CHAPTER-10

SETS

WORKSHEET

1. State whether or not the following elements form a set, if not, give reason:

(i) All easy problems in your text book.

(ii) All three sided figures.

(iii) The first five counting numbers.

(iv) All the tall boys of your class.

(v) The last three days of the week.

(vi) All triangle that are difficult to draw.

(vii) The first three letters of the English alphabet.

(viii) All tasty fruits.

(ix) All clever boys of class 6.

(x) All good schools in Delhi.

(xi) All the girls in your class, whose heights are less than your height.

(xii) All the boys in your class, whose heights are more than your height.

(xiii) All the problems in your Mathematics book, which are difficult for Amit.

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

(i) 2 ε A

(ii) 5, 6 ε A

(iii) 3, 4, 7 ε A

(iv) 2, 8 ε A

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

(i) 5 ε B

(ii) 12 ε B

(iii) 14 ε B

(iv) 9 ε B

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

(vi) 4, 6 and 10 are die members of the set B. Also, write the wrong statements correctly.

4. State, whether true of 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}

5. 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

6. (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

7. (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'

8. 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 is a letter in the word 'SCHOOL'}

(iv) {x: x is an odd natural number between 10 and 20}

(v) {Vowels used in the word 'AMERICA'}

9. 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'

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

(i) {2, 4, 6, 8, 10}

(ii) {2, 3, 5, 7, 11}

(iii) {January, June, July}

(iv) {a, e, i, o, u}

(v) {Tuesday, Thursday}

11. 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

12. 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

13. State, whether the given set is infinite or finite:

(i) {3, 5, 7, ……}

(ii) {1, 2, 3, 4}

(iii) {……., -3, -2, -1, 0, 1, 2}

(iv) {20, 30, 40, 50, …, 200}

(v) {7, 14, 21, ……., 2401}

14. Which of the following sets is empty?

(i) Set of counting numbers between 5 and 6

(ii) Set of odd numbers between 7 and 19.

(iii) Set of odd numbers between 7 and 9

(iv) Set of even numbers which are not divisible by 2

(v) {0}

15. State, which pair of sets, given below, are equal sets or equivalent sets:

(i) {3, 5, 7} and {5, 3, 7}

(ii) {8, 6, 10, 12} and {3, 2, 4, 6}

(iii) {7, 7, 2, 1, 2} and {1, 2, 7}

(iv) {2, 4, 6, 8, 10} and {a, b, d, e, m}

(v) {5, 5, 2, 4} and {5, 4, 2, 2}

16. State, which of the following are finite or infinite sets:

(i) Set of integers

(ii) {Multiple of 5}

(iii) {Fractions between 1 and 2}

(iv) {Number of people in India}

(v) Set of trees in the world

17. State, whether or not the following sets are empty:

(i) {Prime numbers divisible by 2}

(ii) {Negative natural numbers}

(iii) {Women with height 5 metre}

(iv) {Integers less than 5}

(v) {Prime numbers between 17 and 23}

18. State, if the given pairs of sets are equal sets or equivalent sets:

(i) {Natural numbers less than five} and {Letters of the word 'BOAT'}

(ii) {2, 4, 6, 8, 10} and {even natural numbers less than 12}

(iii) {1, 3, 5, 7, ...} and set of odd natural numbers

(iv) {Letters of the word MEMBER} and {Letters of the word 'REMEMBER'}

(v) {Negative natural numbers} and {50th day of a month}

19. State, whether the following are finite or infinite sets:

(i) {2, 4, 6, 8, ... 800}

(ii) {....., -5, -4, -3, -2}

(iii) {x: x is an integer between -60 and 60}

(iv) {No. of electrical appliances working in your house}

(v) {x: x is a whole number greater than 20}

20. For each statement, given below, write True or False:

(i) {…., -8, -4, 0, 4, 8}is a finite set

(ii) {-32, -28, -24, -20, ……., 0, 4, 8, 16} is an infinite set

(iii) {x: x is a natural number less than 1} is the empty set

(iv) {Whole numbers between 15 and 16} = {Natural numbers between 5 and 6}

(v) {Odd numbers divisible by 2} is the empty set

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx