CBSE NCERT Based Chapter wise Questions (2025-2026)

Class-X

Subject: Mathematics

Total : 6 Marks (expected) [MCQ(1)-1 Mark, LA(1)-5 Marks]

Chapter Name : *Quadratic Equations* (Chap : 4)

Level - 1

MCQ Type :

1. The roots of the quadratic equation $x^2 - 2\sqrt{3}x - 22 = 0$ are

Ⓐ real, rational and equal
Ⓑ real, irrational and unequal
Ⓒ non-real
Ⓓ real, rational and unequal

[Hints : Use Quadratic formula]

2. Which of the following equations has 2 as a root?

Ⓐ $x^2 - 4x + 5 = 0$
Ⓑ $3x^2 - 6x - 2 = 0$
Ⓒ $x^2 + 3x - 12 = 0$
Ⓓ $2x^2 - 7x + 6 = 0$

[Hints : Put x = 2 in each equation and check L.H.S = 0]

3. Which of the following is not a quadratic equation?

Ⓐ $x^2 + 3x - 5 = 0$
Ⓑ $x^2 + x^3 + 2 = 0$
Ⓒ $3 + x + x^2 = 0$
Ⓓ $x^2 - 9 = 0$

4. The roots of the quadratic equation $6x^2 - x - 2 = 0$ are

Ⓐ $\frac{2}{3}, \frac{1}{2}$
Ⓑ $-\frac{2}{3}, \frac{1}{2}$
Ⓒ $\frac{2}{3}, -\frac{1}{2}$
Ⓓ $-\frac{2}{3}, -\frac{1}{2}$

[Hints : Solve by factorization]

5. The quadratic equation whose roots are 1 and $\frac{-1}{2}$

Ⓐ $2x^2 + x - 1 = 0$
Ⓑ $2x^2 - x - 1 = 0$
Ⓒ $2x^2 + x + 1 = 0$
Ⓓ $2x^2 - x + 1 = 0$

[Hints : Use $x^2 - (a+b)x + ab = 0$ where a, b are roots.]

6. The equation $2x^2 + kx + 3 = 0$ has two equal roots, then the value of k is

Ⓐ $\pm\sqrt{6}$
Ⓑ ± 4
Ⓒ $\pm 3\sqrt{2}$
Ⓓ $\pm 2\sqrt{6}$

[Hints : Use $b^2 - 4ac = 0$.]

LA Type:

7. Solve for x : $\frac{1}{x-2} + \frac{2}{x-1} = \frac{6}{x}, x \neq 0,1,2.$

8. The denominator of a fraction exceeds its numerator by 2. If one is added to both numerator and denominator, the difference between the new and original fraction is $\frac{1}{21}$. Find the original fraction.

[Hints : $\frac{x+1}{x+3} - \frac{x}{x+2} = \frac{1}{21}$**.]**

9. The sum ages (in years) of a son and his father is 35 and product of their ages is 150. Find their ages.

[Hints : x(35 – x) = 150]

10. A natural number when increased by 12, becomes equal to 160 times the reciprocal of given natural number. Find the number.

[Hints : $x + 12 = \frac{160}{x}$**.]**

11. A shopkeeper buys a number of packets of biscuits for ₹80. If he had bought 4 more packets for the same amount, each packet would have cost ₹1 less. How many packets did he buy?

[Hints : $\frac{80}{x} - \frac{80}{x+4} = 1$**]**

12. In a class test, the sum of Shefali's marks in Mathematics and English is 30. If she had got 2 marks more in Mathematics and 3 marks less in English, the product of their marks would have been 210. Find her marks in the two subjects.

[Hints : (x + 2) (27 – x) = 210.]

ANSWER

1. Ⓑ
2. Ⓓ
3. Ⓑ
4. Ⓒ
5. Ⓑ
6. Ⓓ
7. 3, $\frac{4}{3}$
8. $\frac{4}{6}$
9. 5 yrs, 30 yrs
10. 8
11. 16
12. Maths = 13, Eng = 17 or Maths = 12, Eng = 18