MM. 25 **Linear equations in two variables** **1 hours**

Section A 1 Mark Each

1. The value of k for which the system of equations 3x + 5y = 0 and kx + 15y = 0 has a non zrero solution is
(A) 0 (B) 2 (C) 9 (D) 8.

2. If $\sqrt{a}\,x - \sqrt{b}\,y = b - a$ and $\sqrt{b}\,x - \sqrt{a}\,y = 0$ then value of x, y is :
(A) a + b (B) a – b (C) $\sqrt{ab}$ (D) $-\sqrt{ab}$

3. If (6,k) is solution of the equation 3x + y – 11 = 0, then the value of k is :
(A) – 7 (B) 4 (C) 3 (D) – 3

4. Rs. 9800 divided among 150 children. If each boys gets Rs.50 and girl gets Rs.100 then the number of boys is
(A) 100 (B) 48 (C) 104 (D) 105

5. If the pair of equation 2x + 3y = 10 and $5x + \frac{15}{2}y = r$ represent two coincident lines. Then the value of r is:
(A) $\frac{-25}{2}$ (B) 25 (C) $\frac{-25}{2}$ (D) $\frac{-5}{2}$

Section B 2 Marks Each

6. For what value of k will the following pair of linear equations have unique solution
3X – 5y = k, 5x + 3y = 15

7. Solve the following pairs of equations: $4x + \frac{6}{y} = 15,\ 3x + \frac{4}{y} = 7,\ y \neq 0$

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Section C 3 Marks Each

8. Solve the following pairs of equations by reducing them to a pair of linear equations:
$6x + 3y = 6xy$ and $2x + 4y = 5xy$

9. On selling a T.V. at 5% gain and a fridge at 10% gain, a shopkeeper gains Rs.2000 but if he sells the T.V at 10% gain and the fridge at 5% loss. He gains Rs.1500 on the transaction. Find the actual price of the T.V and the fridge.

10. Solve graphically and write vertices of triangle formed $x = y$, $x = 4$ and $x + 2y = 10$

11. Find values of r and s for which the system of equations has infinitely many solutions.
$4x + 5y = 2$, $(2r + 7s)x + (r + 8s)y = 2r - s + 1$

Section D 4 Marks Each

12. After covering a distance of 30km with a uniform speed there is some defect in a train engine and therefore its speed is reduced to 4/5 of its original speed. Consequently the train reaches its destination late by 45 minutes. Had it happened after covering 18 kilometers more the train would have reached 9 minutes earlier, find the speed of the train and the distance of journey.