CLASS X – MATHEMATICS – CHAPTER 02

POLYNOMIALS

Name: Date:

CHOOSE THE CORRECT OPTION FROM QUES 1 TO 12

Q01. Which of the following is polynomial?

(a) $x^2 - 6\sqrt{x} + 2$ (b) $\sqrt{x} + \frac{1}{\sqrt{x}}$ (c) $x^2 - 3x + 1$ (d) none of these

Q02. If α and β are the zeros of the quadratic polynomial $P(x) = x^2 - px + q$, then the value of $\alpha^2 + \beta^2$ is equal to

(a) $p^2 - 2q$ (b) $\frac{p}{q}$ (c) $q^2 - 2p$ (d) none of these

Q03. If α and β are zeroes of $x^2 + 5x + 8$ then the value of $(\alpha + \beta)$ is

(a) 5 (b) – 5 (c) 8 (d) – 8

Q04. The sum and product of the zeros of a quadratic polynomial are 2 and – 15 respectively. The quadratic polynomial is

(a) $x^2 - 2x + 15$ (b) $x^2 - 2x - 15$ (c) $x^2 + 2x - 15$ (d) $x^2 + 2x + 15$

Q05. If $P(x) = 2x^2 - 3x + 5$, then $P(-1)$ is equal to

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

Q06. Zeroes of $P(x) = x^2 - 2x - 3$ are

(a) 3 and 1 (b) 3 and – 1 (c) – 3 and – 1 (d) 1 and – 3

Q07. If αand β are the zeros of $2x^2 + 5x - 10$, them the value of αβ is

(a) $-\frac{5}{2}$ (b) 5 (c) – 5 (d) $\frac{2}{5}$

Q08. A quadratic polynomial, the sum and product of zeros are 0 and $\sqrt{5}$ respectively is

(a) $x^2 + \sqrt{5}$ (b) $x^2 - \sqrt{5}$ (c) $x^2 - 5$ (d) none of these

Q09. Degree of polynomial $y^3 - 2y^2 - \sqrt{3y} + 1/2$ is

(a) $\frac{1}{2}$ (b) 2 (c) 3 (d) $\frac{3}{2}$

Q10. Zeroes of $P(x) = 2x^2 + 9x - 35$ are

(a) 7 and $\frac{5}{2}$ (b) – 7 and $\frac{5}{2}$ (c) 7 and 5 (d) 7 and 2

Q11. The quadratic polynomial whore zeros are 3 and – 5 is

(a) $x^2 + 2x - 15$ (b) $x^2 + 3x - 8$ (c) $x^2 - 5x - 15$ (d) none of these

Q12. Polynomial $2x^4 + 3x^3 - 5x^2 - 5x^2 + 9x + 1$ is a

(a) Linear polynomial (b) quadratic polynomial

(c) cubic polynomial (d) Bi quadratic polynomial

Q01. Find the quadratic polynomial where sum and product of the zeros one a and $\frac{1}{a}$.

Q02. If α and β are the zeroes of the quadratic polynomial f (x) = $x^2 - x - 4$, Find the value of $\frac{1}{\alpha} + \frac{1}{\beta} - \alpha\beta$.

Q03. If the square of the difference of the zeroes of the quadratic polynomial $f(x) = x^2 + px + 45$ is equal to 144, find the value of p.

Q04. Find the value of 'k' such that the quadratic polynomial $x^2 - (k + 6)x + 2(2k + 1)$ has sum of the zeros is half of their product.

Q05. If α and β are the zeroes of the quadratic polynomial $f(x) = x^2 - p(x + 1) - c$, show that $(\alpha + 1)(\beta + 1) = 1 - c$

Q06. If the sum of the zeroes of the quadratic polynomial $f(t) = kt^2 + 2t + 3k$ is equal to their product, find the value if 'k'.

Q07. Find the zeros of the polynomial $p(x) = 4\sqrt{3}x^2 + 5x - 2\sqrt{3}$ and verify the relationship b/w the zeros and its coefficients.

Q08. Find the value of 'k' so that the zeroes of the quadratic polynomial $3x^2 - kx + 14$ are in the ratio 7: 6.

Q09. If one zero of the quadratic polynomial $f(x) = 4x^2 - 8kx - 9$ is negative of the other, find the value of 'k'.

Q11. If α and β are the zeros of the polynomial $f(x) = x^2 + px + q$ form polynomial whose zeros are $(\alpha + \beta)^2$ and $(\alpha - \beta)^2$.

Q12. Factorize

(a). $x^3 + 8y^3 + 64z^3 - 24$

(b). $x^2 + y - xy - x$

(c). $1 - a^2 - b^2 - 2ab$

(d). $\frac{3}{2}x^2 - x - \frac{4}{3}$