Determinants
Part - 3

ASSERTION-REASON QUESTIONS

In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

(a) *Both A and R are true and R is the correct explanation of A.*

(b) *Both A and R are true but R is not the correct explanation of A.*

(c) *A is true but R is false.*

(d) *A is false and R is also false.*

1. **Assertion (A) :** Determinant is a number associated with a square matrix.

   Reason (R) : Determinant is a square matrix.

2. **Assertion (A) :** If $A = \begin{bmatrix} 5 & x & x+1 \\ 2 & & 4 \end{bmatrix}$, then the matrix A is singular if $x = 3$.

   Reason (R) : A square matrix is a singular matrix if its determinant is zero.

3. **Assertion (A) :** If A is a 3×3 matrix, $|A| \neq 0$ and $|5A| = K|A|$, then the value of $K = 125$.

   Reason (R) : If A be any square matrix of order $n \times n$ and k be any scalar then $|KA| = K^n|A|$.

4. **Assertion (A) :** If $\begin{vmatrix} x & 2 \\ 18 & x \end{vmatrix} = \begin{vmatrix} 6 & 2 \\ 18 & 6 \end{vmatrix}$ then $x = \pm 6$.

   Reason (R) : If A is a skew-symmetric matrix of odd order, then $|A| = 0$.

Answers

1. (c) **2.** (a) **3.** (a) **4.** (b)