SETS

1

Q1. Tick the well-defined sets from the following:

a. The collection of vowels in the word MATHEMATICS

b. The collection of tall girls in the class

c. The collection of girls in the class who are taller than 175 cm

d. The collection of 10 poems written by Tagore

Q2. If X is the set of all even natural numbers greater than 100, then state true or false for the following statements:

a. $112 \in X$ _____

b. $X \in 112$ _____

c. $1094 \in X$ _____

d. $78 \in X$ _____

Q3. Find the members of each of the following sets. Choose the correct answer from the options given below:

a. {x : x is a letter in the word INDIA}

(i) {I, N, D, I, A}

(ii) {I, N, D, A}

(iii) {N, D}

a. {x : x is a factor of 24}

(i) {2, 3 ,4, 6, 8, 12, 24}

(ii) {1, 2, 4, 6, 8, 12, 24}

(iii) {1, 2, 3, 4, 6, 8, 12, 24}

Q4. Write each of the following sets in set builder form:

a. X= {2, 4, 6, 8…..}

Set builder form:_____

b. Y = {1, 8, 27, 64,…..}

Set builder form:_____

Q5. Write the following sets in tabular form.

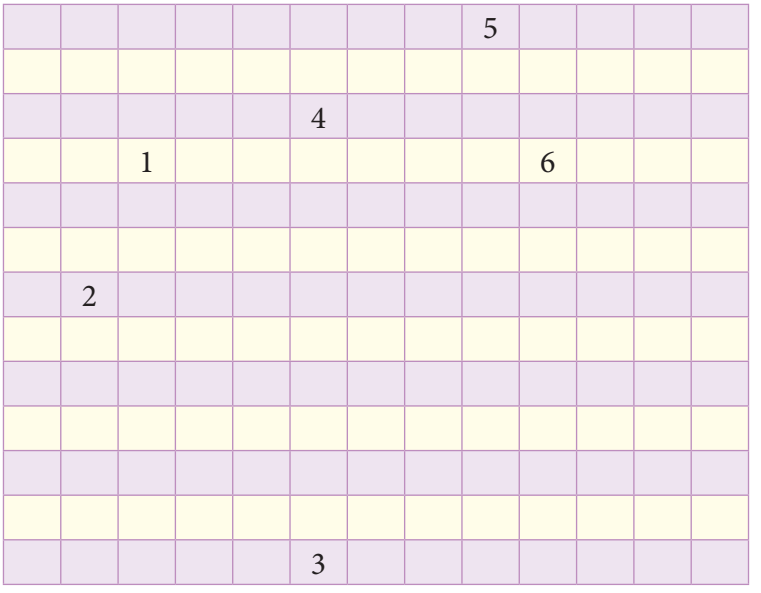
a. A = {x : x = 5n and $0 < n < 6$}

_____

b. B = {y: set of squares of first 3 composite numbers}

_____

Q6. Identify the type of sets in each of the following case and fill in the crossword:



Across:	Down:
1. If X = {a : a ∈ N} and Y = { b : b > 0}, then X and Y are:	4. A set of all multiples of 6 less than or equal to 6
2. If A = { January, February, March} and B={Monday, Tuesday, Wednesday} then the sets A and B are:	5. Set of vowels in the word GYPSY
3. A set of all the students who scored full marks in math class test	6. If A = { 2, 3, 5} and B={Set of first three prime numbers} then the sets A and B are:

Q7. Find the cardinal number for the following set and fill in the blanks:

A = { Name of all the months which do not have any vowel}

n(A) = _____

The cardinal number for set A is ___, thus it is an _____ (empty/ infinite)set.

Q8. State true or false:

a. – 4 ∈ { x: x is an integer} _____

b. 0 ∈ { x: x is a whole number} _____

c. 4 ∈ { x: x is an odd composite number} _____

Q9. Find whether the following represent a singleton set or not. Write the answer as Yes or No.

a. A = { Set of all vowels in the word SEVENTEEN} _____

b. P = {a : a is a factor of the smallest natural number} _____

Q10. Write the members of each of the following set and fill in the blanks:

X = {a : a is an integer and a > 10}

Y = {b: b is a whole number}

Set X = {_____}

Set Y = { _____}

X and Y are _____ sets. (finite/ infinite)

X and Y have _____ elements in common. (no/ many)

So, X and Y are _____ sets.(overlapping/ disjoint)

ANSWERS

1. (a) and (c)

2. a. True b. False
   c. True d. False

3. a. (ii)
   b. (iii)

4. a. X= {a : a = 2n and n ∈ N}
   b. Y = {b : b is the cube of a natural number}

5. a. A= {5, 10, 15, 20, 25}
   b. B={16, 36, 64}

6.

								E				
								M				
					S			P				
		I	N	F	I	N	I	T	E			
					N			Y	Q			
					G				U			
	E	Q	U	A	L				I			
					E				V			
					T				A			
					O				L			
					N				E			
									N			
					F	I	N	I	T	E		

7. 0,0,empty

8. a. True b. True c. False

9. a. Yes b. Yes

10. X = {11, 12, 13, 14, ….}
    Y = { 0, 1, 2, 3, 4…..}
    Infinite, many, overlapping