Std. : 10th ICSE   **Date : 30/04/2017**

Sub : Maths   **Marks : 35   Time : 1 hr.**

Ch: Quadratic Equation, Reatio, Proportion and Linear Enqualities

1. Find the values of K, for which the given equation has real and equal roots.

    (1) $2x^2 - 10x + k = 0$ (2) $9x^2 + 3kx + 4 = 0$ **[04]**

2. Solve the following quadratic equation by factorization.

    (1) $x^2 + 6x + 5 = 0$ (2) $8x^2 - 22x - 21 = 0$ (3) $x^2 + 2\sqrt{2}x - 6 = 0$ **[03]**

3. A two digit number is four times the sum and three times the product of its digit, find the number.

                                                                              [03]

4. (i)   Solve the inequation $2x - 3 < 7$, where $x \in \{1, 2, 3, 4, 5, 6, 7, 8\}$ **[02]**

    (ii)   Solve the in equation $6x - 5 < 3x + 4$, where $x \in N$, Also represent it's solution on the number line.   **[02]**

5. Find the values of x, which satisfy the inequation $-2 \le \dfrac{1}{2} - \dfrac{2x}{3} \le 1\dfrac{5}{6}$, $x \in N$ **[03]**

6. Find the smallest value of x which satisfies the inequation   **[03]**

    $2x + \dfrac{5}{2} > \dfrac{5x}{3} + 2$, $x \in Z$

7. Find x from the euqation $\dfrac{\sqrt{a+x} + \sqrt{a-x}}{\sqrt{a+x} - \sqrt{a-x}} = b$ **[04]**

8. What number must be added to each of the numbers 7, 16, 43, 79 to make them numbers in proportion?

                                                                              [04]

9. If a : b = 6 : 5 and b : c = 4 : 9, find a : c   **[03]**

10. If 3a = 5b = 6c, then find a : b : c   **[04]**

Best of Luck