



SUCCESS KEY TEST SERIES

X (English)

(Unit Test-1 Math-1 (ch-1,2))

Mathematics Part - I-

DATE:

TIME: 2 hrs

MARKS: 30

SEAT NO:

--	--	--	--	--	--	--	--

Q.1 (A) Choose the correct alternative.

(5)

- Factorisation of $x^2 - 4x - 12$ is
a. $(x + 6)(x - 2)$ b. $(x - 6)(x + 2)$ c. $(x - 6)(x - 2)$ d. $(x + 6)(x + 2)$
- Out of the following equations, find the equation having the sum of its roots -5.
a. $3x^2 - 15x + 3 = 0$ b. $x^2 - 5x + 3 = 0$ c. $x^2 + 3x - 5 = 0$ d. $3x^2 + 15x + 3 = 0$
- If the roots of $x^2 + kx + k = 0$ are real and equal, what is the value of k?
a. 0 b. 4 c. 0 or 4 d. 2
- To solve $x + y = 3$; $3x - 2y - 4 = 0$ by determinant method find D.
a. 5 b. 1 c. -5 d. -1
- If -3 is a root of the quadratic equation $kx^2 + 2x - 3 = 0$, then the value of k is
a. 1 b. -1 c. $\frac{1}{9}$ d. $-\frac{1}{9}$

B) Solve the following questions. (Any Two)

(4)

- Find the values of each of the following determinants.

$$\begin{vmatrix} 5 & -2 \\ -3 & 1 \end{vmatrix}$$

- Is the following a quadratic equation? $y^2 = 5y - 10$
- Write the following equations in the form $ax^2 + bx + c = 0$, then write the values of a, b, c for equation. $x^2 - 9 = 13$

Q.2 A) Complete the following Activities. (Any Two)

(4)

- Solve : $x^2 + 8x - 48 = 0$

By Completing the square.

$$\begin{aligned} x^2 + 8x - 48 &= 0 \\ \therefore x^2 + 8x + 16 - 16 - 48 &= 0 \\ \therefore \underline{\hspace{2cm}}^2 - 64 &= 0 \\ \therefore (x + 4)^2 &= 64 \\ \therefore x + 4 &= \underline{\hspace{2cm}} \text{ or } x + 4 = \underline{\hspace{2cm}} \\ \therefore x &= \underline{\hspace{2cm}} \text{ or } x = \underline{\hspace{2cm}} \end{aligned}$$

- Fill in the blanks with correct number

$$\begin{vmatrix} 3 & 2 \\ 4 & 5 \end{vmatrix} = 3 \times \underline{\hspace{2cm}} - \underline{\hspace{2cm}} \times 4$$

$$= \underline{\hspace{2cm}} - 8$$

$$= \underline{\hspace{2cm}}$$

3) If $3x + 5y = 6$ and $5x + 3y = 26$, find $(x-y)$.

$$3x + 5y = 6 \quad \dots (1)$$

$$5x + 3y = 26 \quad \dots (2)$$

$\underline{\hspace{2cm}}$ equation (1) from equation (2).

$$5x + 3y = 26 \quad \dots (2)$$

$$3x - 5y = 06 \quad \dots (1)$$

$$\begin{array}{r} - \quad + \quad - \\ \hline 2x \quad -2y = 20 \end{array}$$

$$\therefore \underline{\hspace{2cm}} = 10 \quad \dots \text{(Dividing both the side by } \underline{\hspace{2cm}} \text{)}$$

B) Solve the following questions. (Any Two) (4)

1) If one root of the quadratic equation $2x^2 + kx - 2 = 0$ is -2 then find the value of k .

2) Solve the following simultaneous equations.

$$5m - 3n = 19 ; m - 6n = -7$$

3) Solve the following simultaneous equations.

$$5x + 2y = -3 ; x + 5y = 4$$

Q.3 Solve the following questions. (Any Two) (6)

1) Solve the following simultaneous equations using Cramer's method.

$$4m + 6n = 54 ; 3m + 2n = 28$$

2) The amount with Mukund is Rs. 50 more than amount with Sagar. The product of the amount is 15000, then find the amounts with each of them.

3) Solve the following simultaneous equations.

$$99x + 101y = 499 ; 101x + 99y = 501$$

Q.4 Solve the following questions. (Any one) (4)

1) Kantabai bought $1\frac{1}{2}$ kg tea and 5kg sugar from a shop. She paid Rs. 50 as return fare for rickshaw. Total expense was Rs. 700. Then she realised that by ordering online the goods can be bought with free home delivery at the same price. So next month she placed the order online for 2 kg tea and 7kg sugar. She paid Rs. 880 for that. Find the rate of sugar and tea per kg.

2) A boat takes 8 hours to travel 30 km upstream and 36 km downstream; but it takes 10 hours to travel 36 km upstream and 48 km downstream. Find the speed of the boat in still water and the speed of the stream.

Q.5 Solve the following questions. (Any one) (3)

1) Solve using formula.

$$5m^2 - 4m - 2 = 0$$

2) Draw the graph of $x + y = 6$ which intersects the X-axis and the Y-axis at A and B respectively.