**Quadratic Equations**

**MCQ-Single Correct**

1. If, for a positive integer n, the quadratic equation, x(x + 1) + (x + 1)(x + 2) + …..+(x + )(x + n) = 10n has two consequitive integral solutions, then n is equal to :

(1) 12 (2) 9

(3) 10 (4) 11 **[2017]**

2. The sum of all real values of x satisfying the equation 

(1) -4 (2) 6

(3) 5 (4) 3 **[2016]**

3. Let α and β be the roots of equation . If , for , then the value of  is equal to :

(1) -6 (2) 3

(3) -3 (4) 6 **[2015]**

4. Let α and β be the roots of the equation  p ≠ 0. If p, q , r are in A.P. and , then the value of |α - β| is

(1)  (2) 

(3)  (4)  **[2014]**

5. If the equations x2 + 2x + 3 = 0 and ax2 + bx + c = 0 , a , b, c ε R, have a common root , then a : b : c is

(1) 3 : 2 : 1 (2) 1 : 3 : 2

(3) 3 : 1 : 2 (4) 1 : 2: 3 **[2013]**

6. The equation has

(1) infinite number of real roots (2) exactly one real root

(3) no real roots (4) exactly four real roots. **[2012]**

7. Let for   and  If , p(x) =0 only for x = -1 and p(-2) = 2, then the value of p(2) is

(1) 6 (2) 18

(3) 3 (4) 9 **[2011]**

8. Sachin and Rahul attempted to solve a quadratic equation. Sachin made a mistake in writing down the constant term and ended up in roots (4,3) . Rahul made a mistake in writing down coefficient of x to get roots (3,2). The correct roots of equation are

(1) -6,-1 (2) -4,-3

(3) 6,1 (4) 4,3 **[2011]**

9. If α and β are the roots of the equation  then =

(1) -1 (2) 1

(3) 2 (4) -2 **[2010]**

10. If the roots of the equation  be imaginary, then for all real values of x, the expression  is

(1) greater than 4ab (2) less than 4ab

(3) greater than -4ab (4) less than -4ab **[2009]**

11. The quadratic equations x2 – 6x +a = 0 and x2 – cx + 6 = 0 have one root in common. The other roots of the first and second equations are integers in the ratio 4 : 3. Then the common root is

(1) 1 (2) 4

(3) 3 (4) 2 **[2008]**

12. If the roots of the quadratic equation x2 + px + q = 0 are tan30o and tan15o, respectively then the value of 2 + q – p is

(1) 2 (2) 3

(3) 0 (4) 1 **[2006]**

13. All the values of m for which both roots of the equations  are greater than -2 but less than 4, lie in the interval

(1) -2 < m < 0 (2) m > 3

(3) -1 < m < 3 (4) 1 < m < 4 **[2006]**

14. If x is real, the maximum value of  is

(1) ¼ (2) 41

(3) 1 (4) 17/7 **[2006]**

15. The value of α for which the sum of the square of roots of the assume the least value is

(1) 1 (2) 0

(3) 3 (4) 2 **[2005]**

16. If roots of the equation x2 – bx + c = 0 be the consecutive integers, then b2 -4c equals

(1) -2 (2) 3

(3) 2 (4) 1 **[2005]**

17. If both the roots of the quadratic equation x2 – 2kx + k2 + k – 5 = 0 are less than 5, then k lies in the interval

(1) (5,6] (2) (6,∞)

(3) (-∞,4) (4) [4,5] **[2005]**

18. If ( 1 – p ) is a root of quadratic equation x2 + px + (1 – p) = 0, then its roots are

(1) 0,1 (2) -1,2

(3) 0,-1 (4) -1,1 **[2004]**

19. If one root of the equation x2 + px + 12 = 0 is 4, while the equation x2 + px + q = 0 has equal roots, then the value of ‘q’ is

(1)  (2) 4

(3) 3 (4) 12 **[2004]**

20. If the sum of the roots of the quadratic equation ax2 + bx + c = 0 is equal to the sum of the squares of their reciprocals, then ,  and  are in

(1) arithmetic progression (2) geometric progression

(3) harmonic progression (4) arithmetic-geometric-progression **[2003]**

21. The number of real solutions of the equation x2 – 3 |x| + 2 = 0 is

(1) 2 (2) 4

(3) 1 (4) 3 **[2003]**

22. The value of ‘a’ for which one root of the quadratic equation  is twice as large as the other , is

(1) 2/3 (2) -2/3

(3) 1/3 (4) -1/3 **[2003]**

23. If α ≠ β but α2 = 5α – 3 and β2 = 5β – 3, then the equation whose roots are  and  is

(1) 3x2 – 25x +3 = 0 (2) x2 + 5x -3 = 0

(3) x2 - 5x + 3 = 0 (4) 3x2 – 19x +3 = 0 **[2002]**

24. Difference between the corresponding roots of x2 + ax + b = 0 and x2 + bx + a = 0 is same and a ≠ b, then

(1) a + b + 4 = 0 (2) a + b - 4 = 0

(3) a – b – 4 = 0 (4) a – b + 4 = 0 **[2002]**

25. If p and q are the roots of the equation x2 + px + q = 0, then

(1) p = 1 , q = -2 (2) p = 0 , q = 1

(3) p = -2 , q = 0 (4) p = - 2 , q = 1 **[2002]**

26. Product of real roots of the equation t2x2 + |x| + 9 = 0

(1) is always positive (2) is always negative

(3) does not exist (4) none of these **[2002]**