



- |   |     |   |     |
|---|-----|---|-----|
| ◆ | 1:2 | ◆ | 2:5 |
| ◆ | 3:2 | ◆ | 3:4 |

x. If selling price of a chair is Rs.700 and profit is Rs.250, then cost price of chair is:

- |   |         |   |        |
|---|---------|---|--------|
| ◆ | Rs. 950 | ◆ | Rs.450 |
| ◆ | Rs.400  | ◆ | Rs.500 |

xi. The ratio of 1.5 feet to 30 inches is:

- |   |     |   |      |
|---|-----|---|------|
| ◆ | 3:5 | ◆ | 1:10 |
| ◆ | 1:2 | ◆ | 2:5  |

xii. If  $x:6 = 6:x$ , then  $x=$ :

- |   |   |   |         |
|---|---|---|---------|
| ◆ | 9 | ◆ | -6      |
| ◆ | 8 | ◆ | $\pm 6$ |

xiii. If simple interest on Rs. 5000 is Rs.100, then accumulated amount is Rs.:

- |   |      |   |      |
|---|------|---|------|
| ◆ | 5500 | ◆ | 4900 |
| ◆ | 5100 | ◆ | 1500 |

xiv.  $A \times A^{-1} =$ :

- |   |             |   |     |
|---|-------------|---|-----|
| ◆ | $A^{-1}$    | ◆ | $A$ |
| ◆ | Null matrix | ◆ | $I$ |

xv. When a series of equal amount is made at equal intervals, each payment is known as:

- |   |          |   |                  |
|---|----------|---|------------------|
| ◆ | Annuity  | ◆ | Principal amount |
| ◆ | Interest | ◆ | Investment       |

xvi. The slope of x-axis is :

- |   |   |   |   |
|---|---|---|---|
| ◆ | 2 | ◆ | 3 |
| ◆ | 5 | ◆ | 0 |

xvii. The y-intercept of the line  $2y = x$  is

- |   |       |   |   |
|---|-------|---|---|
| ◆ | $1/2$ | ◆ | 2 |
| ◆ | 0     | ◆ | 1 |

xviii. The turning point of parabola is called:

- |   |        |   |         |
|---|--------|---|---------|
| ◆ | Ratio  | ◆ | Roots   |
| ◆ | Vertex | ◆ | Average |

- xix. The x-intercept and y-intercept of the equation  $\frac{x}{3} - \frac{y}{9} = 1$  are:
- |   |          |   |             |
|---|----------|---|-------------|
| ◆ | 3 and 9  | ◆ | -3 and 9    |
| ◆ | 3 and -9 | ◆ | 1/3 and 1/9 |
- xx. If the number of rows and columns of a matrix are equal then the matrix is called:
- |   |             |   |                    |
|---|-------------|---|--------------------|
| ◆ | Null matrix | ◆ | Square matrix      |
| ◆ | Unit matrix | ◆ | Rectangular matrix |
- xxi. The simple interest of Rs. 6000 for 3 years at 10% per year is Rs.
- |   |      |   |      |
|---|------|---|------|
| ◆ | 1000 | ◆ | 600  |
| ◆ | 180  | ◆ | 1800 |
- xxii. The parabola  $y = 3x^2 + 2x + 24$  opens:
- |   |               |   |              |
|---|---------------|---|--------------|
| ◆ | towards right | ◆ | towards left |
| ◆ | downward      | ◆ | upward       |
- xxiii. A matrix whose inverse does not exist is known as:
- |   |             |   |                 |
|---|-------------|---|-----------------|
| ◆ | Null matrix | ◆ | Square matrix   |
| ◆ | Unit matrix | ◆ | Singular matrix |
- xxiv. The ordered pair  $(-3, 4)$  is located on the quadrant:
- |   |       |   |        |
|---|-------|---|--------|
| ◆ | First | ◆ | Second |
| ◆ | Third | ◆ | Fourth |
- xxv. The graph of a quadratic equation is a:
- |   |               |   |           |
|---|---------------|---|-----------|
| ◆ | Straight line | ◆ | Curve     |
| ◆ | Circle        | ◆ | Rectangle |

**Time: 50 Minutes**

**Max. Marks: 25**

**SECTION 'B' (SHORT-ANSWER QUESTIONS)** (15 Marks)

- Q2.** Answer any three part question. All questions carry equal marks.
- (i) If 16 men paint 8 houses in 7 days. How many houses can 5 men paint in 14 days?
- (ii) Perform the following binary operations:
- (a)  $1011 + 1001 - 111$       (b)  $1001 \times 101$
- (iii) Find the compound interest and accumulate amount on Rs.60000 for 5 years at 7% per annum compounded quarterly.

(iv) Find the inverse of the matrix  $A = \begin{bmatrix} 2 & -8 \\ 3 & 6 \end{bmatrix}$

OR

- (a) Convert the binary number  $1011_2$  to its equivalent decimal number.  
(b) Convert the decimal number 56 to the equivalent binary number.

(v) Find the equation of straight line passes through the point (2, 3) with slope=4. Also find x-intercept and y-intercept.

**SECTION 'C' DETAILED –ANSWER QUESTIONS** (10 Marks)

Answer any one question from this section. All questions carry equal marks.

- Q3.** (a) Solve the equation:  $\frac{-2}{2x+1} - \frac{4}{2x-1} = 5$   
(b) Solve the following simultaneous equations by Cramer's Rule.  
 $x + 2y = 6$ ,  $2x + 7y = 3$
- Q4.** (a) For the equation  $x^2 - 5x + 6 = 0$ , find the vertex and roots of the parabola.  
(b) Distribute Rs. 120000 among three partners A, B and C such that A:B = 1:2 and B:C = 3:1.

