MCQ/One mark questions

1   if $\begin{vmatrix} -3 & 4 \\ 5 & -1 \end{vmatrix} = \begin{vmatrix} 3x & 4 \\ 5 & x \end{vmatrix}$, then x is

   a)1   b) -1   c)± 1 d) 0

2   If $\begin{vmatrix} 3 & 0 \\ 2 & 1 \end{vmatrix} = \begin{vmatrix} 2x & -1 \\ 4 & 2 \end{vmatrix}$, then x is

   a)3   b) $\frac{2}{3}$ c) $\frac{3}{2}$ d) $-\frac{1}{4}$

3   If $x \in N$ and $\begin{vmatrix} x+3 & -2 \\ -3x & 2x \end{vmatrix} = 8, then\ the\ value\ of\ x\ is$

   a)2   b) ± 2 c)-2 d) not defined

4   If $A = \begin{bmatrix} 1 & -2 \\ 4 & 3 \end{bmatrix}$, then | 2A| is

   a) $\begin{vmatrix} 2 & -4 \\ 8 & 6 \end{vmatrix}$ b)$\begin{vmatrix} 2 & -4 \\ 4 & 3 \end{vmatrix}$ c) 22   d) 44

5   Determinant is a number associated to a matrix. State true or false.

6   Evaluate the following determinants

   $a) \begin{vmatrix} 3 & 4 \\ -2 & 5 \end{vmatrix}$ b) $\begin{vmatrix} 2 & 4 \\ -3 & -6 \end{vmatrix}$

7   If $A = \begin{bmatrix} 3 & -5 \\ -4 & 2 \end{bmatrix}$, then find |2A|

Two marks Questions

8   Evaluate $\begin{vmatrix} a+ib & c+id \\ -c+id & a-ib \end{vmatrix}$

9   Evaluate $\begin{vmatrix} cos15° & sin15° \\ sin75° & cos75° \end{vmatrix}$

10   Evaluate the following determinants

   a) $\begin{vmatrix} 3 & 4 & 2 \\ -2 & -3 & 1 \\ 2 & -5 & -4 \end{vmatrix}$ b) $\begin{vmatrix} 4 & 1 & 3 \\ -4 & -2 & 1 \\ -2 & 6 & -5 \end{vmatrix}$

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If $A = \begin{bmatrix} 4 & 1 & 3 \\ -3 & 6 & 4 \\ -2 & -2 & 5 \end{bmatrix}$, then show that $|3A| = 27\,|A|$

12 If $\begin{bmatrix} a & 2 \\ 2 & a \end{bmatrix}$ and $|A|^3 = 125$, then find a.

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