TARGET MATHEMATICS
THE EXCELLENCE KEY
BY MANISH SAXENA

PLEASURE TEST SERIES - X

TEST – 01 QUADRATIC EQUATION

Time : 1 hr] **[Max Marks 23**

Section A

1 Find the discriminant of quadratic equation $x^2 - 4x + 1 = 0$.

2 If the equation $px^2 + 4x - 3 = 0$ has real roots, then find the value of p.

Section B

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3 If $\frac{1}{2}$ is a root of the equation $x^2 + px - \frac{5}{4} = 0$, then find the value of p.

4 The sum of a number and its reciprocal is $\frac{10}{3}$. Find the number.

5 Find the roots of the quadratic equation $x^2 - 3x - 10 = 0$ by factorization.

Section C

6 Solve for x, $\frac{1}{a+b+x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{x}$

OR

Solve for x; $\frac{4x-3}{2x+1} - 10\left(\frac{2x+1}{4x-3}\right) = 3;\ x \neq -\frac{1}{2}, \frac{3}{4}$

7 Find the value of k, such that the quadratic equation has equal roots $(k-12)x^2 - 2(k-12)x + 2 = 0$

OR

Solve the quadratic equation $9x^2-15x+6=0$ by completing square method.

8 The hypotenuse of a right triangle is 6 m more than twice the shortest side. If the third side is 2 m less than the hypotenuse. Find the sides of the triangle.

Section D

9 Find the roots of the quadratic equation $9x^2-9(a+b)x+\left(2a^2+5ab+2b^2\right)=0$ by applying quadratic formula.

OR

Two pies running together fill a cistern in $3\frac{1}{13}$ minutes. If one pipes takes 3 minutes more than the other to fill the cistern , find the time in which each pipe would fill the cistern.

10 A plane left 30 minutes late than its scheduled time and in order to reach the destination 1500 km away in time, it had

to increase its speed by 250 km/h from the usual speed. Find its usual speed.

OR

A takes 10 days less than the time taken by B to finish a piece of work. If both A and B together can finish the work in 12 days, find time taken by B alone to finish the work