Topic – Linear Equations in two variables

Q. 1 The value of k for which the system of equation $8x + 5y = 9$, $kx + 10y = 15$ has no solution is :

a. 4   b. 8   c. 10   d. 16

Q. 2 For what value of k will the following system of linear equations have an infinite number of solutions: $2x + 3y = 2$; $(k + 2)x + (2k + 1)y = 2(k-1)$?

a. 4   b. 8   c. 10   d. 16

Q. 3 Two places A and B are 120 km apart from each other on a highway. A car starts from A and another from B at the same time. If they move in the same direction, they meet in 6 hours and if they move in the opposite directions, they meet in 1 hour and 12 minutes, the speed of the cars are :

a. 50,50   b. 60,40   c. 45,15   d. none of these

Q. 4 The sum of a two-digit number and the number obtained by reversing the order of the digits is 165. If the difference of digits differs by 3, the number is :

a. 69   b. 96   c. 36   d. 72

Q. 5 For what value of a, the system of linear equations: $ax + 3y = a - 3$; $12x = -ay + a$ has no solution?

a. 6   b. -6   c. ±6   d. 3

Q. 6 Father's age is three times the sum of ages of his two children. After 5 years his age will be twice the sum of age of two children. The age of father is :

a. 42   b. 54   c. 45   d. 52

Q. 7 The sum of the digits of a two-digit number is 12. The number obtained by interchanging the two digits exceeds the given number by 18. The number is :

a. 84   b. 48   c. 57   d. 93

Q. 8 A train travels a distance of 300 km at a uniform speed. If the speed of the train is increased by 5 km an hour, the journey would have taken two hours less. The original speed of the train is :

a. 25   b. 35   c. 45   d. 50

Q. 9 The value(s) of k for which the pair of linear equations $kx + 3y = k - 2$ and $12x = k - y$ has no solution is :

a. – 36   b. 36   c. 12   d. -12

Q. 10 The sum of numerator and denominator of a fraction is 3 less than twice the denominator. If each of the numerator and denominator is decreased by 1, the fraction becomes $\frac{1}{2}$. The fraction is :

a. 4/3   b. 4/5   c. 4/7   d. 5/12

Q. 11 The values of a and b for which the following pair of linear equations has infinitely many solutions are : $2x + 3y = 7$; $(a + b)x + (2a - b)y = 21$.

a. 5, 2   b. 3,7   c. 2,4   d. 5,1

Q. 12 4 men and 6 boys can finish a piece of work in 5 days while 3 men and 4 boys can finish it in 7 days. The time taken by 1 man alone or that by 1 boy alone is :

a. 25, 50   b. 28, 56   c. 30, 36   d. 35,70

Q. 13 A man travels 600 km partly by train and partly by car. It takes 8 hours and 40 minutes if he travels 320 km by train and the rest by car. It would take 30 minutes more if he travels 200 km by train and the rest by car. The speed of the train and the car separately are :

a. 45,75   b. 90,10   c. 60,40   d. 80,60

Q. 14 The sum of digits of a two-digit numbers is 7. If the digits are reversed, the new number decreased by 2 equals twice the original number. The number is :

a. 34   b. 25   c. 61   d. 43

Q. 15 A and B are friends and their ages differ by year. A's father D is twice as old as A and B is twice as old as his sister C. The age of D and C differ by 40 years. The ages of A and B are :

a. 26,24   b. 20,22   c. 32,33   d. 18,20

Q. 16 2 tables and 3 chairs together cost Rs. 3500 whereas 3 tables and 2 chairs together cost Rs. 4000. The cost of a table and a chair are :

a. 500, 1500   b. 500,100   c. 400, 800   d. 550,950

Q. 17 The area of a rectangle reduces by 160 m^2 if its length is increased by 5 m and breadth is reduced by 4 m. However, if length is decreased by 10 m and breadth is increased by 2 m, then its area is decreased by 100 m^2. The dimensions of the rectangle are :

a. 40,40   b. 60,20   c. 50,30   d. 45,65

Q. 18 At a certain time in a zoo, the number of heads and the number of legs of tiger and peacocks were counted and it was found that there were 47 heads and 152 legs. The number of tigers and peacocks in the zoo are :

a. 29,18   b. 25,34   c. 20,32   d. none of these

Q. 19 A and B each have certain number of oranges. A says to B, "If you give me 10 of your oranges, I will have twice the number of oranges left with you". B replies, "If you give me 10 of your oranges, I will have the same number of oranges as left with you". The number of oranges with A and B separately are :

a. 40,60   b. 70,60   c. 40, 50   d. 70,50

Q. 20 The sum of the numerator and the denominator of a fraction is 4 more than twice the numerator. If 3 is added to each of the numerator and denominator, their ratio becomes 2 : 3. The fraction is :

a. 4/9   b. 7/12   c. 5/9   d. 12/25