

## Class 7-Mathematics

**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

**Set:** A well-defined collection of objects is called a set.

e.g. Collection of all months in a year.

Collection of all even numbers less than 50.

Collection of all Prime factors of 75.

**Symbols:**  $\in$  - belongs to (Used to mention that a particular element is a member of the set)

$\notin$  - does not belong to ( Used to mention that a particular element is not a member of the set)

#### Representation of a set

A set can be represented by the following ways.

##### 1. Description Method

e.g.  $A = \{\text{Natural numbers between 5 and 10}\}$

##### 2. Roaster Method(Tabular form)

e.g.  $A = \{6, 7, 8, 9\}$

##### 3. Set builder form(Rule method)

e.g.  $A = \{x \mid x \in \mathbf{N} \text{ and } 5 < x < 10\}$

#### Exercise 5.1

3. Describe the following sets.

i)  $\{a, b, c, d, e, f\}$

Description Form:  $\{\text{First six English alphabets}\}$

ii)  $\{2, 3, 5, 7, 11, 13, 17, 19\}$

Description Form:  $\{\text{Prime numbers less than 20}\}$

iii)  $\{\text{Friday, Saturday, Sunday}\}$

Description Form:  $\{\text{Last three days of week}\}$

iv) {April, August, October}

Description Form: {Names of months whose first letter is a vowel}

6. Write the following sets in Roaster form:

i)  $\{x | x \in \mathbf{N}, 5 \leq x < 10\}$

Roaster form:  $\{5, 6, 7, 8, 9\}$

ii)  $\{x | x = 6p, p \in \mathbf{I} \text{ and } -2 \leq p \leq 2\}$

$p = -2, -1, 0, 1, 2$

When  $p = -2, x = 6 \times -2 = -12$

When  $p = -1, x = 6 \times -1 = -6$

When  $p = 0, x = 6 \times 0 = 0$

When  $p = 1, x = 6 \times 1 = 6$

When  $p = 2, x = 6 \times 2 = 12$

Roaster form:  $\{-12, -6, 0, 6, 12\}$

**Home Work: Complete Exercise 5.1 in the Maths Copy.**