

Circle the correct answer

1 Which is order of a square matrix? 09301203

- (a) 2-by-2 (b) 1-by-2
 (c) 2-by-1 (d) 3-by-2:

2 The matrix $B = \begin{bmatrix} 1 & 2 & 3 \\ -1 & 0 & -2 \\ 0 & 1 & 3 \end{bmatrix}$ is a ___ matrix.

- (a) Rectangular (b) Square
 (c) Row (d) Column

3 If A is a matrix then its transpose is denoted by:

- (a) A^{-1} (b) A^t
 (c) $-A$ (d) $(A^t)^t$

4 The matrix $A = \begin{bmatrix} 2 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$ is a ___ matrix.

- (a) Diagonal (b) Scalar
 (c) Identity (d) Zero

5 $(AB)^{-1} = \underline{\hspace{2cm}}$

- (a) $A^{-1} B^{-1}$ (b) $B^{-1} A^{-1}$
 (c) BA (d) AB

6 A square matrix A is called non-singular if:

- (a) $|A| = 0$ (b) $A = 0$
 (c) $|A| \neq 0$ (d) $A^t = 0$

Short Answers	
1	Define rectangular matrix.
2	Find negative of matrix $D = \begin{bmatrix} -3 & 2 \\ -4 & 5 \end{bmatrix}$,
3	If $B = \begin{bmatrix} 1 & 1 \\ -2 & 3 \end{bmatrix}$. Then find $ B $
4	Define singular and non-singular matrix.
5	If $A = \begin{bmatrix} 2 & 1 \\ -1 & -3 \end{bmatrix}$ then find A^{-1}
6	Determine whether the given matrices are multiplicative inverses of each other. (i) $\begin{bmatrix} 3 & 5 \\ 4 & 7 \end{bmatrix}$ and $\begin{bmatrix} 7 & -5 \\ -4 & 3 \end{bmatrix}$
7	Find the values of a, b, c and d which satisfy the matrix equation. 09301008 $\begin{bmatrix} a+c & a+2b \\ c-1 & 4d-6 \end{bmatrix} = \begin{bmatrix} 0 & -7 \\ 3 & 2d \end{bmatrix}$

Long Questions	
1	If $2 \begin{bmatrix} 2 & 4 \\ -3 & a \end{bmatrix} + 3 \begin{bmatrix} 1 & b \\ 8 & -4 \end{bmatrix} = \begin{bmatrix} 7 & 10 \\ 18 & 1 \end{bmatrix}$ then find a and b.
2	Use matrices, if possible, to solve the following systems of linear equations by: (i) the matrix inverse method : $3x - 2y = 6$ $5x - 2y = -10$