RK VISION ACADEMY

NEET | IIT – JEE | FOUNDATION

CBSE PRACTICE PAPER(2024)

(Mathematics)

Grade : X **Marks: 40**
marks
Chapter: Polynomial SET-1 **Time: 90**
minutes

SECTION A

(This section comprises of Multiple-choice questions (MCQ) of 1 mark each.)
666

1. If α,β are the zeros of the polynomial $f(x)=x^2+x+1$, then $\frac{1}{\alpha}+\frac{1}{\beta}=$

(a)1 (b)-1 (c)0 (d) None of the these

2. If α,β are the zeros of the polynomial $f(x)=4x^2+3x+7$ then $\frac{1}{\alpha}+\frac{1}{\beta}=$

(a)$\frac{7}{3}$ (b)-$\frac{7}{3}$ (c) $\frac{3}{7}$ (d) $\frac{-3}{7}$

3. If the sum of the zeros of the polynomial $f(x)=2x^3-3kx^2+4x-5$ is 6, then the value of k is

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

4. If the product the zeros of the polynomial $f(x)=ax^3-6x^2+11x-6$ is 4, then the value of a is

(a)$\frac{7}{3}$ (b)-$\frac{7}{3}$ (c) $\frac{3}{7}$ (d) $\frac{-3}{7}$

5. The zeroes of the quadratic polynomial $x^2 + 99x + 127$ are

(A) both positive (B) both negative (C) one positive and one negative (D) both equal

6. The zeroes of the quadratic polynomial $x^2 + kx + k$, $k \neq 0$

(A) cannot both be positive (B) cannot both be negative (C) are always unequal (D) are always equal

7. If the zeroes of the quadratic polynomial $ax^2 + bx + c$, $c \neq 0$ are equal, then

(A) c and a have opposite signs (B) c and b have opposite signs (C) c and a have the same sign (D) c and b have the same sign

8. The product the zeros of the polynomial $f(x)=x^3+x^2+x-6$ is

(a)4 (b)-4 (c)6 (d) -6

9. If the zeroes of a quadratic polynomial $ax^2 + bx + c$ are both positive, then a, b and c all have the same sign.

(A) True (B) False (C) None of these (D) Statement wrong

10 The only value of k for which the quadratic polynomial $kx^2 + x + k$ has equal zeros is ½.

(A) True (B) False (C) None of these (D) Statement wrong

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

11 Find the zeros of the polynomial $f(x)= x^2+7x+12$ and verify the relation between the zeros and coefficient.

12 If two zeros of the polynomial $f(x)=x^3-4x^2-3x+12$ are $\sqrt{3}$ and $-\sqrt{3}$, then find its third zero.

13 Find the cubic polynomial with the sum, sum of the products of its zeros taken two at a time, and product of its zeros as 2, -7, -14 respectively.

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

14 Find the zeros of the polynomial $f(x)= abx^2 + (b^2-ac)x-bc$, and verify the relation between the zeros and co efficient.

15 If α,β are the zeros of the polynomial $f(x)=ax^2-bx+c$ then $\frac{1}{\alpha}+\frac{1}{\beta}$, $\alpha^2+\beta^2$.

16 If the zeros off the polynomial $f(x)=x^3-3x^2+x+1$ are a-b, a, a+b find a and b.

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

17 If α,β are the zeros of the polynomial $f(x)=x^2-p(x+1)-c$, show that $(\alpha+1)(\beta+1)=1-c$

18 If one zero of the polynomial $f(x)=4x^2-8kx-9$, is negative of the other, find the value of k.

19 If α,β are the zeros of the polynomial $f(x)=x^2-1$, find a quadratic polynomial whose zeros are $\frac{2\alpha}{\beta},\frac{2\beta}{\alpha}$.