



Topic covered:

- Fundamentals of Mathematics (Session- 1)

Daily Practice Problems

- Which of the following is not a set?
 - The collection of great people of the world
 - The collection of all boys of age greater than 10 years
 - The collection of all letters of the word 'LEARNING'
 - The collection of questions of the topic 'SET THEORY'
- Which of the following is a set?
 - The collection of all strong boys in a class
 - The collection of all short people in a colony
 - The collection of letters of the word 'CORONA'
 - The collection of difficult topics in Maths
- Which of the following is an empty set?
 - $\{\phi\}$
 - $\{0\}$
 - ϕ
 - $\{x : x \text{ is a non-real number}\}$
- The collection of pet animals is
 - a null set
 - a finite set
 - an infinite set
 - not a set
- Which of the following is a null set?
 - $\{x : x \text{ is a real number and } x^2 - 1 = 0\}$
 - $\{x : x \text{ is a real number and } x^2 + 1 = 0\}$
 - $\{x : x \text{ is a real number and } x^2 - 9 = 0\}$
 - $\{x : x \text{ is a real number and } x^2 = 5x + 6\}$
- Which of the following is an infinite set?
 - The set of human beings on earth
 - The set of water drops in a glass of water
 - The set of trees in a forest
 - The set of all prime numbers

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ANSWER KEY

Question No.	1	2	3	4	5	6	7	8	9	10
Correct Answer	(a)	(c)	(c)	(d)	(b)	(d)	(b)	(d)	(d)	(b)

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SOLUTIONS

Answer 1 :

Collection of things with an adjective such as beautiful, brave, ambitious, tall, fat etc is not a set. So clearly the collection of great people of the world is not a set

Answer 2 :

As explained in the question 1, option c is correct.

Answer 3 :

Empty set is indicated by ϕ or $\{ \}$ but not $\{\phi\}$. So, option c is correct.

Answer 4 :

Pet: adjective, so not a set.

Answer 5 :

Option (a): $x^2 - 1 = 0 \Rightarrow x = \pm 1$

Option (b): $x^2 + 1 = 0$ has no real solutions \Rightarrow It is null set.

Option (c): $x^2 - 9 = 0 \Rightarrow x = \pm 3$

Option (d): $x^2 - 5x - 6 = 0 \Rightarrow x = 6, -1$

Answer 6 :

Option (a): It is having countable number of elements.

Option (b): If we are pouring water drop by drop into glass after sometime an accountable finite number of droplets, the glass will be filled. So, it is finite set.

Option (c): In a particular forest the number of trees is always finite.

Option (d): Clearly set of prime numbers is infinitely many. So, it is infinite set.

Answer 7 :

Option (a): ϕ is not the element of ϕ . So, it is wrong.

Option (b): ϕ is an element of $\{\phi\}$. So, it is correct.

Option (c): $\{\phi\}$ is not the element of $\{\phi\}$. So, it is wrong.

Option (d): 0 is not the element of ϕ . So, it is wrong.

Answer 8 :

$$A = \{1,2,3,4\} \Rightarrow n(A) = 4.$$

Answer 9 :

$$A = \{A, E, I, N, T, Q, R, U\} \Rightarrow n(A) = 8$$



Answer 10 :

$$\begin{aligned}x^3 - 3x^2 + 2x &= 0 \\ \Rightarrow x(x^2 - 3x + 2) &= 0 \\ \Rightarrow x(x - 1)(x - 2) &= 0 \Rightarrow x = \{0, 1, 2\} \\ \therefore \text{Roster form} &= \{0, 1, 2\}\end{aligned}$$

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