DETERMINANTS

MINORS AND COFACTORS

EXERCISE

Q.1 The cofactors of 1, –2, –3 and 4 in $\begin{vmatrix} 1 & -2 \\ -3 & 4 \end{vmatrix}$ are-

(A) 4, 3, 2, 1

(B) –4, 3, 2, –1

(C) 4, –3, –2, 1

(D) –4, –3, –2, –1

Q.2 The minors of the elements of the first row in the determinant $\begin{vmatrix} 2 & -1 & 4 \\ 4 & 2 & -3 \\ 1 & 1 & 2 \end{vmatrix}$ are-

(A) 2, 7, 11

(B) 7, 11, 2

(C) 11, 2, 7

(D) 7, 2, 11

Q.3 If $\Delta = \begin{vmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \\ a_3 & b_3 & c_3 \end{vmatrix}$ and A_2, B_2, C_2 are respectively cofactors of a_2, b_2, c_2 then $a_1A_2 + b_1B_2 + c_1C_2$ is equal to-

(A) $-\Delta$

(B) 0

(C) Δ

(D) None of these

Q.4 If $A = (a_{ij})$ is a 4×4 matrix and c_{ij} is the co-factor of the element a_{ij} in Det (A), then the expression $a_{11}c_{11} + a_{12}c_{12} + a_{13}c_{13} + a_{14}c_{14}$ equals-

(A) 0

(B) – 1

(C) 1

(D) Det. (A)

Q.5 If cofactor of 2x in the determinant $\begin{vmatrix} x & 1 & -2 \\ 1 & 2x & x-1 \\ x-1 & x & 0 \end{vmatrix}$ is zero, then x equals to-

(A) 0 (B) 2

(C) 1 (D) –1

ANSWER KEY

1. (A)

2. (B)

3. (B)

4. (D)

5. (C)