RK VISION ACADEMY

NEET | IIT – JEE | FOUNDATION

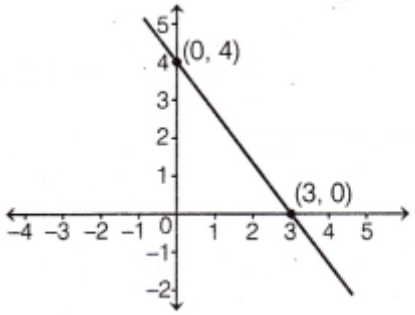
CBSE PRACTICE PAPER(2024)

(Mathematics)

Grade : X **Marks: 40**
marks
Chapter: Polynomial **SET 2** **Time: 90**
minutes

SECTION A

(This section comprises of Multiple-choice questions (MCQ) of 1 mark each `

1. 

The given linear polynomial y = f(x) has

(a) 2 zeroes (b) 1 zero and the zero is '3 ' (c) 1 zero and the zero is '4' (d) No zero

2. The zeroes of the polynomial $f(x) = 4x^2 + 8x$ are

(a)2,0 (b) -2, 2 (c) 0, 1 (d) 0, -2

3. For what value of k, -4 is a zero of the polynomial $x^2 – x -(2k + 2)$?

(a) 7 (b) 8 (c) 9 (d) 10

4. If α and β are the zeroes of the polynomial $f(x) = x^2 -5x + k$ such that α – β = 1, then the value of 4k is

(a) 12 (b) 24 (c) 10 (d) 20

5. Assertion (A) If α and β are the zeroes of the polynomial $x^2 + 2x – 15$, then 1α + 1β is 215.
Reason (R) If α and β are the zeroes of a quadratic polynomial $ax^2 + bx + c$, then
α + β = –ba and αβ = ca.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A) (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A (c) Assertion (A) is true but Reason (R) is false. (d) Assertion (A) is false but Reason (R) is true.

6. If 1/2 is a root of the equation $x^2 + kx – 54 = 0$, then the value of k is

(a) 2 (b) -2 (c) 1/4 (d) 1/2

7. If one of the zeroes of a quadratic polynomial $(k – 1)x^2 + kx + 1$ is -3, then the value of k is

(a) 3/4 (b) 1 (c) 4/3 (d) 2

8. The value of k such that the quadratic polynomial $x^2 – (k + 6)x + 2(2k + 1)$ has sum of the zero as half of their product, is

(a) 2 (b) 3 (c) -5 (d) 5

9. If one of the zeroes of the polynomial $f(x) = (k^2 + 8)x^2 + 13x + 6x$ is reciprocal of the other, then the value of k is

(a) 4, 2 (b) 6, 2 (c) 2, 3 (d) 4, 3

10 The value of k, for which $2k + 7$, $6k – 2$ and $8k + 4$ are 3 consecutive terms of an AP

(a) 2/15 (b) 2/17 (c) 15/2 (d) 17/2

SECTION B

(This section comprises of very short answer type-questions (VSA) of 2 marks each.)

11 If the sum of zeroes of the quadratic polynomial $3x^2 – kx + 6$ is 3, then find the value of k

12 If α and β are the zeroes of the polynomial $ax^2 + bx + c$, find the value of $\alpha^2 + \beta^2$.

13 Find the condition that zeroes of polynomial $p(x) = ax^2 + bx + c$ are reciprocal of each other.

SECTION C

(This section comprises of short answer type questions (SA) of 3 marks each)

14 Find the zeroes of the quadratic polynomial $\sqrt{3}\, x^2 – 8x + 4\sqrt{3}$. Verify the relation between zeros and co coefficients.

15 If α and β are the zeroes of the polynomial $6y^2 – 7y + 2$, find a quadratic polynomial whose zeroes are $1/\alpha$ and $1/\beta$.

16 If α, ß are zeroes of quadratic polynomial $x^2 + 5x + 1$, find the value of (i) $\alpha^2 + ß^2$ (ii) $\alpha^{-1} + ß^{-1}$

SECTION D

(This section comprises of long answer-type questions (LA) of 5 marks each)

17 If α and β are zeroes of $p(x) = kx^2 + 4x + 4$, such that $\alpha^2 + \beta^2 = 24$, find k.

18 If α and β are the zeroes of the polynomial $p(x) = 2x^2 + 5x + k$, satisfying the relation,

$\alpha^2 + \beta^2 + \alpha\beta = 214$ then find the value of k.

19 If $p(x) = x^3 – 2x^2 + kx + 5$ is divided by $(x – 2)$, the remainder is 11. Find k. Hence find all the zeroes of $x^3 + kx^2 + 3x + 1$.