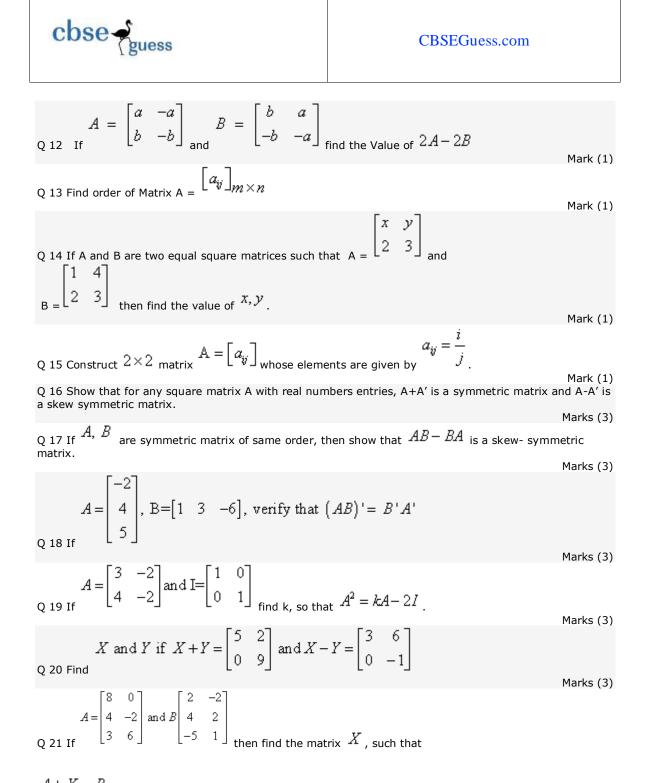


VISION VICTORY TEST SERIES CLASS 12 MATHEMATICS

Time :-1:30 HR Q 1 Find order of Matrix A = $\begin{bmatrix} a_{ij} \end{bmatrix}_{m \times n}$ Mark (1) Q 2 If a matrix has 24 elements, what are the possible orders it can have ? What, if it has 13 elements? Mark (1) Q 3 If A and B are two equal square matrices such that A = $\begin{bmatrix} x & y \\ 2 & 3 \end{bmatrix}$ and $\begin{bmatrix} 1 & 4 \end{bmatrix}$ 4 [2 3] then find the value of x, yMark (1) Q 4 If A and B are two square matrices and K is a scalar quantity then K(A+B) =_____. Mark (1) $a_{ij} = \frac{i}{j}$ Q 5 Construct 2×2 matrix $A = [a_{ij}]$ whose elements are given by Mark (1) Q 6 A square matrix in which all elements of diagonal are 1 and rest all elements are zero then such a matrix is said to be ____ Mark (1) Q 7 Define Identity matrix. Mark (1) $A = \begin{bmatrix} 1 & 0 \\ 2 & 4 \end{bmatrix}_{\text{and}} B = \begin{bmatrix} 2 & -1 \\ 3 & 7 \end{bmatrix}_{\text{find}} A + B$ 0 8 If Mark (1) $\begin{array}{c} A = \begin{bmatrix} 2 & 4 & 6 \\ 3 & 5 & 7 \end{bmatrix} \\ \text{find the diagonal elements of } A \end{array} .$ Mark (1) $\begin{array}{c} a & 0 \\ 0 & -a \end{array} \right|_{\text{and } B} = \begin{bmatrix} 0 & a \\ a & 0 \end{bmatrix}_{\text{find the value of AB.}}$ Mark (1) $A = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}_{\text{and}} B = \begin{bmatrix} a & 0 \\ 0 & -a \end{bmatrix}_{\text{satisfying }} 2A + B = 0 \text{ then}$ Q 11 If find the value of a . Mark (1)

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A + X = BMarks (3) $A = \begin{bmatrix} 5 & -1 & 0 \\ 7 & 3 & 4 \end{bmatrix} \text{ and } B \begin{bmatrix} -3 & 2 & 0 \\ -5 & 6 & 2 \end{bmatrix}$ Find A + B, A - B

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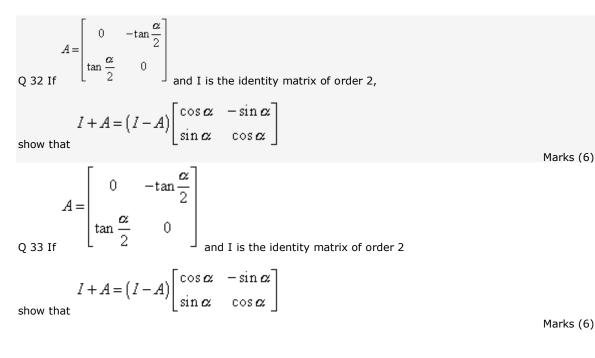
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Marks (3) Q 23 Find the value of x, y and z if: $\begin{bmatrix} x+y & 2 \\ 5+z & -z \end{bmatrix} = \begin{bmatrix} 6 & 2 \\ 5 & -z \end{bmatrix}$ $\begin{bmatrix} x+y & 2\\ 5+z & xy \end{bmatrix} = \begin{bmatrix} 6 & 2\\ 5 & 8 \end{bmatrix}$ Marks (3) Q 24 Construct a 2×2 matrix $A = \begin{bmatrix} a_{ij} \end{bmatrix}_{if} a_{ij} = \frac{(i+j)^2}{2}$ Marks (3) $A = \begin{bmatrix} 2 & 5 & \sqrt{7} & 3 \\ 35 & 6 & 5/3 & -1 \\ \sqrt{3} & 1 & 6 & 0 \end{bmatrix}$ (i) Write the cond (i) Write the order of the matrix. (ii) Write the elements $a_{13}, a_{21}, a_{23}, a_{34}$. Marks (3) Q 26 Show that for any square matrix A with real number entries, A+A' is a symmetric matrix and A-A' is a skew symmetric matrix. Marks (3) Q 27 Find the matrix X so that $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} = \begin{bmatrix} -7 & -8 & -9 \\ 2 & 4 & 6 \end{bmatrix}$ Marks (4) $Q 28 \text{ If } A = \begin{bmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{bmatrix} \text{ then prove that } A^n = \begin{bmatrix} \cos n\theta & \sin n\theta \\ -\sin n\theta & \cos n\theta \end{bmatrix}, n \in \mathbb{N}$ $A = \begin{bmatrix} 3 & 3 & -1 \\ -2 & -2 & 1 \\ -4 & -5 & 2 \end{bmatrix}$ as the sum of a symmetric and a skew-symmetric Matrix. Marks (4) Q 29 Express Marks (4) Q 30 Find the matrix X so that $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} = \begin{bmatrix} -7 & -8 & -9 \\ 2 & 4 & 6 \end{bmatrix}$ Marks (4) $A = \begin{bmatrix} 1 & 1 & 2 \\ 0 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$ using elementary operations. Q 31 Obtain the inverse of the matrix Marks (6)

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