



## CLASS- XII(NON-MED)

### ASSIGNMENT- 7 (MATHS)

#### CH-3 (MATRICES AND DETERMINANTS)

#### ❖ 1 MARK QUESTION:

1. The matrix  $\begin{bmatrix} 0 & -5 & 8 \\ 5 & 0 & 12 \\ -8 & -12 & 0 \end{bmatrix}$  is a

(A) diagonal matrix

(B) symmetric matrix

(C) skew symmetric matrix

(D) scalar matrix

2. If A and B are matrices of same order, then  $(AB' - BA')$  is a

(A) skew symmetric matrix

(B) null matrix

(C) symmetric matrix

(D) unit matrix

3. For any two matrices A and B, we have

(A)  $AB = BA$

(B)  $AB \neq BA$

(C)  $AB = 0$

(D) None of the above

4. If A and B are symmetric matrices of same order,  $AB - BA$  is a:

(A) Skew-symmetric matrix

(B) Symmetric matrix

(C) Zero matrix

(D) Identity matrix

5. Fill in the blanks:

i) \_\_\_\_\_ matrix is both symmetric and skew-symmetric matrix.

ii) Sum of two skew-symmetric matrices is always \_\_\_\_\_ matrix.

iii) The negative of a matrix is obtained by multiplying it by \_\_\_\_\_.

iv) A matrix which is not a square matrix is called a \_\_\_\_\_ matrix.

#### ❖ 2 MARKS QUESTION:

6. Find the values of x,y and z and from the following equations:

$$\text{i) } \begin{bmatrix} 4 & 3 \\ x & 5 \end{bmatrix} = \begin{bmatrix} y & z \\ 1 & 5 \end{bmatrix}$$

$$\text{ii) } \begin{bmatrix} x+y & 2 \\ 5+z & xy \end{bmatrix} = \begin{bmatrix} 6 & 2 \\ 5 & 8 \end{bmatrix}$$

7. Construct a 3 x 4 matrix, whose elements are given by:

$$\text{i) } a_{ij} = \frac{1}{2} |-3i + j|$$

$$\text{ii) } a_{ij} = 2i - j$$

8. Find the values of a, b, c and d from the equation:

$$\begin{bmatrix} a-b & 2a+c \\ 2a-b & 3c+d \end{bmatrix} = \begin{bmatrix} -1 & 5 \\ 0 & 13 \end{bmatrix}$$

9. Find the transpose of each of the following matrices:

$$\text{i) } \begin{bmatrix} 5 \\ \frac{1}{2} \\ -1 \end{bmatrix}$$

$$\text{ii) } \begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}$$

$$\text{iii) } \begin{bmatrix} -1 & 5 & 6 \\ 3 & -5 & 6 \\ -2 & 3 & 1 \end{bmatrix}$$

10. Compute the following:

$$\begin{bmatrix} \cos^2 x & \sin^2 x \\ \sin^2 x & \cos^2 x \end{bmatrix} + \begin{bmatrix} \sin^2 x & \cos^2 x \\ \cos^2 x & \sin^2 x \end{bmatrix}$$

11. Evaluate:

$$\text{i) } \begin{bmatrix} 2 & 3 & 4 \\ 3 & 4 & 5 \\ 4 & 5 & 6 \end{bmatrix} \begin{bmatrix} 1 & -3 & 5 \\ 0 & 2 & 4 \\ 3 & 0 & 5 \end{bmatrix}$$

$$\text{ii) } \begin{bmatrix} 2 & 1 \\ 3 & 2 \\ -1 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 & 1 \\ -1 & 2 & 1 \end{bmatrix}$$

### ❖ 4 MARKS QUESTION:

12. Using the elementary transformations, find the inverse of the following:

$$\text{i) } \begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}$$

$$\text{ii) } \begin{bmatrix} 1 & 3 \\ 2 & 7 \end{bmatrix}$$

$$\text{iii) } \begin{bmatrix} 2 & -3 & 3 \\ 2 & 2 & 3 \\ 3 & -2 & 2 \end{bmatrix}$$

$$\text{iv) } \begin{bmatrix} 2 & 0 & -1 \\ 5 & 1 & 0 \\ 0 & 1 & 3 \end{bmatrix}$$

❖ **SOURCES** – Please refer iDream learning mobile app.

