INTRODUCTION TO SETS.

SETS:

Sets are a collection of well-defined objects or elements.

A set is represented by a capital letter symbol and the number of elements in the finite set is represented as the cardinal number of a set in a curly bracket {…}.

For example, set A is a collection of all the natural numbers, such as A = {1,2,3,4,5,6,7,8,…..∞}.

Sets can be represented in three forms:

1. Roster Form or Tabular form or listing method: Example- Set of even numbers less than 8={2,4,6}
2. Set Builder Form or Rule method: Example: A = {x|x is a natural number, 10< x < 20}

Cardinal number : The cardinal number of a set V is the number of distinct elements in it, and it is denoted as n(V).Ex : If S={ a, e, I, o, u}   n(S) = 5

TYPES OF SETS

A set has many types, such as;

1. **Empty Set or Null set:** It has no element present in it.

   Example: A = {} is a null set.

2. **Finite Set:** It has a limited number of elements.

   Example: A = {1,2,3,4}

3. **Infinite Set:** It has an infinite number of elements.

   Example: A = {x: x is the set of all whole numbers}

4. **Equal Set:** Two sets which have the same members.

    Example: A = {1,2,5} and B={2,5,1}: Set A = Set B

5. **Singleton set:** A set which contains only one element is known as a singleton set.

    Example: A={ 1 } , P = { 5 }

6. **Universal Set:** A set which consists of all elements of other sets present in a Venn diagram.

    Example: A={1,2}, B={2,3}, The universal set here will be, U = {1, 2,3}

7. **Equivalent sets:** If the number of elements in set A is equal to number of elements in set B, set A and set B are said to be Equivalent to each other .
    SET A<-> SET B IF n(A)=n(B)
8. Joint, overlapping, or intersecting sets:When two sets have one or more than one elements in common, the sets are known as overlapping sets.
    Set X ={a|a=2p, p€ N}
       ={ 2, 4, 6, 8, 10 12,.....}
    Set Y={d|d= 3q, q€N}
       ={3, 6, 9, 12, 15,......}
    Set X and set Y are overlapping sets.
9. Disjoint sets: When two elements have no elements in common, the sets are known as disjoint sets.
    Worksheet
       1. **Solve excercise 7.1 question 2 ,3 and 4.**
       2. **Solve excercise 7.2 question 1 to question 8.**