

**Topic : Quadratic Equation**

**Type of Questions**

**M.M., Min.**

**Single choice Objective (no negative marking) Q.1,2,3,4, 5**

**(3 marks, 3 min.)**

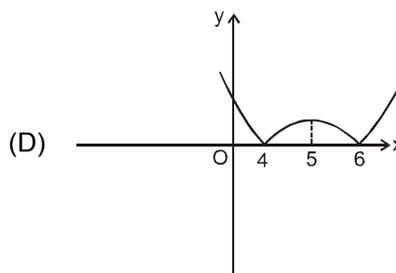
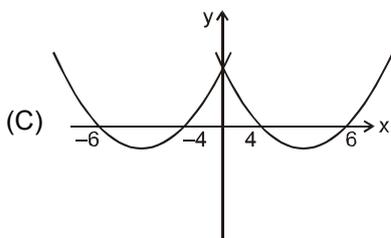
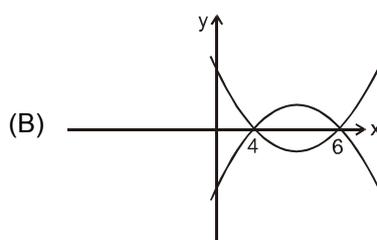
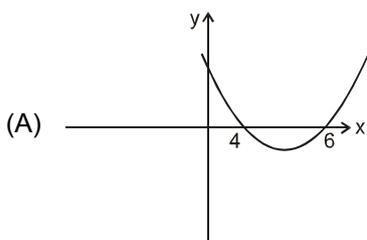
**[15, 15]**

**Subjective Questions (no negative marking) Q.6,7**

**(4 marks, 5 min.)**

**[8, 10]**

1. Which of the following is the graph of  $y = |x^2 - 10x + 24|$



2. Solution set of the equation  $3^{2x^2} - 2 \cdot 3^{x^2+x+6} + 3^{2(x+6)} = 0$  is

(A)  $\{-3, 2\}$

(B)  $\{6, -1\}$

(C)  $\{-2, 3\}$

(D)  $\{1, -6\}$

3. The set of values of 'a' for which both roots of the equation  $x^2 + 2(a + 1)x + (9a - 5) = 0$  are negative is :

(A)  $[0, \infty)$

(B)  $(-\infty, 6]$

(C)  $(-\infty, 0]$

(D)  $\left[\frac{5}{9}, 1\right] \cup [6, \infty)$

4. The set of all values of 'a' for which the quadratic equation  $3x^2 + 2(a^2 + 1)x + (a^2 - 3a + 2) = 0$  possess roots of opposite sign, is

(A)  $(-\infty, 1)$

(B)  $(-\infty, 0)$

(C)  $(1, 2)$

(D)  $(3/2, 2)$

5. If roots of equation  $x^2 - 2mx + m^2 - 1 = 0$  lie in the interval  $(-2, 4)$ , then

(A)  $m \in (-1, 3)$

(B)  $m \in (1, 5)$

(C)  $m \in (1, 3)$

(D)  $m \in (-1, 5)$

6. Find the equation each of whose roots is greater by unity, than the roots of the equation  $x^3 - 5x^2 + 6x - 3 = 0$ .

7. Find all values of 'p' for which the root(s) of the equation  $(p - 3)x^2 - 2px + 5p = 0$  are real and positive.

## Answers Key

1. (D)    2. (C)    3. (D)    4. (C)    5. (A)

6.  $x^3 - 8x^2 + 19x - 15 = 0$       7.  $p \in \left[ 3, \frac{15}{4} \right]$