

**EXERCISE 10(C)**

**1. Write each of the following sets in the Roster Form:**

- (i) The set of five numbers each of which is divisible by 3
- (ii) The set of integers between -4 and 4
- (iii)  $\{x: x \text{ is a letter in the word 'SCHOOL'}\}$
- (iv)  $\{x: x \text{ is an odd natural number between 10 and 20}\}$
- (v)  $\{\text{Vowels used in the word 'AMERICA'}\}$

**Solution:**

- (i) The set of first five numbers each of which is divisible by 3 in the Roster form is  $\{3, 6, 9, 12, 15\}$
- (ii) The set of integers between -4 and 4 in Roster Form is  $\{-3, -2, -1, 0, 1, 2, 3\}$
- (iii) The Roster form for a set  $\{x: x \text{ is a letter in the word 'SCHOOL'}\}$  is  $\{S, C, H, O, L\}$
- (iv)  $\{11, 13, 15, 17, 19\}$  is the Roster form for a set  $\{x: x \text{ is an odd natural numbers between 10 and 20}\}$
- (v)  $\{A, E, I\}$  is the Roster form for a set  $\{\text{Vowels used in the word 'AMERICA'}\}$

**2. Write each given set in the Roster Form:**

- (i) All prime numbers between one and twenty
- (ii) The squares of first four natural numbers
- (iii) Even numbers between 1 and 9
- (iv) First eight letters of the English alphabet
- (v) The letters of the word 'BASKET'

**Solution:**

- (i)  $\{2, 3, 5, 7, 11, 13, 17, 19\}$  is the Roster form for all prime numbers between one and twenty
- (ii)  $\{1, 4, 9, 16\}$  is the Roster form for the squares of first four natural numbers
- (iii)  $\{2, 4, 6, 8\}$  is the Roster form for even numbers between 1 and 9
- (iv)  $\{A, B, C, D, E, F, G, H\}$  is the Roster form for first eight letters of the English alphabet
- (v)  $\{B, A, S, K, E, T\}$  is the Roster form for the letters of the word 'BASKET'

**3. Write each given set in the Set-Builder Form:**

- (i)  $\{2, 4, 6, 8, 10\}$
- (ii)  $\{2, 3, 5, 7, 11\}$
- (iii)  $\{\text{January, June, July}\}$
- (iv)  $\{a, e, i, o, u\}$
- (v)  $\{\text{Tuesday, Thursday}\}$

**Solution:**

- (i)  $\{x: x \text{ is an even natural number less than } 12\}$  is the Set- Builder form for  $\{2, 4, 6, 8, 10\}$
- (ii)  $\{x: x \text{ is a prime number less than } 12\}$  is the Set-Builder form for  $\{2, 3, 5, 7, 11\}$
- (iii)  $\{x: x \text{ is a month of the year whose names starts with letter J}\}$  is the Set-Builder form for  $\{\text{January, July, June}\}$
- (iv)  $\{x: x \text{ is a vowel in English alphabets}\}$  is the Set-Builder form for  $\{a, e, i, o, u\}$
- (v)  $\{x: x \text{ is a day of the week whose names starts with letter T}\}$  is the Set-Builder form for  $\{\text{Tuesday, Thursday}\}$

**4. Write each of the following sets in Roster (tabular) Form and also in Set-Builder Form**

- (i) Set of all natural numbers that can divide 24 completely
- (ii) Set of odd numbers between 20 and 35
- (iii) Set of letters used in the word 'CALCUTTA'
- (iv) Set of names of the first five months of a year
- (v) Set of all two digit numbers that are perfect square as well

**Solution:**

- (i) The Roster Form is  $\{1, 2, 3, 4, 6, 8, 12, 24\}$   
The Set-Builder Form is  $\{x: x \text{ is a natural number which divides } 24 \text{ completely}\}$
- (ii) The Roster Form is  $\{21, 23, 25, 27, 29, 31, 33\}$   
The Set-Builder Form is  $\{x: x \text{ is an odd number between } 20 \text{ and } 35\}$
- (iii) The Roster Form is  $\{C, A, L, U, T\}$   
The Set-Builder Form is  $\{x: x \text{ is a letter used in the word 'CALCUTTA'}\}$
- (iv) The Roster Form is  $\{\text{January, February, March, April, May}\}$   
The Set-Builder Form is  $\{x: x \text{ is a name of the first five months of a year}\}$
- (v) The Roster Form is  $\{16, 25, 36, 49, 64, 81\}$   
The Set-Builder Form is  $\{x: x \text{ is a perfect square of two digit numbers}\}$

**5. Write, in Roster Form, the set of:**

- (i) the first four odd natural numbers each divisible by 5
- (ii) the counting numbers between 15 and 35, each of which is divisible by 6
- (iii) the names of the last three days of a week
- (iv) the names of the last four months of a year

**Solution:**

- (i)  $\{5, 15, 25, 35\}$  is a Roster Form for the first four odd natural numbers each divisible by 5
- (ii)  $\{18, 24, 30\}$  is a Roster Form for the counting numbers between 15 and 35, each of which is divisible by 6

(iii) {Friday, Saturday, Sunday} is a Roster Form for names of the last three days of a week

(iv) {September, October, November, December} is a Roster Form for the last four months of a year

