Topic: Matrices   Marks : 25

1.   Matrix is _____ arrangement.
        (a) order   **(b)** Square

        (c) rectangular   **(d)** none of these

2.   **Matrix** A of order is 1 x 1 then A is _____.
        (a) row matrix   **(b)** Column matrix

        (c) Square Matrix   **(d)** All of these

3.   Addition of two matrix is possible if their _____ same.
        (a) rows   **(b)** Columns

        (c) orders   **(d)** None of these

4.   Two matrices are said to be equal if their _____ and _____ elements are same.
        (a) orders, values   **(b)** Orders and corresponding

        (c) orders, order   **(d)** None of these

5.   Product of two matrices is possible there are same.
        (a) orders   **(b)** elements

        (c) no. of row 2nd in matrix = no of column in 1nd matrix   **(d)** All of these

6.   A is square matrix contain **n** elements then number of elements in matrix A is ..
        (a) n   **(b)** 2n   **(c)** n+1   **(d)** n^2

7.   Find order of $\begin{bmatrix} 2 \\ 2 \end{bmatrix}$

        (a) 2 x 2   **(b)** 1 x 2   **(c)** 2 x1   **(d)** 1x1

8.   Given $\begin{bmatrix} 2 & 1 \\ -3 & 4 \end{bmatrix} X = \begin{bmatrix} 7 \\ 6 \end{bmatrix}$. Write**:**
            (i)   the order of the matrix X
        (a) 2 x 2   **(b)** 1 x 2   **(c)** 2 x1   **(d)** 1x1

            (ii) matrix X = ?

        (a) $\begin{bmatrix} 2 \\ 2 \end{bmatrix}$ **(b)** $\begin{bmatrix} 3 \\ 2 \end{bmatrix}$ **(c)** $\begin{bmatrix} 2 \\ 2 \end{bmatrix}$ **(d)** $\begin{bmatrix} 2 \\ 3 \end{bmatrix}$

9. $\begin{bmatrix} x & 3x \\ y & 4y \end{bmatrix}\begin{bmatrix} 2 \\ 1 \end{bmatrix} \neq \begin{bmatrix} 5 \\ 12 \end{bmatrix}$ x = ? , y = ?
        (a) | x =0, y = 1   **(b)** x =1, y =2   **(c)** x = 2, y =1   **(d)** x =1, y=1

Answer Q 10 to 12 using following Matrices

$$A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix} \text{ and } I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix},$$

10. order of AI

    (a) 2 x 2   **(b) 1x1**   **(c)** 1 x 2   **(d)** 2x1

11.   AI = ?

(a) $\begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ (b) $\begin{bmatrix} 3 & 1 \\ -1 & -2 \end{bmatrix}$ (c) $\begin{bmatrix} -3 & 1 \\ -1 & 2 \end{bmatrix}$ (d) $\begin{bmatrix} 3 & -1 \\ -1 & 2 \end{bmatrix}$

12.   AI + IA = ?

(a) $-2\begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ (b) $2\begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ (c) $-\begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ (d) $\begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$

13. Find 3A- 3B where

$A = \begin{bmatrix} 1 & 4 \\ 2 & 3 \end{bmatrix} \text{ and } B = \begin{bmatrix} -4 & -1 \\ -3 & -2 \end{bmatrix}$

(a) $\begin{pmatrix} 5 & -5 \\ 5 & -5 \end{pmatrix}$ (b) $3\begin{pmatrix} -5 & -5 \\ 5 & 5 \end{pmatrix}$ (c) $3\begin{pmatrix} 5 & -5 \\ 5 & -5 \end{pmatrix}$ (d) $15\begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix}$

14.   If $\begin{bmatrix} 1 & 4 \\ -2 & 3 \end{bmatrix} + 2M = 3\begin{bmatrix} 2 & 3 \\ -1 & 0 \end{bmatrix}$, M =?

a) $\begin{pmatrix} 5 & -5 \\ -1 & -5 \end{pmatrix}$ (b) $1/2\begin{pmatrix} 5 & 5 \\ -1 & 5 \end{pmatrix}$ (c) $1/2\begin{pmatrix} 5 & -5 \\ -1 & -3 \end{pmatrix}$ (d) $\begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix}$

Answer Q 15 to 17 using following Matrices

Given matrix A = $\begin{bmatrix} 4\sin 30° & \cos 0° \\ \cos 0° & 4\sin 30° \end{bmatrix}$ and B = $\begin{bmatrix} 4 \\ 5 \end{bmatrix}$. If AX= B.

15. Find Matrix A

a) $\begin{bmatrix} 4 & 0 \\ 0 & 4 \end{bmatrix}$ b) $\begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$ c) $\begin{bmatrix} 2 & -1 \\ 0 & 2 \end{bmatrix}$ d) $\begin{bmatrix} 2 & 1 \\ 1 & 2 \end{bmatrix}$

16. Find AB

a) $\begin{bmatrix} 13 \\ 14 \end{bmatrix}$ b) $\begin{bmatrix} 5 \\ 4 \end{bmatrix}$ c) $\begin{bmatrix} 14 \\ 13 \end{bmatrix}$ d) $\begin{bmatrix} 3 \\ 4 \end{bmatrix}$

17. AB is a diagonal matrix

    (a) True   (b) False

Answer Q 18 to 20 using following Matrices

2

Given A = $\begin{bmatrix} 2 & 0 \\ -1 & 7 \end{bmatrix}$ and I = $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ and A² = 9A + ml. Find m

18. Find A²

(a) $\begin{bmatrix} 4 & 0 \\ -9 & 49 \end{bmatrix}$ b) $\begin{bmatrix} -4 & 0 \\ -1 & 2 \end{bmatrix}$ c) $\begin{bmatrix} 4 & -1 \\ 0 & 2 \end{bmatrix}$ d) $\begin{bmatrix} 4 & 1 \\ 1 & 49 \end{bmatrix}$

19. 9A = ?

(a) $\begin{bmatrix} 18 & 0 \\ -9 & -63 \end{bmatrix}$ b) $\begin{bmatrix} 18 & 0 \\ -1 & 63 \end{bmatrix}$ c) $\begin{bmatrix} 18 & 0 \\ -9 & 63 \end{bmatrix}$ d) $\begin{bmatrix} -18 & 1 \\ 1 & 49 \end{bmatrix}$

20. M = ?

(a) 14   (b) -14   (c) 9   (d) 28

21. $\begin{bmatrix} 3 & 7 \\ 2 & 4 \end{bmatrix}\begin{bmatrix} 0 & 2 \\ 5 & 3 \end{bmatrix} + 2x = \begin{bmatrix} 1 & -5 \\ -4 & 6 \end{bmatrix}$, **x =**

(a) $\begin{bmatrix} 18 & -16 \\ -9 & -6 \end{bmatrix}$ b) $\begin{bmatrix} -17 & -16 \\ -12 & -5 \end{bmatrix}$ c) $\begin{bmatrix} 17 & 16 \\ 9 & 3 \end{bmatrix}$ d) $\begin{bmatrix} -17 & 16 \\ 12 & 9 \end{bmatrix}$

22. $A = \begin{bmatrix} 1 & 1 \\ 8 & 3 \end{bmatrix}$, $A^2 - 4A.$ = ?

(a) 5I   b) $\begin{bmatrix} 5 & 0 \\ 0 & 5 \end{bmatrix}$ c) a & b both   d) None of these

23. Order of Matrix A is 2 x 2 whaerr A = aij and aij = 2i + j, find matrix A

(a) $\begin{bmatrix} 3 & 6 \\ 4 & 5 \end{bmatrix}$ b) $\begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix}$ c) $\begin{bmatrix} 6 & 4 \\ 5 & 3 \end{bmatrix}$ d) $\begin{bmatrix} 3 & 5 \\ 4 & 6 \end{bmatrix}$

24. Find AB for given square matrix

$A = \begin{bmatrix} 0 & -1 \\ 4 & -3 \end{bmatrix}$, $B = \begin{bmatrix} -5 \\ 6 \end{bmatrix}$

a) $\begin{bmatrix} 6 \\ 38 \end{bmatrix}$ b) $\begin{bmatrix} -6 \\ 38 \end{bmatrix}$ c) $\begin{bmatrix} 11 \\ -38 \end{bmatrix}$ d) $\begin{bmatrix} -6 \\ -38 \end{bmatrix}$

25. $\begin{bmatrix} 4\sin 30° & 2\cos 60° \\ \sin 90° & 2\cos 0° \end{bmatrix}\begin{bmatrix} 4 & 5 \\ 5 & 4 \end{bmatrix}$ = ?

(a) $\begin{bmatrix} 2 & 1 \\ 1 & 2 \end{bmatrix}$ b) $\begin{bmatrix} 4 & 5 \\ 5 & 4 \end{bmatrix}$ c) $\begin{bmatrix} 13 & 14 \\ 14 & 13 \end{bmatrix}$ d) $\begin{bmatrix} -13 & 1 \\ 1 & 13 \end{bmatrix}$

1	A	2	D	3	C	4	B	5	C
6	D	7	C	8	A,A	9	B	10	A
11	A	12	B	13	D	14	C	15	B
16	A	17	B	18	A	19	C	20	B
21	B	22	C	23		24	D	25	C