Reg.No. : ☐☐☐☐☐☐

I.Answer all the questions.

II.Use Blue pen only.

III.Question No 16 is compulsory.

Time : 01:00:00 Hrs   Total Marks : 50

Section-A

5 x 1 = 5

1) If the system $6x - 2y = 3, kx - y = 2$ has a unique solution, then

   (a) k=3   (b) k≠3   (c) k=4   (d) k≠4

2) A system of two linear equations in two variables is inconsistent, if their graphs

   (a) coincide   (b) intersect only at a point   (c) do not intersect at any point   (d) cut the x-axis

3) The system of equations $x - 4y = 8, 3x - 12y = 24$

   (a) has infinitely many solutions   (b) has no solution   (c) has a unique solution   (d) may or may not have a solution

4) If one zero of the polynomial $p(x) = (k + 4)x^2 + 13x + 3k$ is reciprocal of the other, then k is equal to

   (a) 2   (b) 3   (c) 4   (d) 5

5) The sum of two zeros of the polynomial $f(x) = 2x^2 + (p + 3)x + 5$ is zero, then the value of p is

   (a) 3   (b) 4   (c) -3   (d) -4

Section-B

6 x 2 = 12

6) Solve 3x-5y=-16 , 2x+5y=31

7) The cost of 11 pencils and 3 erasers is rs 50 and the cost of 8 pencils and 3 erasers is rs 38. Find the cost of each pencil and each eraser.

8) Solve by elimination method 3x+4y=-25 , 2x-3y=6 .

9) Solve 2x + 7y – 5 = 0 , –3x+ 8y = –11 .

10) Using cross multiplication method, solve 3x + 5y =25 ,7x + 6y = 30.

11) Find the zeros of the quadratic polynomial $x^2 + 9x + 20$, and verify the basic relationships between the zeros and the coefficients.

Section-C

6 x 5 = 30

12) Using elimination method, solve 101x+99y = 499 , 99x+101y = 501.

13) Solve $3(2x + y) = 7xy$, $3(x + 3y) = 11xy$ using elimination method.

14) In a two digit number, the digit in the unit place is twice of the digit in the tenth place. If the digits are reversed, the new number is 27 more than the given number. Find the number.

15) A fraction is such that if the numerator is multiplied by 3 and the denominator is reduced by 3, we get $\frac{18}{11}$, but if the numerator is increased by 8 and the denominator isdoubled, we get $\frac{2}{5}$. Find the fraction.

16) a)   Eight men and twelve boys can finish a piece of work in 10 days while six men and eight boys can finish the same work in 14 days. Find the number of days taken by one man alone to complete the work and also one boy alone to complete the work.

(OR)

   b)   If the quotient on dividing $2x^4 + x^3 - 14^2 - 19x + 6$ by $2x + 1$ is $x^3 + ax^2 - bx - 6$.Find the values of a and b, also the remainder.

****