Determinants - Class XII

Related Questions with Solutions

Questions

Quetion: 01

If α, β, γ are the roots of $x^3 - 3x + 2 = 0$, then the value of the determinant $\begin{vmatrix} \alpha & \beta & \gamma \\ \beta & \gamma & \alpha \\ \gamma & \alpha & \beta \end{vmatrix}$ is equal to

A. -3
B. 2
C. 1
D. None of these

Solutions

Solution: 01

We have

$$\begin{vmatrix} \alpha & \beta & \gamma \\ \beta & \gamma & \alpha \\ \gamma & \alpha & \beta \end{vmatrix} = \begin{vmatrix} \alpha+\beta+\gamma & \beta & \gamma \\ \alpha+\beta+\gamma & \gamma & \alpha \\ \alpha+\beta+\gamma & \alpha & \beta \end{vmatrix} \quad [C_1 \to C_1 + C_2 + C_3]$$

$= 0 \qquad [\because \alpha + \beta + \gamma = 0$ from the equation $x^3 - 3x + 2 = 0]$

Correct Options

Answer:01
Correct Options: D