DETERMINANTS

MINORS AND COFACTORS

EXERCISE

Q.1 The cofactors corresponding to the elements 1, –2, –3 and 4 in matrix $\begin{vmatrix} 1 & -2 \\ -3 & 4 \end{vmatrix}$ 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 associated with 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 represent the cofactors of a_2, b_2, c_2 then

expression $a_1 A_2 + b_1 B_2 + c_1 C_2$ is equal to

(A) $-\Delta$ (B) 0   (C) Δ (D) None of these

Q.4 For a 4×4 matrix $A = (a_{ij})$ with c_{ij} as the cofactor of the element a_{ij} in Det (A),

the expression $a_{11}c_{11} + a_{12}c_{12} + a_{13}c_{13} + a_{14}c_{14}$ is equal to

(A) 0   (B) – 1   (C) 1   (D) Det. (A)

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

(A) 0   (B) 2   (C) 1   (D) –1

ANSWER KEY

1.   (A)

2.   (B)

3.   (B)

4.   (D)

5.   (C)