

EXERCISE 10(B)

Question 1.

If set $A = \{2, 3, 4, 5, 6\}$, state which of the following statements are true and which are false :

- (i) $2 \in A$
- (ii) $5, 6 \in A$
- (iii) $3, 4, 7 \in A$
- (iv) $2, 8 \in A$

Solution:

- (i) True
- (ii) True
- (iii) False
- (iv) False

Question 2.

If set $B = \{4, 6, 8, 10, 12, 14\}$. State, which of the following statements is correct and which is wrong :

- (i) $5 \in B$
- (ii) $12 \in B$
- (iii) $14 \in B$
- (iv) $9 \in B$
- (v) B is a set of even numbers between 2 and 16.
- (vi) 4, 6 and 10 are the members of the set B. Also, write the wrong statements correctly.

Solution:

- (i) Wrong ; $5 \notin B$
- (ii) Correct
- (iii) Correct
- (iv) Wrong ; $9 \notin B$
- (v) Correct
- (vi) Correct.

Question 3.

State, whether true or false :

- (i) Sets $\{4, 9, 6, 2\}$ and $\{6, 2, 4, 9\}$ are not the same.
- (ii) Sets $\{0, 1, 3, 9, 4\}$ and $\{4, 0, 1, 3, 9\}$ are the same.
- (iii) Sets $\{5, 4\}$ and $\{5, 4, 4, 5\}$ 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 'ROOP'; then $P = \{p, o, r\}$
- (vii) If M is the set of letters used in the word 'MUMBAI', then: $M = \{m, u, b, a, i\}$

Solution:

- (i) False.
- (ii) True.
- (iii) False.

- (iv) True.
- (v) True.
- (vi) True.
- (vii) True.

Question 4.

Write the set containing :

- (i) the first five counting numbers.
- (ii) the three types of angles.
- (iii) the three types of triangles.
- (iv) the members of your family.
- (v) the first six consonants of the English Alphabet.
- (vi) the first four vowels of the English Alphabet.
- (vii) the names of any three Prime-Ministers of India.

Solution:

- (i) {1, 2, 3, 4, 5}
- (ii) {acute-angle, obtuse-angle, right-angle}.
- (iii) {scalene triangle, isosceles triangles, equilateral triangle}.
- (iv) { Write the name of family member}.
- (v) {b, c, d, f, g, h}
- (vi) {a, e, i, o}
- (vii) {J.L. Nehru, A.B. Vajpayee, Dr. Manmohan Singh}.

Question 5.

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

- (i) {3, 8, 5, 15, 12, 7}
- (ii) {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:

- (a) (i) 3, 8, 5, 15, 12 and 7
- (ii) c, m, n, o and s
- (b) (i) {2, 4, 8, 16, 64, 128}
- (ii) {3, 5, 15, 45, 75, 90}

Question 6.

- (i) Write the set of letters used in the word 'BHOPAL'.
- (ii) Write the set of vowels used in the word 'BENGAL'.
- (iii) Write the set of consonants used in the word 'HONG KONG'.

Solution:

- (i) {b, h, o, p, a, l}
- (ii) {e, a}
- (iii) {h, o, n, g, k}