

KIRTI TUTORIALS

Mathematics By Shivankar Gupta Ph No. 9410407427

XI, XII, A.I.E.E.E, I.I.T., UPTECH.

Test- Adjoint Inverse & S.S.L.E.

Time: 1 hour

M.M.

1 marks questions

1. If $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, then find $\text{adj}A$.
2. For what value of k , the matrix $\begin{bmatrix} k & 2 \\ 3 & 4 \end{bmatrix}$ has no inverse.
3. If A is a non-singular matrix such that $A^{-1} = \begin{bmatrix} 5 & 3 \\ -2 & -1 \end{bmatrix}$, then write the value $(A^T)^{-1}$
4. If A is a square matrix of order 3 such that $|A|=5$, write the value of $|\text{adj}A|$

4 mark question

5. Find the matrix P satisfying the matrix equation $\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix} P \begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 2 & -1 \end{bmatrix}$

6 marks questions (Do any three)

5. Using matrices solve the following system of linear equation:
 $x + y + z = 4$, $2x + y - 3z = -9$, $2x - y + z = -1$
6. Using elementary transformation, find the inverse of the following matrix:

$$\begin{bmatrix} 2 & 5 & 3 \\ 3 & 4 & 1 \\ 1 & 6 & 3 \end{bmatrix}$$
7. Find A^{-1} if $A = \begin{bmatrix} -1 & 2 & 5 \\ 2 & -3 & 1 \\ -1 & 1 & 1 \end{bmatrix}$. Hence solve the system of linear equations
 $-x + 2y + 5z = 2$, $2x - 3y + z = 15$, $-x + y + z = -3$

8. Given $A = \begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$, $B = \begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix}$, find AB and use this result in solving

the following system of equation $x - y + z = 4$: $x - 2y - 2z = 9$: $2x + y + 3z = 1$

Coaching :- 85, Saket Colony Agra, Residence :- 14, Hanuman Nagar Shahganj Agra