

Matrices and Determinants-1
Model Exam Question paper - 1

11th Standard

Business Maths

Reg.No. :

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I. Answer all the questions

Time : 00:35:00 Hrs

Total Marks : 25

Part-A

4 x 1 = 4

- 1) $\begin{bmatrix} 0 & 0 & 0 \end{bmatrix}$ is a
(a) Unit matrix (b) Scalar matrix (c) Null matrix (d) Diagonal matrix
- 2) $\begin{bmatrix} 6 & 2 & -3 \end{bmatrix}$ is a matrix of order
(a) 3×3 (b) 3×1 (c) 1×3 (d) Scalar matrix
- 3) $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ is a
(a) Unit matrix (b) Zero matrix of order 2×2 (c) Unit matrix of 2×2 (d) None of these
- 4) $A = \begin{pmatrix} 3 & -3 \\ 2 & 4 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & 2 \\ -1 & 0 \end{pmatrix}$, then $A + B$ is
(a) $\begin{pmatrix} 4 & 5 \\ 3 & 4 \end{pmatrix}$ (b) $\begin{pmatrix} 4 & -1 \\ -1 & 4 \end{pmatrix}$ (c) $\begin{pmatrix} 4 & -1 \\ 1 & 4 \end{pmatrix}$ (d) $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$

Part-B

4 x 2 = 8

- 5) If $A = \begin{pmatrix} 5 & 3 \\ 7 & 2 \end{pmatrix}$ and $B = \begin{pmatrix} 3 & 2 \\ 4 & 6 \end{pmatrix}$ then, show that
 $A + B = B + A$
- 6) If $A = \begin{pmatrix} 5 & 3 \\ 7 & 2 \end{pmatrix}$ and $B = \begin{pmatrix} 3 & 2 \\ 4 & 6 \end{pmatrix}$ then, show that
 $(A^T)^T = A$
- 7) If $A = \begin{pmatrix} 3 & 1 & 2 \\ 4 & 9 & 8 \\ 2 & 5 & 6 \end{pmatrix}$ and $B = \begin{pmatrix} 9 & 2 & 5 \\ 0 & 3 & -1 \\ 4 & -6 & 2 \end{pmatrix}$
find $A + B$
- 8) If $A = \begin{pmatrix} 3 & 1 & 2 \\ 4 & 9 & 8 \\ 2 & 5 & 6 \end{pmatrix}$ and $B = \begin{pmatrix} 9 & 2 & 5 \\ 0 & 3 & -1 \\ 4 & -6 & 2 \end{pmatrix}$
Find $B + A$

Part-C

4 x 3 = 12

- 9) Find AB and BA when $A = \begin{pmatrix} -3 & 1 & -5 \\ -1 & 5 & 2 \\ -2 & 4 & -3 \end{pmatrix}$ and $B = \begin{pmatrix} -2 & 4 & 5 \\ 0 & 2 & 1 \\ -1 & 6 & 3 \end{pmatrix}$
- 10) If $A = \begin{pmatrix} 2 & 1 & 0 \\ 1 & 3 & -2 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & 5 \\ 7 & 3 \\ 5 & -2 \end{pmatrix}$ find AB and BA
- 11) If $A = \begin{pmatrix} 3 & 4 \\ 1 & 1 \\ 2 & -1 \end{pmatrix}$, $B = \begin{pmatrix} -2 & 1 \\ 3 & -2 \end{pmatrix}$ verify that $(AB)^T = B^T A^T$
- 12) $A = \begin{pmatrix} 2 & -1 & 4 \\ 3 & 0 & 2 \end{pmatrix}$, $B = \begin{pmatrix} 1 & 0 & -2 \\ 3 & 1 & -5 \end{pmatrix}$ then show that $3(A + B) = 3A + 3B$.

Part-D

1 x 5 = 5

- 13) Verify that $\alpha(A + B) = \alpha A + \alpha B$ where $\alpha = 3$, $A = \begin{pmatrix} 1 & 2 & 0 \\ -1 & 0 & 2 \\ 4 & 3 & 5 \end{pmatrix}$ and $B = \begin{pmatrix} 5 & 3 & -1 \\ 7 & 2 & 4 \\ 3 & 1 & 2 \end{pmatrix}$
