Class X

Practice Test 2:

(Polynomials)

Duration: 0.45 hrs **TotalMks: --**

< LEVEL 1 >

1. The graph of a polynomial intersects y-axis once and x-axis twice. What will be the degree of that polynomial?
2. If a & b are the zeroes of polynomial $p(x) = x^2 + x + 1$ then find $\frac{1}{a} + \frac{1}{b}$.
3. Find the quadratic eqn whose roots are $\frac{-2}{\sqrt{3}}, \frac{\sqrt{3}}{4}$.
4. If $p(x) = \frac{1}{3}x^2 - 5x + \frac{3}{2}$ then find the sum and product of its zeroes.
5. If the sum of zeroes of a polynomial $f(x) = x^3 - 3kx^2 - x + 30$ is 6. Find the value of K.

< LEVEL 2>

6. Find the zeroes of the quadratic polynomial $f(x) = 6x^2 - 3 - 7x$ and verify the relationship between the zeroes and the coefficients.
7. For what value of k, (-4) is a zero of polynomial $x^2 - x - (2k + 2)$.
8. Find a quadratic polynomial, whose sum and product of its zeroes are ¼, -1.
9. If 2 is a zero of both the polynomials, $3x^2 + ax - 14$ and $2x - b$ then find value of $a - 2b$.
10. If sum of the zeroes of $kx^2 + 3k + 2x$ is equal to their product. Find k.

< LEVEL 3>

11. Check whether the polynomial $t^2 - 3$ is a factor of polynomial $2t^4 + 3t^3 - 2t^2 - 9t - 12$ by applying the division algorithm.
12. Divide $f(x) = 6x^3 + 11x^2 - 39x - 65$ by $g(x) = x^2 - 1 - x$.
13. If the zeroes of the polynomial $x^3 - 3x^2 + x + 1$ are a-b, a, a+b; find a & b.
14. Find a quadratic polynomial whose zeroes are $(5 - 3\sqrt{2})$ and $(5 + 3\sqrt{2})$.
15. If one of the zero of the polynomial $g(x) = (k^2 + 4)x^2 + 13x + 4k$ is reciprocal of the other then find k.

< LEVEL 4>

16. On dividing $x^3 – 3x^2 + x + 2$ by a polynomial g(x) the quotient and remainder were (x – 2) & (-2x + 4) respectively, find g(x).
17. Obtain all zeroes of $x^3 + 13x^2 + 32x + 20$.
18. Obtain all other zeroes of $3x^4 + 6x^3 – 2x^2 – 10x - 5$, if two of its zeroes are $\sqrt{\frac{5}{3}}, -\sqrt{\frac{5}{3}}$.
19. If the polynomial $6x^4 + 8x^3 + 17x^2 + 21x + 7$ is divided by $3x^2 + 1 + 4x$ then remainder r(x) = (ax + b) find a and b.

< LEVEL 5>

20. If a and b are the zeros of the polynomial $2x^2 – 7x + 3$. Find the sum of the reciprocal of its zeros.
21. If a & b are the zeroes of the polynomial $kx^2 + 4x + 4$ show that $a^2+b^2 = 24$. Find the value of k also.
22. If a & b are the zeroes of the polynomial $6x^2 + x - 2 = 0$. Find $\frac{a}{b} + \frac{b}{a}$.
23. If a & b are the zeroes of the polynomial $x^2 + (k + 6)x + 2(2k – 1)$. Find k if $a + b = \frac{1}{2}ab$
24. If (x + p) is a factor of polynomial $2x^2 + 2px + 5x + 10$ find p.
25. If a and b are zeros of quadratic polynomial $2x^2 + 5x + k$, find the value of k, such that $(a + b)^2 – ab = 24$.