MATRICES

1. If $A=\begin{pmatrix}4 & 3\\ -2 & 1\end{pmatrix}$ then $|A|$=_____ (March 09)
2. If $\begin{pmatrix}4 & -3\\ 2 & 32\end{pmatrix}=\begin{pmatrix}4 & -3\\ 2 & 2^t\end{pmatrix}$ then t = _____
3. If $\begin{pmatrix}x & 3\\ 1 & 2\end{pmatrix}\begin{pmatrix}2\\ -1\end{pmatrix}=\begin{pmatrix}5\\ 0\end{pmatrix}$ then the value of 'x' is _____
4. $\begin{vmatrix}\text{Tan}\theta & \sec\theta\\ \sec\theta & \text{Tan}\theta\end{vmatrix}$ = _____
5. If $|A| = 0$ then the matrix has _____
6. The mathematician who introduced matrices is _____ (June 2006)
7. A,B are two matrices $(AB)^T$ = _____
8. The condition to multiply two matrices A,B is _____
9. $M\times\begin{pmatrix}2 & 3\\ 0 & 1\end{pmatrix}=(6 \quad 10)$ then order of M = ____
10. If $A=\begin{pmatrix}x & 3\\ 3 & x\end{pmatrix}$ has no multiplicative inverse then x = _____
11. If the transpose of a given matrix is equal to its additive inverse, then the matrix is called _____
12. Matrix obtained by interchanging rows and columns is called _____ (March 2009)
13. If the rows and columns of a matrix are same, then it is called _____ (March 09)
14. If $\begin{pmatrix}a & 5\\ 8 & b\end{pmatrix}-\begin{pmatrix}4 & 6\\ 7 & 2\end{pmatrix}=\begin{pmatrix}2 & -1\\ 1 & 5\end{pmatrix}$ then a and b are _____
15. If $\begin{pmatrix}1 & 3\\ 0 & 1\end{pmatrix}\begin{pmatrix}2\\ -1\end{pmatrix}=\begin{pmatrix}x\\ -1\end{pmatrix}$ then x = _____
16. If $\begin{vmatrix}2 & -4\\ d & 5\end{vmatrix}=14$ then d = _____
17. $A=\begin{pmatrix}1 & 2 & 3\\ 3 & 0 & 1\end{pmatrix}_{2\times3}$; $B=\begin{pmatrix}1 & 0\\ 0 & 1\end{pmatrix}_{2\times2}$
    then AB = _____
18. If $P=\begin{pmatrix}3 & 0\\ 0 & \lambda\end{pmatrix}$ is to be scalar matrix then λ = _____
19. If A and B are two matrices then $(AB)^{-1}$ = _____
20. If $A=\begin{pmatrix}a & b\\ c & d\end{pmatrix}$ and ad = bc then A is _____ matrix
21. If $A=\begin{pmatrix}1 & -2\\ -3 & 4\end{pmatrix}$ and AD = A then D is _____ Matrix
22. If $A_{2\times3}$, $B_{3\times2}$ then the order of A×B is _____
23. If AB = KI, where $K \in R$, then A^{-1} = _____
24. If A is a matrix then $(A^T)^T$ =_____
25. If $\begin{pmatrix}a & b\\ c & d\end{pmatrix}=\begin{pmatrix}1 & 2\\ 3 & -1\end{pmatrix}$ then a+b+c+d = _____ (June 2005)
26. The order of A is 3 × 2 then the order of A^T is _____
27. $\begin{pmatrix}4 & 0 & 0\\ 0 & 4 & 0\\ 0 & 0 & 4\end{pmatrix}$ is example of _____
28. $\begin{pmatrix}2\\ 3\\ 4\end{pmatrix}_{3\times1}(1 \quad 2 \quad 3)_{1\times3}$ = _____
29. If A is matrix then $A.A^{-1}=A^{-1}$. A= _____
30. Number of rows in a Row matrix _____
31. The order of A and B are 3×4 and 5×3 then the order of BA is _____
32. If A is 2 × 2 matrix such that $A=A^{-1}$ then A^2 = _____ (June 2009)
33. A is any 2 × 2 matrix. if $B=\begin{pmatrix}1 & 0\\ 0 & 1\end{pmatrix}$ then AB = _____ (June 2009)
34. The Inverse of an identity matrix is _____ (March 2009)
35. If $A=\begin{pmatrix}1 & 4\\ 0 & -1\end{pmatrix}$ then A^{-1}= ____ (March 08)

36. If $\begin{pmatrix} x+y & x-y \\ 2x+3y & 2x-3y \end{pmatrix} = \begin{pmatrix} 2 & 0 \\ 5 & -1 \end{pmatrix}$ then x = _____ (March 2008)

37. In a Matrix $\begin{pmatrix} 1 & 8 & 4 \\ 2 & 3 & 0 \\ 5 & 7 & -4 \end{pmatrix}$ the element in 2nd row and 3rd column is_____(June 07)

38. $A = \begin{pmatrix} x \\ y \end{pmatrix}_{2\times1}$, $B = (5 \quad 2)_{1\times2}$, then AB = _____ (June 2007)

39. While solving the equations 3x+4y = 8 and x – 6y = 10 by Cramer's method then the matrix B_1 =_____

40. The determinant of a singular matrix is _____

41. If $A = \begin{pmatrix} 5 & 7 \\ 0 & 8 \end{pmatrix}$ and A+B = A then B is _____ matrix

42. If $P = \begin{pmatrix} 4 & -5 \\ 7 & -6 \end{pmatrix}$ and P+R=I then R= _____

43. If $A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}, B = \begin{pmatrix} 2 & 4 \\ 3 & 5 \end{pmatrix}$ and A–B+X=0 then the Matrix X is _____

44. In a Matrix the number of rows are not equal to number of columns then the matrix is _____

45. A square matrix in which each of the principal diagonal elements are equal to one and all other elements are zero is called a _____ matrix

46. If the transpose of a given matrix is equal to its additive inverse that matrix is called _____

KEY

1. 10
2. 5
3. 4
4. –1
5. has no multiplicative inverse
6. Author Cayley
7. $B^T.A^T$
8. No.of Columns in A = Rows in B
9. (1×2)
10. ±3
11. Skew symmetric
12. Transpose of matrix
13. Square matrix
14. 6,7
15. –1
16. 1
17. is not defined
18. 3
19. $B^{-1}.A^{-1}$
20. Singular matrix
21. Identity matrix
22. 2 × 2
23. $\frac{1}{K}B$.
24. A
25. 5
26. 2 × 3
27. 3 × 3 scalar matrix
28. $\begin{pmatrix} 2 & 4 & 6 \\ 3 & 6 & 9 \\ 4 & 8 & 12 \end{pmatrix}$
29. I
30. l
31. 5 × 4
32. I
33. A
34. also identity matrix

35. $\begin{pmatrix}1 & 4\\ 0 & -1\end{pmatrix}$ (or) A

36. 1

37. 0

38. $\begin{pmatrix}5x & 2x\\ 5y & 2y\end{pmatrix}$

39. $\begin{pmatrix}8 & 4\\ 10 & -6\end{pmatrix}$

40. zero

41. null

42. $\begin{pmatrix}-3 & 5\\ -7 & 7\end{pmatrix}$ 43. $\begin{pmatrix}1 & 2\\ 0 & 1\end{pmatrix}$

44. Rectangle matrix

45. Identity matrix

46. Skew symmetric matrix

Important Questions

4 Marks

1. If $A=\begin{pmatrix}-2 & 1\\ 3 & -1\end{pmatrix}, B=\begin{pmatrix}2 & 0\\ 5 & -3\end{pmatrix}$?
   find 1) A^{-1} 2) B^{-1} 3) $(AB)^{-1}$ 4) $B^{-1}A^{-1}$?
2. Solve the following linear system of equations using cramers method 4x–y=16 and $\frac{3x-7}{2}=y$?
3. Solve the following equations by using Matrix inversion method $x=\frac{7-3y}{2}$ and y = 13 – 6x?
4. If $A=\begin{pmatrix}a & b\\ c & d\end{pmatrix}$ and $I=\begin{pmatrix}1 & 0\\ 0 & 1\end{pmatrix}$ show that A^2 – (a+d) A= (bc-ad) I.?
5. If $A=\begin{pmatrix}2 & 4\\ 3 & 6\end{pmatrix}, B=\begin{pmatrix}-2 & 5\\ 6 & 1\end{pmatrix}, C=\begin{pmatrix}1 & 2\\ 3 & 0\end{pmatrix}$. Show that A(B+C) = AB+AC?

2 Marks

1. If $M\times\begin{pmatrix}1 & 2\\ 0 & 5\end{pmatrix}=\begin{pmatrix}2 & 3\end{pmatrix}$ find the order of M and determine the Matrix ‘M’ ?
2. If $A=\begin{pmatrix}1 & 4\\ 0 & -1\end{pmatrix}; B=\begin{pmatrix}2 & m\\ 0 & \frac{-1}{2}\end{pmatrix}$ find ‘m’ if AB=BA.?
3. If $A=\begin{pmatrix}1 & 2\\ 1 & 3\end{pmatrix}; B=\begin{pmatrix}2 & 0\\ 5 & -3\end{pmatrix}$ find the Matrix $B+A^{-1}$?
4. If $\begin{pmatrix}3x+2y & 6\\ 2 & 2x-3y\end{pmatrix}=\begin{pmatrix}5 & 6\\ 2 & -1\end{pmatrix}$ find x,y?
5. If $A=\begin{pmatrix}1 & 4\\ 2 & 1\end{pmatrix}; B=\begin{pmatrix}-3 & 2\\ 4 & 0\end{pmatrix}; C=\begin{pmatrix}1 & 0\\ 0 & 2\end{pmatrix}$ find $A^2 + BC$?

1 Mark

1. If $A=\begin{pmatrix}1 & 3\\ 5 & 6\end{pmatrix}$ find the value of $A+A^T$?
2. If $A=\begin{pmatrix}2 & 4\\ -6 & 5\end{pmatrix}, B=\begin{pmatrix}4 & -3\\ 5 & 7\end{pmatrix}$ find 3A-2B?
3. If $A=\begin{pmatrix}1 & 2\\ 1 & 3\end{pmatrix}$ find $A+A^{-1} = 4I$?
4. $\begin{vmatrix}d-2 & 5\\ -4 & 2\end{vmatrix}$ =0 find ‘d’?
5. If $A=\begin{pmatrix}2 & -3\\ 1 & 5\end{pmatrix}$ find A^{-1}?
6. Define Non-singular Matrix
7. If $A=\begin{pmatrix}1 & 0\\ 0 & 0\end{pmatrix}$ and $B=\begin{pmatrix}0 & 0\\ 0 & 1\end{pmatrix}$ then Find AB?