MULTIPLE CHOICE QUESTIONS (MCQ'S)

1. A rectangular array of numbers enclosed by a pair of bracket is called ______.
   (a) Column (b) Row (c) element (d) Matrix
2. Vertical lines of numbers are called
   (a) Column (b) Rows
   (c) element (d) None of these
3. Horizontal lines of numbers are called:
   (a) elements (b) Rows
   (c) Column (d) None of these
4. $m \times n$ is called:
   (a) Order of matrix (b) rows of matrix
   (c) Columns of matrix (d) None of these
5. The matrix A is real if all of it's elements are
   (a) Rows (b) Real
   (c) Complex (d) None of these
6. A matrix which has only one row is called ______ matrix.
   (a) Row (b) Column (c) Real (d) Imaginary
7. A matrix which has only one Column is called ______ matrix.
   (a) Row (b) Column (c) Real (d) Imaginary
8. A matrix in which number of rows are not equal to number of Columns is called ______ matrix.
   (a) Row (b) Column
   (c) Rectangular (d) Square
9. A matrix whose each element is zero is called ______ matrix.
   (a) Scalar (b) diagonal (c) Null (d) Identity
10. An $m \times n$ rectangular matrix in which the number of rows is less then the number of it's columns $(m < n)$ is called a ______ matrix.
    (a) Scalar (b) diagonal (c) Null (d) Horizontal
11. An $m \times n$ rectangular matrix in which the number of rows is greater than the number of it's columns $(m > n)$ is called ______ matrix.
    (a) Vertical (b) Horizontal (c) Square (d) Null

(12) A matrix in which number of rows is equal to number of Columns is called ________ matrix.
(a) Square (b) Horizontal (c) Scalar (d) Null

(13) A square matrix all of whose elements except those in the leading diagonal are zero is called _______ matrix.
(a) Scalar (b) Diagonal (c) Identity (d) Null

(14) A diagonal matrix in which all the diagonal elements are equal/same is called is ________ matrix.
(a) Diagonal (b) Identity (c) Scalar (d) Null

(15) A Scalar matrix in which each diagonal element is Unity is called an _______ matrix.
(a) Diagonal (b) Null (c) Square (d) Identity

(16) A Square matrix is called an ______ matrix if all elements below the principal diagonal are zero.
(a) Upper Triangular (b) lower Triangular
(c) Vertical Triangular (d) Horizontal Triangular

(17) A Square matrix is said to be _______ matrix if all elements above the principal diagonal are zero.
(a) Upper Triangular (b) Lower Triangular
(c) Vertical Triangular (d) Horizontal Triangular

(18) A Square matrix is said to be a ________ matrix if it is either upper Triangular (or) Lower Triangular matrix.
(a) Vertical (b) Horizontal (c) Square (d) Triangular

(19) Matrix is a ________ word which means a place in which something develops (or) originates.
(a) German (b) latin (c) Danish (d) Arabic

(20) Two matrices A and B are said to be ________ matrices if and only if they are of the same order and their corresponding elements are _______.
(a) Square (b) Rectangular (c) Equal (d) Unequal

(21) If $A = \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$ then A is called _______ matrix.
(a) Rectangular (b) Square
(c) Column (d) Null

(22) If $A = \begin{bmatrix} 2 & 3 \\ 5 & -7 \end{bmatrix}$ and $B = \begin{bmatrix} 4-2 & 2+1 \\ 4+1 & -7 \end{bmatrix}$ then A and B are called ________ matrices.
(a) Equal (b) Rectangular (c) Null (d) Diagonal

(23) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ is known as ________ matrix.
(a) Unit (b) Null (c) Scalar (d) Transpose

(24) Transpose of a row matrix is called _______ matrix.
(a) Square (b) Rectangular (c) Row (d) Column

(25) Transpose of a Column matrix is called ________ matrix.
(a) Square (b) Rectangular (c) Row (d) Column

(26) $(A + B + C)^t =$ _______.
(a) $A + B + C$ (b) $A^t + B^t + C^t$ (c) ABC (d) $C^tB^tA^t$

(27) $(ABC)^t =$ _________.
(a) $A + B + C$ (b) $A^t + B^t + C^t$ (c) ABC (d) $C^tB^tA^t$

(28) $(A^t)^t =$ _________.
(a) A (b) A^t (c) I (d) A^{-1}

(29) Matrix of Order $m \times n$ is a Square matrix if
(a) $m \neq n$ (b) $m = n$ (c) $m < n$ (d) $m > n$

(30) $[\,0\,]$ is ________ matrix.
(a) Square (b) Rectangular (c) Identity (d) Unit

(31) $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ is a _______ matrix.
(a) Unit (b) Rectangular (c) Scalar (d) Square

(32) The principal diagonal of Square matrix is called ______.
(a) Identity diagonal (b) Unitary diagonal
(c) leading diagonal (d) diagonal matrix

(33) If $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 1 & 0 \end{bmatrix}$ then $A^t =$ _______.
(a) $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 1 & 0 \end{bmatrix}$ (b) $\begin{bmatrix} 1 & 2 \\ 2 & 1 \\ 3 & 0 \end{bmatrix}$
(c) $\begin{bmatrix} 3 & 2 & 1 \\ 0 & 1 & 2 \end{bmatrix}$ (d) $\begin{bmatrix} 2 & 1 & 0 \\ 1 & 2 & 3 \end{bmatrix}$

(34) $(A + B)^t =$ __________.
(a) $A + B$ (b) B^tA^t (c) $A^t + B^t$ (d) $A^t - B^t$

(35) If $A = \begin{bmatrix} 1 & 2 \\ 2 & 3 \end{bmatrix}$ then $3A =$
(a) $\begin{bmatrix} 3 & 6 \\ 2 & 3 \end{bmatrix}$ (b) $\begin{bmatrix} 3 & 6 \\ 6 & 3 \end{bmatrix}$ (c) $\begin{bmatrix} 1 & 2 \\ 6 & 9 \end{bmatrix}$ (d) $\begin{bmatrix} 3 & 6 \\ \text{[illegible]} & 9 \end{bmatrix}$

(36) A Square matrix A is Singular if
(a) $A = 0$ (b) $A = I$
(c) A = Scalar matrix (d) $|A| = 0$

(37) If $a = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ then adj A = ?
(a) $\begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$ (b) $\begin{bmatrix} a & -b \\ -c & d \end{bmatrix}$
(c) $\begin{bmatrix} -a & c \\ b & -d \end{bmatrix}$ (d) $\begin{bmatrix} a & c \\ b & d \end{bmatrix}$

(38) Inverse of identity matrix is ________.
(a) $\begin{bmatrix} 1 & 2 \\ 1 & 1 \end{bmatrix}$ (b) 0 (c) $\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$ (d) I

(39) For a non-Singular matrix A, A^{-1} = ________.
(a) $\frac{1}{|A|}$ (b) $\frac{1}{|A|}$ adj A
(c) $|A|$ adj A (d) $\frac{1}{|A| \text{ adj } A}$

(40) Matrix form of System $3x_1 - x_2 = 1$; $x_1 + x_2 = 3$ is
(a) $\begin{bmatrix} 3x_1 & -x_2 \\ x_1 & x_2 \end{bmatrix} = \begin{bmatrix} 1 \\ 3 \end{bmatrix}$ (b) $\begin{bmatrix} 3 & -1 \\ 1 & 1 \end{bmatrix}\begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$
(c) $\begin{bmatrix} 3 & -1 \\ 1 & 1 \end{bmatrix}\begin{bmatrix} x_1 \\ x_2 \end{bmatrix} = \begin{bmatrix} 1 \\ 3 \end{bmatrix}$ (d) None of these

(41) $\begin{bmatrix} x+3 & 1 \\ -3 & 2 \end{bmatrix} = \begin{bmatrix} 2 & 1 \\ -3 & 2 \end{bmatrix}$ then x = ________
(a) 5 (b) 1 (c) −1 (d) 0

(42) The transpose of a Zero matrix is ________ matrix.
(a) Identity (b) Zero (c) Column (d) Row

(43) Inverse of Identity matrix is ________ matrix.
(a) Square (b) Identity (c) Column (d) Row

(44) By Commutative property of addition for any two matrices A and B.
(a) $AB = BA$ (b) $A + B = B + A$
(c) $A - B = B - A$ (d) $A^{-1}B = B^{-1}A$

(45) By Associative property w.r to addition for any three matrices A, B and C.
(a) $(A + B) + C = A + (B + C)$ (b) $A(BC) = (AB)C$
(c) $A + B = B + C$ (d) $A + C = B + C$

(46) Additive identity of every matrix is ________ matrix.
(a) Null (b) Scalar (c) Column (d) Row

(47) If Order of matrix A is $m \times n$ and order of matrix B is $n \times p$ then order of AB is ________.
(a) $m \times m$ (b) $n \times n$ (c) $m \times p$ (d) $p \times m$

(48) The transpose of a rectangular matrix is a ________ matrix.
(a) Square (b) Column
(c) Row (d) Rectangular

(49) Matrices are represented by ________.
(a) Natural numbers (b) Real numbers
(c) Small letters (d) Capital letters

(50) If order of matrix A is $m \times n$ then the order of matrix A^t is
(a) $m \times m$ (b) $n \times n$ (c) $m \times n$ (d) $n \times m$

(51) Two matrices are said to be conformable for the addition if they have the same ________.
(a) Rank (b) Order
(c) Both of above (d) None of these

(52) $(AA^t)^t$ = ________.
(a) AA (b) A^tA^{-1} (c) AA^t (d) AA^{-1}

(53) The matrix $\begin{bmatrix} 3 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 3 \end{bmatrix}$ is a ________ matrix.
(a) Diagonal (b) Scalar (c) Unit (d) Null

(54) If matrix $\begin{bmatrix} \lambda & 3 \\ 2 & 4 \end{bmatrix}$ is a singular matrix then the value of λ is ________.
(a) 2/3 (b) 4/3 (c) 3/2 (d) −3/2

(55) The product of $\begin{bmatrix} \sin\theta & -\cos\theta \\ \cos\theta & \sin\theta \end{bmatrix}\begin{bmatrix} \sin\theta & \cos\theta \\ -\cos\theta & \sin\theta \end{bmatrix}$ is ________.
(a) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ (b) $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$
(c) $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ (d) None of these

(56) ________ matrices are both upper triangular and lower triangular.
(a) Square (b) Diagonal
(c) Null (d) Non of these

(57) A Square matrix A is said to be _______ matrix if $A^{P+1} = A$ where P is _______.
(a) Periodic (b) Idempotent (c) Nilpotent (d) Involutory

(58) A Square matrix A is said to be _______ matrix if $A^2 = A$.
(a) Periodic (b) Idempotent (c) Nilpotent (d) Involutory

(59) A Square matrix A is said to be _______ matrix if $A^P = O$ where P is index and "O" is null matrix.
(a) Periodic (b) Idempotent (c) Nilpotent (d) Involutory

(60) A square matrix A such that $A^2 = I$ is called _______ matrix.
(a) Periodic (b) Idempotent
(c) Nilpotent (d) Involutory

(61) A Square matrix A such that $A^t = A$ is called _______ matrix.
(a) Symmetric (b) Skew Symmetric
(c) Involutory (d) Idempotent

(62) A Square matrix A such that $A^t = -A$ is called _______ matrix.
(a) Symmetric (b) Skew-Symmetric
(c) Involutory (d) Idempotent

(63) A matrix A such that $|A| = 1$ is called _______ matrix.
(a) Identity (b) Null
(c) Unimodular (d) Singular

(64) _______ matrix is always non–singular.
(a) Null (b) Identity
(c) unimodular (d) None of these

(65) The transpose of a square matrix is a _______ matrix.
(a) Null (b) Row (c) Column (d) Square

(66) The additive inverse of a matrix A is _______.
(a) A (b) $-A$ (c) A^2 (d) $\frac{\text{adj } A}{|A|}$

(67) If $|A| \neq 0$ then A is called _______ matrix.
(a) Singular (b) Non-Singular
(c) Zero (d) Identity

(68) $(A^{-1})^t =$ _______.
(a) I (b) $(A^t)^{-1}$ (c) A^{-1} (d) A^t

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

(70) $(A^{-1})^{-1} =$ _______.
(a) I (b) A^{-1} (c) A (d) 0

(71) $(A^{-1})^{-1} A^{-1} =$ _______.
(a) A^{-1} (b) $(A^{-1})^{-1}$ (c) A (d) I

(72) $(AB)^t =$ _______.
(a) A + B (b) $A^t B^t$ (c) $B^t A^t$ (d) AB

(73) $A \times A^{-1} =$ _______.
(a) A (b) A^{-1}
(c) I (d) None of these

(74) The inverse of a matrix does not exist if the determinant of the matrix is _______.
(a) 0 (b) 1 (c) -1 (d) 2

(75) Generally in matrix $A \times B$ _______ $B \times A$.
(a) = (b) < (c) > (d) ≠

(76) The _______ matrix is called additive identity.
(a) Null (b) Row (c) Column (d) Scalar

(77) By distributive property of multiplication of matrices over addition $A(B + C) =$ _______.
(a) AB + BC (b) AB − BC
(c) AB + AC (d) None of these

(78) If two matrices A and B are such that their sum A + B is the Null matrix then A and B are called _______ inverse of each other.
(a) Multiplicative (b) Additive
(c) Identity (d) None of these

(79) By distributive property of multiplication of matrices over subtraction $A(B - C) =$ _______.
(a) AB − BC (b) AB − AC (b) AB + AC (d) AB + BC

(80) If AI = _______.
(a) I (b) A^{-1}
(c) A (d) None of these

(81) If AB = I then B is called the _______ inverse of A.
(a) Additive (b) Multiplicative
(c) Both (a) & (b) (d) None of these

(82) By Associative property of matrices w.r to multiplication A (BC) = _______.
(a) (AB) C (b) (AC) B (c) ABC (d) CBA

(83) Two matrices are conformable for multiplication if the number of columns in the first matrix _______ to the number of rows in the second matrix.
(a) Not equal (b) Equal
(c) less than (d) None of these

(84) If A, B, C are three matrices such that AB = C, then _____.

(a) $B = \frac{C}{A}$ (b) $B = CA^{-1}$ (c) $B = A^{-1}C$ (d) $B = C^{-1}A$

(85) If AB = BA = I then _______.

(a) A and B are equal to each other
(b) A and B are multiplicative inverse of each other
(c) A and B are both singular
(d) A and B are additive inverse of each other

(86) Determinant of identity matrix is _______.

(a) 0 (b) 1
(c) −1 (d) None of these

(87) The Cofactor of an element a_{ij} denoted by A_{ij} is ________.

(a) $(-1)^{ij} M_{ij}$ (b) $(-1)^{i+j} M_{ij}$
(c) $(-1)^{i-j} M_{ij}$ (d) $(1)^{i+j} M_{ij}$

(88) Order of matrix $\begin{bmatrix} 2 & -3 & 0 \\ 1 & 2 & 4 \\ 3 & -1 & 5 \\ 0 & 1 & 2 \end{bmatrix}$ is ________.

(a) 3 × 3 (b) 3 × 4 (c) 4 × 3 (d) 4 × 4

(89) Additive identity of matrix $\begin{bmatrix} 2 & 3 \\ 1 & -1 \end{bmatrix}$ is ________.

(a) $\begin{bmatrix} -2 & -3 \\ -1 & 1 \end{bmatrix}$ (b) $\begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$

(c) $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$ (d) $\begin{bmatrix} -1 & -3 \\ -1 & 2 \end{bmatrix}$

(90) Multiplicative identity in matrices is ________.

(a) I (b) O (c) −I (d) A^{-1}

(91) by Associative property w.r to multiplicative is ________.

(a) A + (B + C) = (A + B) + C
(b) A (BC) = (AB) C
(c) AB = BA
(d) A (B + C) = AB + AC

(92) Associative property of Scalar multiplication is _______.

(a) (cd) A = c (dA) (b) dA = Ad
(c) A + B = B + A (d) A + O = O + A

(93) Distributive property w.r to Scalar multiplication ______.

(a) c (A + B) = cA + cB (b) A + B = B + A
(c) d (AB) = (AB) d (d) A (B + C) = AB + AC

(94) Distributive property w.r to Scalar multiplication _______.

(a) (c + d) A = cA + dA (b) C (AB) = (AB) C
(c) A (B + C) = (A + B) C (d) A = B

(95) Element formed by deleting ith, row jth column of matrix A is called ______.

(a) Cofactor (b) Minor
(c) determinant (d) None of these

(96) If $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 1 & 2 \\ 2 & 1 & 2 \end{bmatrix}$ then M_{11} = ________.

(a) 0 (b) 2 (c) 1 (d) −5

(97) If $A = \begin{bmatrix} 1 & 1 & -1 \\ 2 & 1 & 3 \\ 1 & 1 & 2 \end{bmatrix}$ then M_{21} = _______.

(a) −1 (b) 3 (c) 1 (d) 2

(98) If $A = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$ then M_{33} = _______.

(a) $\begin{vmatrix} d & e \\ g & f \end{vmatrix}$ (b) $\begin{vmatrix} a & b \\ d & e \end{vmatrix}$ (c) $\begin{vmatrix} b & c \\ e & f \end{vmatrix}$ (d) $\begin{vmatrix} e & f \\ h & i \end{vmatrix}$

(99) $(KA)^t$ = _______ where K is Scalar

(a) KA^t (b) $K^t A^t$ (c) $(AK)^t$ (d) $A^t K^t$

(100) $[\,x \;\; y \;\; z\,] \begin{bmatrix} x \\ y \\ z \end{bmatrix}$ = _________.

(a) $[\,x^2 + y^2\,]$ (b) $[\,x^2 + y^2 + z^2\,]$

(c) $\begin{bmatrix} x^2 \\ y^2 \\ z^2 \end{bmatrix}$ (d) None of these

(101) If $A = \begin{bmatrix} i & 0 \\ 0 & -i \end{bmatrix}$ then A^2 = _______ where $i = \sqrt{-1}$

(a) −1 (b) I_2
(c) $-I_2$ (d) None of these

(102) For matrices A and B in general $(A + B)^2$ ______ $A^2 + 2AB + B^2$.

(a) = (b) > (c) < (d) ≠

(103) For matrices A and B in general $(A-B)^2$ ______ $A^2 - 2AB + B^2$.
(a) = (b) ≠ (c) > (d) <

(104) For matrices and Bin General $(A+B)(A-B)$ ______ $A^2 - B^2$.
(a) ≠ (b) = (c) > (d) <

(105) $Y = [y_{ij}]_{(4,2)}$ then matrix "Y" in tabular form.
(a) $\begin{bmatrix} y_{11} & y_{12} \\ y_{21} & y_{22} \\ y_{31} & y_{32} \\ y_{41} & y_{42} \end{bmatrix}$ (b) $\begin{bmatrix} y_{11} & y_{12} & y_{13} \\ y_{21} & y_{22} & y_{23} \\ y_{31} & y_{32} & y_{33} \end{bmatrix}$
(c) $\begin{bmatrix} y_{11} & y_{12} \\ y_{21} & y_{22} \end{bmatrix}$ (d) None of these

(106) If Order of matrix "A" is $m \times n$ then order of $(A^t)^t$ is ______.
(a) $n \times m$ (b) $m \times n$ (c) $m \times m$ (d) $n \times n$

(107) I_4 is the ______ matrix.
(a) Rectangular (b) Identity
(c) Diagonal (d) None of these

(108) If order of A is $m \times n$ and order of B is $\ell \times K$ then for BA matrix ______.
(a) $n = m$ (b) $m = K$ (c) $n = \ell$ (d) $n = K$

(109) Two matrices A and B can be added if order of A is ______ to order of B.
(a) Unequal (b) Equal
(c) less than (d) None of these

(110) An equation $ax + by = K$ where $a \neq 0, b \neq 0, K \neq 0$ is called ______.
(a) Non homogeneous (b) Homogeneous
(c) Non Trivial (d) Trivial

(111) The matrix AA^t is called ______.
(a) Hermitian (b) Symmetric
(c) Skew Symmetric (d) None of these

(112) We solved the system of non-homogenous linear equations by using
(a) matrix method (b) Cramer's Rule
(c) Echelon form and Reduced echelon form
(d) (a), (b) and (c)

(113) Trivial Solution of homogenous linear equation is ______.
(a) (1,0,0) (b) (0,1,0) (c) (0,0,1) (d) (0,0,0)

(114) An equation of the form $ax + by = K$ is homogenous linear equation if ______.
(a) $a = 0, b = 0, K = 1$ (b) $a = 0, b = 1, K = 2$
(c) $a \neq 0, b \neq 0, K = 1$ (d) $a \neq 0, b \neq 0, K = 0$

(115) Minimum number of equations for any system of equations.
(a) 2 (b) 3 (c) 4 (d) 10

(116) $(A^2)^{-1} =$ ______.
(a) $(A^{-1})^2$ (b) A^{-1}
(c) A^t (d) None of these

(117) If in any matrix the elements of rows and columns are equal then such matrix is called ______ matrix.
(a) Equal (b) Symmetrix (c) Square (d) Diagonal

(118) If $|A| = 5$ then $A|A|A^{-1} =$ ______.
(a) I (b) 5I (c) A (d) A^{-1}

(119) If $|A| = 2$ then $|A| \cdot \frac{1}{|A^t|} I =$ ______.
(a) I (b) 2I (c) A (d) A^{-1}

(120) A constant number is associated with a square matrix is called the ______ of the matrix.
(a) Determinant (b) Matrix
(c) Row (d) Column

(121) If $\begin{vmatrix} 4 & x \\ 2 & 3 \end{vmatrix} = 0$ the value of x is
(a) 6 (b) −6 (c) 12 (d) 0

(122) The value of the determinant $\begin{vmatrix} -7 & 6 \\ -4 & 3 \end{vmatrix}$ is ______.
(a) −3 (b) 0 (c) 1 (d) 3

(123) The value of a determinant is unaltered by changing it's rows and columns i − e for any matrix A i − e $|A| =$ ______.
(a) A (b) $(|A|)^t$
(c) $|A^t|$ (d) None of these

(124) The interchange of any two rows or of any two Columns of a matrix A changes the ______ of it's determinant without altering it's numerical value.
(a) Value (b) Sign
(c) Simplify (d) None of these

(125) If two rows of a matrix A are identical then $|A|$ = ______.
(a) 1 (b) -1
(c) 0 (d) None of these

(126) If all the elements of a row of a square matrix A are zero then $|A|$ = ______
(a) -1 (b) 1
(c) 0 (d) None of these

(127) If two columns of a matrix A are identical then $|A|$ = ______.
(a) 0 (b) 1
(c) -1 (d) None of these

(128) If the entries of a row (or a column) in a square matrix A are multiplied by a number $K \in R$ then the determinant of the resulting matrix is ______.
(a) $|KA|$ (b) $K|A|$
(c) $|K|A$ (d) None of these

(129) If each entry of a row (or a column) of a square matrix consists of two terms, then it's determinant can be written as the sum of ______ determinants.
(a) Three (b) Two
(c) One (d) None of these

(130) The inverse of a matrix does not exist if the determinant of the matrix is ______.
(a) 0 (b) 1 (c) -1 (d) 10000

(131) If to each entry of a row (or a column) of a square matrix A is added a non-zero multiple of the corresponding entry of another row (or column) then the determinant of the resulting matrix is ______.
(a) A (b) $|A^t|$
(c) $|A|$ (d) None of these

(132) Evaluate $|A| = \begin{vmatrix} 3 & 5 & -1 \\ 1 & -2 & 2 \\ 2 & 6 & 3 \end{vmatrix}$ then the value of $|A|$ = ______.
(a) 59 (b) -59 (c) 0 (d) 100

(133) If $|A| = \begin{vmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{vmatrix}$ then the value of determinant by arrow method can be find by $|A|$ = ______
(a) $a_{11}a_{22}a_{33} + a_{12}a_{23}a_{31} + a_{13}a_{21}a_{32} - a_{31}a_{22}a_{13} - a_{32}a_{23}a_{11} - a_{33}a_{21}a_{12}$

(b) $a_{11}a_{22}a_{33} + a_{12}a_{23}a_{31} + a_{13}a_{21}a_{32} - a_{31}a_{22}a_{13} - a_{32}a_{23}a_{11}$
(c) $a_{11}a_{22}a_{33} + a_{12}a_{23}a_{31} + a_{13}a_{21}a_{32} - a_{31}a_{22}a_{13} - a_{33}a_{21}a_{12}$
(d) None of these

(134) Determinant of identity matrix is ______.
(a) -1 (b) 0 (c) 1 (d) 50

(135) Determinant of Null matrix is ______.
(a) 1 (b) -1 (c) 3 (d) 0

(136) If $|A| = \begin{vmatrix} 1 & 2 \\ 2 & 4 \end{vmatrix}$ then $5|A|$ = ______
(a) $\begin{vmatrix} 5 & 2 \\ 15 & 20 \end{vmatrix}$ (b) $\begin{vmatrix} 5 & 2 \\ 6 & 8 \end{vmatrix}$
(c) $\begin{vmatrix} 5 & 10 \\ 3 & 4 \end{vmatrix}$ (d) $\begin{vmatrix} 5 & 10 \\ 15 & 20 \end{vmatrix}$

(137) Solution of non-homogeneous system of linear equation can be find through matrices ______.
(a) $AB = X$ (b) $X = A^{-1}B$
(c) $A = B^{-1}X$ (d) None of these

(138) The Solution Set of the equations by $3x + 5y = 24$; $4x - 7y = -50$ using help of matrices is ______.
(a) $x = 0, y = 0$ (b) $x = 0, y = 1$
(c) $x = -2, y = 6$ (d) $x = 1, y = 1$

(139) The given system of equations.
$x_1 + 3x_2 + 2x_3 = 0$
$2x_1 - 4x_2 + x_3 = 0$
$3x_1 + 2x_2 - x_3 = 0$
is called ______ system.
(a) Non-Homogenous (b) Homogeneous
(c) quadratic (d) None of these

(140) Solve for x = ______.
if $\begin{vmatrix} 1 & a & b \\ 1 & x & b \\ 1 & c & x \end{vmatrix} = 0$
(a) $x = 0, 1$ (b) $x = c, d$
(c) $x = a, b$ (d) None of these

(141) The value of the determinant

$$\begin{vmatrix} 1 & 1 & 1 \\ \omega & \omega^2 & 1 \\ \omega^2 & \omega & 1 \end{vmatrix} \text{ \_\_\_\_\_\_}$$

(a) $3(\omega^2 - \omega)$ (b) $3(\omega^2 + \omega)$ (c) $3\omega^2$ (d) 3

(142) The Solution Set of given System of linear equations.

$x + 2y + Z = 8$

$2x - y + Z = 3$

$x + y - Z = 0$

by using with the help of matrices is ________.

(a) $x = 1, y = 2, Z = 3$ (b) $x = 0, y = 0, z = 0$

(c) $x = 1, y = -2, Z = 0$ (d) None of these

(143) The Solution Set of given System of linear equations.

$Y + Z - t = 0$

$2y + t = 5$

$2y - Z - 3t + 2 = 0$

by using with the help of matrices is ________.

(a) $y = 0, Z = 0, t = 0$ (b) Impossible

(c) $y = 1, Z = 1, t = 1$ (d) None of these

(144) Find the value of λ such that $\begin{bmatrix} 5 & 0 & 9 \\ 8 & \lambda & -8 \\ 2 & 2 & 4 \end{bmatrix}$ is Singular matrix.

(a) 112 (b) 800 (c) 100 (d) −112

(145) The evaluation of determinants with the help of minors and cofactors is known as _______ expansion.

(a) Cramer's (b) Lagrange (c) Newton (d) Laplacian

(146) In the matrix $A = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$ what is the Cofactor of f?

(a) ah − bg (b) ah + bg (c) ah (d) bg − ah

(147) In the matrix $A = \begin{bmatrix} 2 & 4 & 5 \\ 6 & 7 & 0 \\ 9 & 2 & 3 \end{bmatrix}$ What is the Cofactor of 7 = ______.

(a) −39 (b) 39 (c) 50 (d) 40

(148) What is the minor and Cofactor of 4 in matrix

$A = \begin{bmatrix} 3 & 4 & 5 \\ 1 & 2 & 1 \\ 1 & 3 & 2 \end{bmatrix}$ is ______ and ______.

(a) $\begin{vmatrix} 1 & 1 \\ 1 & 2 \end{vmatrix}$ and − 1 (b) $\begin{vmatrix} -1 & -1 \\ 1 & 2 \end{vmatrix}$ and − 1

(c) $\begin{vmatrix} 1 & 2 \\ 1 & 1 \end{vmatrix}$ and − 1 (d) None of these

(149) The inverse of $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ is ______.

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

(150) If I_3 is identity matrix of order 3 then $(I_3)^{-1}$ = ________.

(a) $2I_3$ (b) $3I_3$

(c) I_3 (d) None of these

(151) If w is an imaginary Cube root of Unit, then the value of $\begin{vmatrix} 1 & \omega & \omega^2 \\ 1 & \omega^2 & \omega \\ \omega^2 & 1 & \omega \end{vmatrix}$ is _______.

(a) 1 (b) ω (c) ω^2 (d) 0

(152) The value of the determinant $\begin{vmatrix} 1 & 1 & \omega \\ 1 & 1 & \omega^2 \\ \omega & \omega^2 & 1 \end{vmatrix}$ is _______.

(a) 2 (b) 3 (c) 0 (d) 1

(153) The value of the determinant $\begin{vmatrix} a & a & a \\ x & -a & a \\ x & -a & -a \end{vmatrix}$ is ________.

(a) $2a^2(a + x)$ (b) $2a^2(a - x)$

(c) 0 (d) 4

(154) The value of the determinant $\begin{vmatrix} -i & 1 & 0 \\ 1 & i & 1+i \\ 1-i & 0 & 1 \end{vmatrix}$ is ________.

(a) 2 (b) 1 (c) 0 (d) 3

(155) The value of the determinant $\begin{vmatrix} 1 & 1 & 0 \\ 1 & 0 & 1 \\ 0 & 1 & 1 \end{vmatrix}$ is ______.

(a) 3 (b) 1 (c) −1 (d) −2

(156) The value of determinant $\begin{vmatrix} 1 & 1 & 1 \\ -1 & -1 & 0 \\ -1 & 0 & 1 \end{vmatrix}$ is ______.

(a) 3 (b) 1 (c) −1 (d) −2

(157) Evaluate $\begin{vmatrix} 1 & \omega & \omega^2 \\ \omega & \omega^2 & 1 \\ \omega^2 & 1 & \omega \end{vmatrix}$ = ______

(a) 3 (b) 0 (c) 1 (d) 5

(158) Evaluate $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ b+c & c+a & a+b \end{vmatrix}$ = ______.

(a) 0 (b) −1 (c) 5 (d) 2

(159) If all the elements of a column of Square matrix A are zero then $|A|$ = ______.

(a) 1 (b) −1 (c) 2 (d) 0

(160) If to each element of a row of a matrix A is added a constant multiple of the corresponding element of another row then the value of $|A|$ = ______.

(a) Remains unaltered (b) Increases
(c) Decreases (d) Negative

(161) If $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ is a Square matrix then $|A| = \begin{vmatrix} a & b \\ c & d \end{vmatrix}$ is known as ______ of matrix A.

(a) Adjoint (b) Determinant
(c) Multiplicative Inverse (d) Additive inverse

(162) $A = \begin{bmatrix} 2 & 3 \\ 4 & 6 \end{bmatrix}$ is an example of ______ matrix.

(a) Rectangular (b) Row
(c) Non-Singular (d) Singular

(163) $\begin{bmatrix} 1 & 2 \\ 3 & P \end{bmatrix}$ is a Singular matrix then the value of P is ______.

(a) −6 (b) 5 (c) 23 (d) 6

(164) If the value of the determinant of a matrix A is not zero then the matrix "A" is called ______ matrix.
(a) Non-Singular (b) Singular
(c) Diagonal (d) Column

(165) If $A \times A^{-1} = I$ then A^{-1} called ______ of matrix A.
(a) Additive inverse (b) Multiplicative inverse
(c) Adjoint (d) Transpose

(166) The value of a determinant is unaltered by ______ rows and columns.
(a) Adding (b) Subtracting (c) Changing (d) Dividing

(167) If two rows of a matrix A are similar then $|A| =$ ______.
(a) 3 (b) 4 (c) 1 (d) 0

(168) If all the elements of a row of a Square matrix A are zero then $|A| =$ __________.
(a) 1 (b) 0 (c) -1 (d) 2

(169) The value of a determinant _______ by changing it's rows and columns for any matrix A.
(a) Increases (b) Decreases
(c) Remains Same (d) Becomes Negative

(170) The interchange of any two rows or of any two columns of a matrix A ______ of the determinants.
(a) Increases the value (b) Decreases the value
(c) Changes the Sign (d) Becomes Negative

(171) If A is a square matrix, Find Adj (Adj A) = ______
(a) $|A|^2$ (b) A^2 (c) O (d) $|A|A$

(172) If A is a square matrix find A . (Adj A) = ______.
(a) $|A|^2$ (b) A^2 (c) $|A|I_3$ (d) $|A|A$.

(173) If A is a square matrix find $|\text{Adj } A| =$ ______
(a) A^2 (b) $|A|^2$ (c) $|A|I_3$ (d) $|A|A$.

(174) If A and B are square matrices then Adj (AB) = ______
(a) (Adj B) . (Adj A) (b) $|A|A$
(c) $|A|I_3$ (d) None of these

Answers

1.	*d*	**2.**	*a*	**3.**	*b*	**4.**	*a*	**5.**	*b*
6.	*a*	**7.**	*b*	**8.**	*c*	**9.**	*c*	**10.**	*d*
11.	*a*	**12.**	*a*	**13.**	*b*	**14.**	*c*	**15.**	*d*

16.	a	17.	b	18.	d	19.	b	20.	c
21.	d	22.	a	23.	a	24.	d	25.	c
26.	b	27.	d	28.	a	29.	b	30.	a
31.	a	32.	c	33.	b	34.	c	35.	d
36.	d	37.	a	38.	d	39.	b	40.	c
41.	c	42.	b	43.	b	44.	b	45.	a
46.	a	47.	c	48.	d	49.	d	50.	d
51.	b	52.	c	53.	b	54.	c	55.	a
56.	b	57.	a	58.	b	59.	c	60.	d
61.	a	62.	b	63.	c	64.	b	65.	d
66.	b	67.	b	68.	b	69.	b	70.	c
71.	d	72.	c	73.	c	74.	a	75.	d
76.	a	77.	c	78.	b	79.	b	80.	c
81.	b	82.	a	83.	b	84.	c	85.	b
86.	b	87.	b	88.	c	89.	a	90.	a
91.	b	92.	a	93.	a	94.	a	95.	b
96.	a	97.	b	98.	b	99.	a	100.	b
101.	c	102.	d	103.	b	104.	a	105.	a
106.	b	107.	b	108.	b	109.	b	110.	a
111.	b	112.	d	113.	d	114.	d	115.	a
116.	a	117.	b	118.	b	119.	a	120.	a
121.	a	122.	d	123.	c	124.	b	125.	c
126.	c	127.	a	128.	b	129.	b	130.	a
131.	c	132.	b	133.	a	134.	c	135.	d
136.	d	137.	b	138.	c	139.	b	140.	c
141.	a	142.	a	143.	b	144.	d	145.	d
146.	d	147.	d	148.	a	149.	d	150.	c
151.	d	152.	b	153.	a	154.	a	155.	d
156.	c	157.	b	158.	a	159.	d	160.	a
161.	b	162.	d	163.	d	164.	a	165.	b
166.	c	167.	d	168.	b	169.	c	170.	c
171.	d	172.	c	173.	b	174.	a		