PARISHRAM 2026

Mathematics

DPP: 1

Matrices

Q1 $\mathbf{A} = [a_{ij}]_{m \times n}$ is a square matrix, if

(A) m < n (B) m > n

(C) m = n (D) None of these

Q2 In the matrix $\mathbf{A} = \begin{bmatrix} 2 & 5 & 19 & -7 \\ 35 & -2 & \frac{5}{2} & 12 \\ \sqrt{3} & 1 & -5 & 17 \end{bmatrix}$, write:

(i) The order of the matrix,

(ii) The number of elements,

(A) 3 × 4, 12

(B) 4 × 3, 12

(C) 3 × 3, 9

(D) 3 × 4, 9

Q3 Find the number of all possible matrices of order 3 × 3 having each entry either 0 or 1.

(A) 27 (B) 256

(C) 81 (D) 512

Q4 If A and B are two matrices of the order 3 × m and 3 × n, respectively, and m = n, then the order of matrix (5A – 2B) is

(A) m × 3 (B) 3 × 3

(C) m × n (D) 3 × n

Q5 Which of the following is a row matrix?

(A) $\begin{bmatrix} 1 & 2 & 3 \end{bmatrix}$ (B) $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$

(C) $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ (D) $\begin{bmatrix} 6 \\ 8 \end{bmatrix}$

Q6 A matrix $\mathbf{A} = [a_{ij}]$ of order 2 × 3 whose elements are such that $a_{ij} = i + j$ is -

(A) $\begin{bmatrix} 2 & 3 & 4 \\ 3 & 4 & 5 \end{bmatrix}$ (B) $\begin{bmatrix} 2 & 3 & 4 \\ 5 & 4 & 3 \end{bmatrix}$

(C) $\begin{bmatrix} 2 & 3 & 4 \\ 5 & 5 & 4 \end{bmatrix}$ (D) None of these

Q7 If a matrix has 36 elements, the number of possible orders it can have, is :

(A) 13 (B) 3

(C) 5 (D) 9

Q8 A diagonal matrix must be:

(A) A row matrix

(B) A column matrix

(C) A square matrix

(D) A rectangular matrix

Q9 The order of the matrix $\begin{bmatrix} 2 \\ 5 \\ 8 \end{bmatrix}$ is:

(A) 1×3 (B) 3×1

(C) 3×3 (D) 1×1

Q10 Which matrix is not a diagonal matrix?

(A) $\begin{bmatrix} 7 & 0 \\ 0 & 7 \end{bmatrix}$ (B) $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 3 \end{bmatrix}$

(C) $\begin{bmatrix} 4 & 5 \\ 0 & 4 \end{bmatrix}$ (D) $\begin{bmatrix} 6 & 0 \\ 0 & 0 \end{bmatrix}$

Answer Key

Q1	C
Q2	A
Q3	D
Q4	D
Q5	A
Q6	A
Q7	D
Q8	C
Q9	B
Q10	C

Hints & Solutions

Note: scan the QR code to watch video solution

Q1 Text Solution:

It is known that a given matrix is said to be a square matrix if the number of rows is equal to the number of columns.

Therefore, $\mathbf{A} = [\mathbf{a_{ij}}]_{\mathbf{m\times n}}$ is a square matrix, if m = n.

Video Solution:

Q2 Text Solution:

The order of a matrix is (Number of Rows × Numbers of Columns)

So, Order of Matrix A = 3 × 4

The Number of elements = 3 × 4 = 12

Video Solution:

Q3 Text Solution:

For a 3 × 3 matrix, we have 9 positions. Each position can be filled with 0 or 1 Total number of matrices $= \underbrace{2\times 2\times \ldots 2}_{9 \text{ times}} = 2^9$

Video Solution:

Q4 Text Solution:

Given matrix $[\mathbf{A}]_{\mathbf{3\times m}}$ and matrix $[\mathbf{B}]_{\mathbf{3\times n}}$ and m = n

So $[\mathbf{A}]_{\mathbf{3\times n}}$ and $[\mathbf{B}]_{\mathbf{3\times n}}$ then order of matrix $\mathbf{5[A]_{3\times n} - 2[B]_{3\times n}}$ is 3×n.

Video Solution:

Q5 Text Solution:

The Row matrix has only one row.

Video Solution:

Q6 Text Solution:

$\mathbf{a_{ij}}$ is the element of $\mathbf{i^{th}}$ row and $\mathbf{j^{th}}$ column of matrix A

$\therefore$

$\mathbf{a_{11} = 1+1 = 2, a_{12} = 1+2 = 3, a_{13} = 1+3 = 4}$

$\mathbf{a_{21} = 2+1 = 3, a_{22} = 2+2 = 4, a_{23} = 2+3 = 5}$

$$\mathbf{A} = \begin{bmatrix} \mathbf{a_{11}} & \mathbf{a_{12}} & \mathbf{a_{13}} \\ \mathbf{a_{21}} & \mathbf{a_{22}} & \mathbf{a_{23}} \end{bmatrix} = \begin{bmatrix} \mathbf{2} & \mathbf{3} & \mathbf{4} \\ \mathbf{3} & \mathbf{4} & \mathbf{5} \end{bmatrix}$$

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Q7 Text Solution:

If a matrix has 36 elements then Number of Possible orders is:-

(1×36), (2×18), (3×12), (4×9), (6×6), (3×4), (12×3), (18×2), (36×1)

Total Possible orders = 9

Video Solution:

Q8 **Text Solution:**

A diagonal Matrix must be a Square matrix.

Video Solution:

Q9 **Text Solution:**

The order of a matrix = Number of Rows × Number of Columns

So Matrix $\begin{bmatrix} 2 \\ 5 \\ 8 \end{bmatrix}$ has 3 Rows and 1 Column.

Video Solution:

Q10 **Text Solution:**

$A = [a_{ij}]_{m \times n}$ is a Diagonal Matrix.

If a_{ij} = 0, when i≠j

Video Solution: