Exercise-10(B)

1. If set A = {2,3,4,5,6}, state which of the following statement are true and which are false :

(i) 2 ∈ A   (ii) 5,6 ∈ A   (iii) 3,4,7 ∈ A   (iv) 2,8 ∈ A

Solution:

i- Given

Set A = {2,3,4,5,6}

Here, element 2 belongs to set A.

Hence, the given statement is true.

ii- Given

Set A = {2,3,4,5,6}

Here, element 5.6 belongs to set A.

Hence, the given statement is true.

iii- Given

Set A = {2,3,4,5,6}

Here, element 7 does not belong to set A.

Hence, the given statement is false.

iV- Given

Set A = {2,3,4,5,6}

Here, element 8 does not to set A.

Hence, the given statement is false.

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

(i) 5 ∈ B   (ii) 12 ∈ B   (iii) 14 ∈ B   (iv) 9 ∈ B

solution:

i- Given

set B = {4,6,8,10,12,14}

Here, element 5 does not belongs to set B.

Hence, the given statement is false.

ii- Given
Set B = {4,6,8,10,12,14}
Here, element 12, belongs to set B.
Hence, the given statement is true.

iii- Given
Set B = {4,68,10,12,14}
Here, element 14 belongs to set B.
Hence, the given statement is true.

iv- Given
Set B = {4,6,8,10,12,14}
Here element 9 does not belongs to set B.
Hence the given statement is False.

v- Given
set B = {4,6,8,10,12,14}
Here, B is a set of even number between 2 and 16
Hence, the given statement is true.

vi- Given
Set B = {4,6,8,10,12,14}
Here, element 4,6 and 10 belongs to set B.
Hence, the given statement is true.

3. State wheather true or false :

(i) Sets {4,9,6,2} and {6,2,49} 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 ~~{3,4}~~ {5,4,4,5,} are not the same.

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

(v) Collection of vowels used in the word 'ALLAHABAD' forms a set.

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

(viii) If M is the set of letters used in the word 'Mumbai' then: M = {m,u,b,a,i}.

4. Write the set contaning:
(i) the first five counting numbers.
(ii) the three types of triangles.
(iii) the three types of angles.
(iv) the member of your family.
(v) the first six consonants of the English alphabets.
(vi) the first four vowels of the English alphabets.
(vii) the names of any three prime Minister of India.

Solution:

i- {1,2,3,4,5} is a set of first five counting numbers.
ii- {right triangle, acute triangle, obsute triangle} is a set of three types of triangles.
iii- {right angle, acute angle, obtuse angle} is a type of angles.
iv- {Mother, Father, sister, brother} is a set of the members of your family.
v- {b,c,d,f,g,h} is a of first six consonants of the English alphabets.
vi- {a,e,i,o} is a set of four vowels of a english Alphabet.

viii- {Narendra Modi, Dr. Manmohan singh, A.B vaipyee} is a set of three prime Minister of India.

5: (a) Write the set members (elements) of each set given below:

(i) {3, 8, 5, 15, 12, 7}   ii- {c, m, n, o, a}

solution :

a-i- The members of set {3, 8, 5, 15, 12, 7} are 3, 8, 5, 15, 12 and 7.

ii- The members of set {c, m, n, o, s} are, c, m, n, o, s.

(b) Write the sets whose elements are

(i) 2, 4, 8, 16, 64 and 128   (ii) 3, 5, 15, 45, 75 and 90

solution :

i- The set of elements 2, 4, 8, 16, 64 and 128 are {2, 4, 8, 16, 64, 128}.

ii- The set of elements 3, 5, 15, 45, 75 and 90 are {3, 5, 15, 45, 75, 90}.

6-(i) Write the set of letter used in the word 'BHOPAL'.

(ii) Write the set of vowels used in the word 'Bengal'.

(iii) Write the set of consosants used in the word 'HONG-KONG'.

solution :

i- {B, H, O, P, A, L} is the set of letters used in the word 'BHOPAL'.

ii- {A, E} is the set of vowels used in the word 'BENGAL'.

iii- {H, N, G, K} is the set of consonants used in the word 'HONG-Kong'.