SETS

1

Q1. Find which are well-defined sets and state Yes or No as answer.

a. The collection of five prime ministers of India
   Answer: _____

b. The collection of first five prime ministers of India
   Answer: _____

c. The collection of months having 31 days
   Answer: _____

d. The collection of all intelligent teachers in the school
   Answer: _____

Q2. If X is the set of all natural numbers divisible by 3, then state true or false for the following statements:

a. $3 \in X$_____

b. $X \in 3$_____

c. $33 \in X$_____

d. $-33 \in X$_____

Q3. Write the members of each of the following sets:

a. {x : x is a letter in the word SCHOOL}
   Members of the set: _____

b. {x : x is an odd natural number less than 19}
   Members of the set: _____

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

a. A= {3, 6, 9, 12}
   Set builder form:_____

b. G = {March, May}
   Set builder form:_____

Q5. Write the following sets in tabular form.

a. M = {x : x is an integer and $-2 < x < 5$}

   _____

b. A = {x : set of squares of first 3 prime numbers}

_____

Q6. Match the following:

Finite Set	P = {x : x is a natural number and less than 1 }
Infinite Set	B = Set of all planets in the Solar system
Singleton Set	X = Set of all the people on earth who speak Hindi
Empty set	K = {x : x is an even prime number}

Q7. Write the cardinal number for each of the following set:

a. A = { n : n is an even number and n < 5}

_____

b. P = { x : x is a factor of 8}

_____

Q8. State true or false:

a. Equal sets are always equivalent. _____

b. A set of all integers less than 7 is an infinite set. _____

c. n () = 1 _____

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

a. A = { x: x is a natural number neither prime nor composite} _____

b. P = {a : a is a factor of an even prime number } _____

Q10. Find whether the sets X and Y are overlapping or disjoint sets.

X = {a : a is a factor of 16}

Y = {b: b is a multiple of 16}

Answer: _____

ANSWERS

1. a. No b. Yes
   c. Yes d. No
2. a. True b. False
   c. True d. False
3. a. S, C, H, O L
   b. 1, 3, 5, 7, 9, 11, 13, 15, 17
4. a. A= {x : x is a mulstiple of 3 and less than 13}
   b. G= {x : x is the 3rd and 5th month of an year}
5. a. M = { – 1, 0, 1, 2, 3, 4}
   b. A = {4, 9, 25}
6.

Finite Set	B = Set of all planets in the Solar system
Infinite Set	X = Set of all the people on earth who speak Hindi
Singleton Set	K = {x : x is an even prime number}
Empty set	P = {x : x is a natural number and less than 1 }

7. n(A) = 2
   n(P) = 4
8. a. True b. True c. False
9. a. Yes b. No
10. Overlapping sets, as 16 is common in both sets