

Exercise 10-B

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

i) $2 \in A$

Ans- Set $A = \{2, 3, 4, 5, 6\}$

Here, element 2 belongs to set A

Hence, the given statement is true

ii) $5, 6 \in A$

Ans- Set $A = \{2, 3, 4, 5, 6\}$

Here, element 5 and 6 belongs to set A

Hence, the given statement is true.

iii) $3, 4, 7 \in A$

Ans- Set $A = \{2, 3, 4, 5, 6\}$

Here, element 7 doesn't belongs to set A

Hence, the given statement is false.

iv) $8, 2 \in A$

Ans- Set $A = \{2, 3, 4, 5, 6\}$

Here element 8 doesn't belongs 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 is correct and which is wrong.

i) $5 \in B$

Ans- Set $B = \{4, 6, 8, 10, 12, 14\}$

Here, element 5 doesn't belongs to set B

Hence, the given statement is false.

ii) $12 \in B$

Ans- Set $B = \{4, 6, 8, 10, 12, 14\}$

Here, element 12 belongs to set B

Hence, the given statement is true.

iii) $14 \in B$

Ans - Here, element 14 belongs to set B
Hence, the given statement is true.

iv) $9 \in B$

Ans - Here, element 9 doesn't belong to set B
Hence, the given statement is false.

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

Ans - ~~Here~~ $B = \{4, 6, 8, 10, 12, 14\}$

Here, B is a set of even numbers between 2 and 16
Hence, the given statement is true.

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

Ans - $B = \{4, 6, 8, 10, 12, 14\}$

Here, the elements 4, 6 and 10 belong to set B.
Hence, the given statement is true.

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 'ALLAHABAD' forms a set. True

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

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

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4. Write the set containing:-

i) the first five counting numbers.

Ans - Required Set = $\{1, 2, 3, 4, 5\}$

ii) the three types of angles.

Ans - Required Set = $\{\text{Right angle, acute angle, obtuse angle}\}$

iii) the three types of triangles.

Ans - Required Set = $\{\text{Right-angled triangle, acute-angled triangle, obtuse-angled triangle}\}$

iv) the members of your family.

Ans - Required Set = $\{\text{Pradeep Ku. Nath, Razmita Nath, Budhibaman Nath, Pranita Nath, Pooja Nath}\}$

v) the first six consonants of the English alphabet.

Ans - Required set = $\{b, c, d, f, g, h\}$

vi) the first four vowels of the English alphabet.

Ans - Required set = $\{a, e, i, o\}$

vii) the names of any three Prime Ministers of India.

Ans - Required set = $\{\text{Narasimha Reddy, Dr. Manmohan Singh, Indira Gandhi}\}$

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

i) $\{3, 8, 5, 15, 12, 7\}$

Ans - The members of this set are - 3, 8, 5, 15, 12 and 7.

ii) $\{c, m, n, o, s\}$

Ans - The members of this set are - c, m, n, o and s.

(b) Write the sets whose elements are:

i) 2, 4, 8, 16, 64 and 128

Ans - The required set = $\{2, 4, 8, 16, 64, 128\}$

ii) 3, 5, 15, 45, 75 and 90

Ans - The required set = $\{3, 5, 15, 45, 75, 90\}$

6. i) Write the set of letters used in the word 'BHOPAL'.

Ans- The required set = {b, h, o, p, a, l}

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

Ans- The required set = {e, a}

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

Ans- The required set = {h, n, g, k}