# INDIAN SCHOOL MUSCAT
# DEPARTMENT OF MATHEMATICS
# CLASS 10 TERM-1
# MCQ ASSIGNMENT ON POLYNOMIALS

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| 1. | If $x = \frac{8 \pm \sqrt{(-8)^2 - 4 \times 3 \times 2}}{2 \times 3}$ then the required polynomial is:<br>(a) $3x^2 - 8x + 2 = 0$ (b) $2x^2 - 8x - 2 = 0$<br>(c)$3x^2 + 8x - 2 = 0$ (d) $3x^2 + 8x + 2 = 0$ | 2. | Find the coefficient of $x^0$ $in$ $x^2 + 3x + 2 = 0$.<br>(a) 3 (b)-3<br>(c) 2 (d) -2 |
| 3. | In which condition will the polynomial $ax^2 + bx + c = 0$, be a quadratic equation?<br>(a) $a \neq 0$ (b) $a = b$<br>(c)$a = b$ (d)$a = 0$ | 4. | For which value of p will the equation $(p^2 - 1)x^2 + px + q = 0$ not be a quadratic equation?<br>(a) $p = 1$ (b) $p = -1$<br>(c) Both (i) and (ii) (d) $p = 0$ |
| 5. | Write the zeros of the polynomial $f(x) = x^2 - x - 6$.<br>(a) -3,2 (b) -3,-2<br>(c) 3,2 (d) 3,-2 | 6. | If $(x + a)$ is a factor of $f(x) = (2x^2 + 2ax + 5x + 10)$, find a.<br>(a) 2 (b) -2<br>(c) $\pm 2$ (d) |
| 7. | For what value of k is -4 a zero of the polynomial $f(x) = x^2 - x - (2k + 2)$?<br>(a) 6 (b)-6<br>(c) 9 (d)-9 | 8. | If $\alpha$ and $\beta$ are the zeros of a polynomial such that $\alpha + \beta = -6$ $and$ $\alpha\beta = -4$ then write the polynomial.<br>(a) $x^2 - 6x - 4 = 0$ (b) $x^2 + 6x - 4 = 0$<br>(c) $x^2 + 6x + 4 = 0$ (d) $x^2 - 6x + 4 = 0$ |
| 9. | If $\alpha$ and $\beta$ are the zeros of the polynomial $f(y) = 2y^2 + 7y + 5$, write the values of $\alpha + \beta + \alpha\beta$.<br>(a) 1 (b) 0<br>(c) -2 (d)-1 | 10. | For what value of k is 3 a zero of the polynomial $f(x) = 2x^2 + x + k$?<br>(a) $\sqrt{21}$ (b)21<br>(c) $-\sqrt{21}$ (d) -21 |
| 11. | The graph of a quadratic polynomial is :<br>(a) Circle (b) Straight<br>(c) Parabola (d) Ellipse | 12. | For what value of k is-2 a zero of the polynomial $f(x) = 3x^2 + 4x + 2k$?<br>(a) $\sqrt{2}$ (b) $-\sqrt{2}$<br>(c) -2 (d) 2 |

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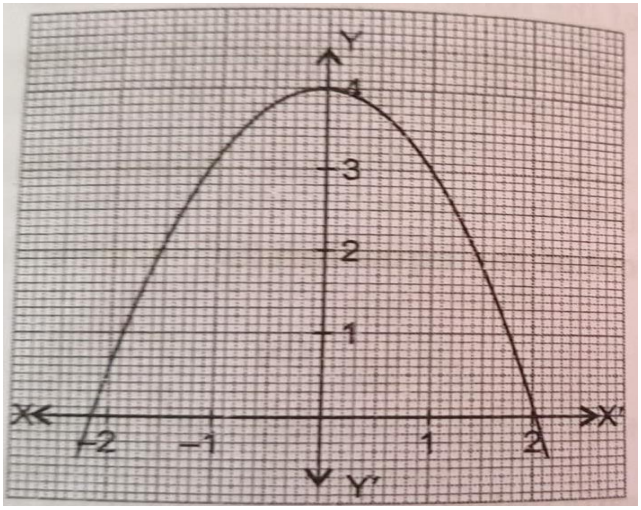
| 13. | If 1 is a root of the equations<br>$ay^2 + ay + 3 = 0$ and $y^2 + y + b = 0$<br>then ab equals:<br>(a) 3 (b) $-\frac{7}{2}$<br>(c) 6 (d) -3 | 14. | For which value of p will<br>$(3p + 1)x^2 + 4x - 2 = 0$ not be a<br>quadratic equation?<br>(a) 0 (b) $-\frac{1}{3}$<br>(c) $1/3$ (d) none of these. |
| 15. | The roots of the equation<br>$x^2 + x - p(p + 1) = 0$<br>where p is a constant are:<br>(a) p, p+1 (b) –p, p+1<br>(c) p, -(p+1) (d) –p, -(p+1) | 16. | The zeroes of the polynomial<br>$x^2 - 3x - m(m + 3)$are:<br>(a) m, m+3 (b) –m, m+3<br>(c) m, -(m+3) (d)-m, -(m+3) |
| 17. | If one of the zeroes of the quadratic<br>polynomial $x^2 + 3x + k\ is\ 2$, then value of k is<br>(a) 10 (b) -10<br>(c) -7 (d)-2 | 18. | The quadratic polynomial, the sum of whose zeroes is-5 and their product is 6, is :<br>(a) $x^2 + 5x + 6$ (b) $x^2 - 5x + 6$<br>(c) $x^2 - 5x - 6$ (d) $-x^2 + 5x + 6$ |
| 19. | $2x^4 + 3x^3 - 5x^2 + 9x + 1$ is an example of a<br>(a) bi-quadratic polynomial<br>(b) quadratic polynomial<br>(c) linear polynomial<br>(d) cubic polynomial | 20. | If $\frac{1}{2}$ is a root of the equation<br>$x^2 + kx - \frac{5}{4} = 0$, then the value of k is:<br>(a) 2 (b) -2<br>(c) $\frac{1}{2}$ (d) $-\frac{1}{2}$ |
| 21. | The number of polynomials having zeroes as -2 and 5 is :<br>(a) 1 (b) 2<br>(c) 3 (d) more than 3 | 22. | Which of the following is a polynomial?<br>(a) $x^2 - 6\sqrt{x} + 2$ (b) $\frac{5}{x^2} - 3x + 1$<br>(c)$\sqrt{x} + \frac{1}{\sqrt{x}}$ (d) None of these |

23. Anish and his father who is an architect by profession, visited Switzerland. They went to see Gothard Base tunnel which is world's longest tunnel and has a parabolic cross section.




The mathematical representation of the tunnel is shown in figure.

(i) The zeroes of the polynomial, whose graph is given, are:

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

(ii) What is the value of polynomial if x=3?

(a) 0 (b) 5 (c)-5 (d)-1

(iii) What will be the expression of the polynomial given in diagram?

(a) $x^2 - 2$ (b) $-x^2 + 4$ (c) $x^2 + 4$ (d) $x^2 + 2$

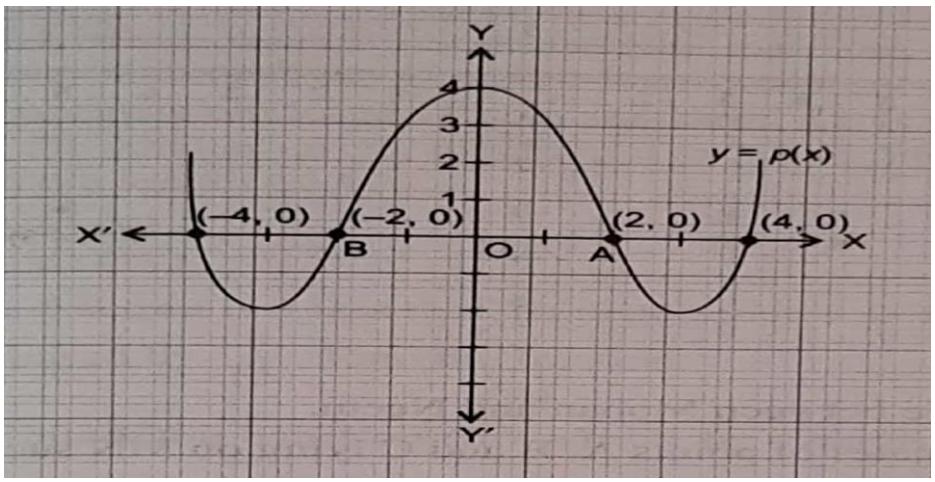
(iv) If the tunnel is represented by $-x^2 + 3x - 2$, then its zeroes are :

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

(v) If one zero is -4 and sum of zeroes is 1, then the representation of tunnels a polynomial is:

(a) $x^2 - x + 24$ (b) $-x^2 + x + 20$ (c) $x^2 + x + 20$ (d) $x^2 - x + 16$

24. To scare his friends in a street, a naughty boy spread a rope, which looks in some mathematical shape. Now few questions arises in his mind which he wants you to answer.



(i) Name the shape between points A and B.

(a) linear (b) parabola (c) ellipse (d) spiral

(ii) The number of zeroes of the polynomial $y=p(x)$ is

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

(iii) The zeroes of the polynomial are

(a)-4, -2, 2, 4 (b) -4, -1, 2, 4 (c)-4, -2, 0, 4 (d) -2, 0, 2, 4

(iv) The expression of the polynomial is

(a) $x^4 + 20x^2 + 64$ (b) $x^4 - 20x^2 + 64$

(c) $x^4 - 20x^2 - 64$ (d) $x^4 + 20x^2 - 64$

(v) The value of the polynomial when x = 2 is

(a) 144 (b)-128 (c)0 (d)32

25. Rainbow is an arch of colors that is visible in the sky, caused by the refraction and dispersion of the sun's light after rain or other water droplets in the atmosphere. The colors of the rainbow are generally said to be red, orange, yellow, green, blue, indigo and violet.



Each color of rainbow makes a parabola. We know that for any quadratic polynomial $ax^2 + bx + c, a \neq 0$, the graph of the corresponding equation $y = ax^2 + bx + c$ has one of the two shapes either open upwards like ∪or open downwards like ∩ depending on whether a > 0 or a < 0. These curves are called parabolas.

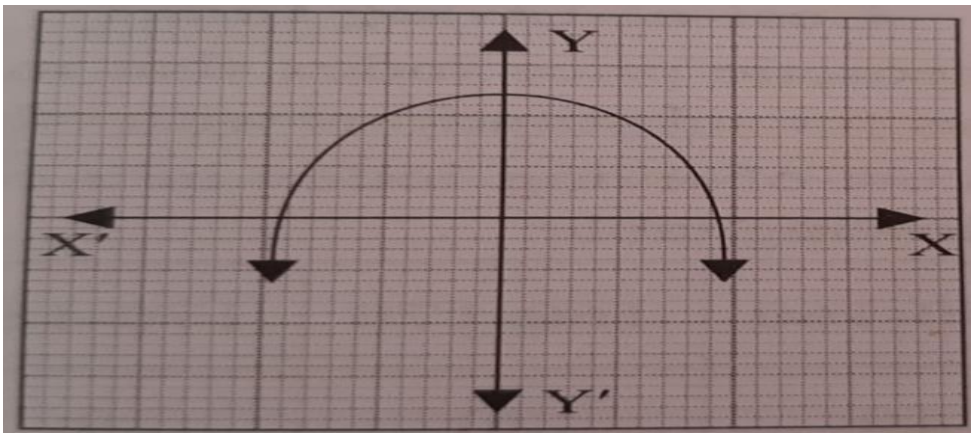
(i) A rainbow is represented by the quadratic polynomial $x^2 + (a + 1)x + b$ whose zeroes are 2 and -3. Then

(a) a = -7, b = -1 (b) a = 5, b = -1 (c) a = 2, b = -6 (d) a = 0, b = -6

(ii) The polynomial $x^2 - 2x - (7p + 3)$ represents a rainbow. If -4 is zero of it, then the value of p is

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

(iii) The graph of a rainbow y =f(x) is shown below.




The number of zeroes of f(x) is

(a) 0 (b)1 (c)2 (d)3

(iv) If graph of a rainbow does not intersect the x-axis but intersects y-axis in one point, then number of zeroes of the polynomial is equal to

(a) 0 (b)1 (c)0 or 1 (d)none of these.

(v) The representation of a rainbow is a quadratic polynomial. The sum and the product of its zeroes are 3 and -2 respectively. The polynomial is

(a) $k(x^2 - 2x - 3)$, for some real k. (b) $k(x^2 - 5x - 9)$, for some real k

(c) $k(x^2 - 3x - 2)$, for some real k (d) $k(x^2 - 2x - 3)$, for some real k