Exercise 10(B)

2. If set B = {4, 6, 8, 10, 12, 14}, state which of the following statements are correct and which are wrong :

i) 5 ∈ B

Sol- B = {4, 6, 8, 10, 12, 14}

∴ The following statement is wrong.

ii) 12 ∈ B

Sol- B = {4, 6, 8, 10, 12, 14}

Here element 12 belongs to set B.

Hence, The following statement is correct.

iii) 14 ∈ B

Sol- B = {4, 6, 8, 10, 12, 14}

Here element 14 belongs to set B

Hence, the following statement is Correct.

iv) 9 ∈ B

Sol- B = {4, 6, 8, 10, 12, 14}

Here element 9 doesn't belongs to Set B.

Hence, the following statement is wrong.

v) B is a set of even numbers between 2 and 16.

Sol- B = {4, 6, 8, 10, 12, 14}

Here B is a set of even numbers between 2 and 16.

Hence, the following statement is ~~wrong~~ correct.

vi) 4, 6, and 10 are the members of the set B.

Sol- B = {4, 6, 8, 10, 12, 14}

Here This element 4, 6 and 10 belongs to the set B.

Hence, the following statement is correct.

3. State whether true or false:

i) Sets {4, 9, 6, 2} and {6, 2, 4, 9} are not the same. False

ii) Sets {0, 1, 3, 9, 4} and {4, 0, 1, 3, 9} are the same. True

iii) Sets {5, 4} and {5, 4, 4, 5} are not the same. False

iv) Sets {8, 3} and {3, 3, 8} are the same. True

v) Collection of vowels used in the word 'ALLAHABAB' forms a set. True.

vi) If P is the set of letters in the word 'ROOP'; then P = {P, o, r}. True

vii) If M is the set of letter used in the 'MUMBAI'; then: M = {m, u, b, a, i}. True

Exercise 10 (c)

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.

Sol- In Roster Form: {1, 2, 3, 4, 6, 8, 12, 24}

In Set - Builder Form: {x : x is a natural number which divides 24 completely}

ii) Set of odd numbers between 20 and 35.

Sol- In Roster Form: {21, 23, 25, 27, 29, 31, 33}

In Set-Builder Form: {x : x is an odd natural number between 20 and 35}

iii) Set of letters used in the word 'CALCUTTA'.

Sol- In Roster Form: {c, a, l, u, t}

In Set Builder Form: {x : x is a letter used in the word 'CALCUTTA'}

iv) Set of names of the first five months of a year.

Sol- In Roster Form: {January, February, March, April, May}

In Set Builder Form: {x : x is a name of the first five months of the year}

v) Set of all two-digit numbers that are perfect squares and all

Sol- In Roster form = {16, 25, 36, 49, 64, 81}

In Set - Builder Form = {x : x is a perfect square two digit number}

5. Write in Roster form the set of :

i) The first four odd natural numbers each divisible by 5.

Sol- The required set = {5, 15, 25, 35}

ii) The counting numbers between 15 and 35; each of which is divisible by 6.

Sol- The required set = {18, 24, 30}

iii) The names of the last three days of a week.

Sol- The required set = {Friday, Saturday, Sunday}

iv) The names of the last four months of a year.

Sol- The required set = {September, October, November, December}