ W} and E = {x|x ∈ W, x<4}

   ii) C ={Letters of the word FOLLOW} , F ={Letters of the word FLOW}

      and H = {Letters of the word 'WOLF'}

   iii) D= {days of week} and G ={Monday, Tuesday, ...Sunday}

5. Find whether A ⊂ B or B ⊂ A or none of these:

   i) A = {1, 2, 3}   B = {2, 3, 3, 3, 1, 3}

                           B ={1, 2, 3} - A⊂ B and B ⊂ A

   ii) A = {2, 4, 6, ...} B= { All natural numbers}   - A⊂ B

   iii) A ={x| x ∈ I , x^2<20}   B = {0, 1, 2, 3, 4}

      A = {-4, -3, -2, -1, 0, 1, 2, 3, 4}

            B ⊂ A

   Iv) A = {Letters of KING} B ={Letters of QUEEN}

       A ={K, I, N, G}   B ={Q, U, E, N}

            None of these.

Home Work: Complete Exercise 5.2 in the Maths Copy.