SHREE RADHEY COACHING CENTER

CLASS 10 - MATHEMATICS
Test

Time Allowed: 1 hour   **Maximum Marks: 30**

1. Find the values of a and b so that the polynomials P(x) and Q(x) have $\left(x^2 - x - 12\right)$ as their HCF, where **[3]**

   $P(x) = \left(x^2 - 5x + 4\right)\left(x^2 + 5x + a\right)$
   $Q(x) = \left(x^2 + 5x + 6\right)\left(x^2 - 5x - 2b\right)$

2. Prove that $\sqrt{p} + \sqrt{q}$ is irrational, where p, q are primes. **[3]**

3. If α, β are the zeros of the polynomial $2x^2 - 4x + 5$. find the value of (i) $\alpha^2 + \beta^2$ (ii) $(\alpha - \beta)^2$. **[3]**

4. If x + a is a factor of the polynomial $x^2 + px + q$ and $x^2 + mx + n$ prove that a $= \frac{n-q}{m-p}$. **[3]**

5. Solve the system of linear equations by using the method of elimination by equating the co-efficients: **[3]**

   8x + 5y = 9

   3x + 2y = 4

6. Six years hence a man's age will be three times the age of his son and three years ago he was nine times as old as his son. Find their present ages. **[3]**

7. In a class test, the sum of Shefali's marks in Mathematics and English is 30. Had she got 2 marks more in Mathematics and 3 marks less in English, the product of their marks would have been 210. Find her marks in the two subjects. **[3]**

8. The product of Ramu's age (in years) five years ago with his age (in years) 9 years later is 15. Find Ramu's present age. **[3]**

9. Find the sum of the odd numbers between 0 and 50. **[3]**

10. In the AP, ?, 13, ?, 3 find the missing terms? **[3]**