If $A = \begin{vmatrix} \omega^{501} & \omega^{502} & \omega^{503} \\ \omega^{1101} & \omega^{1102} & \omega^{1102} \\ \omega^{1501} & \omega^{1502} & \omega^{1503} \end{vmatrix}$, where ω is cube root of unity, then the value of A is:

$$\omega^{3n+1} = \omega, \omega^{3n+2} = \omega^2, \omega^3 = 1$$

$$A = \begin{vmatrix} 1 & \omega & \omega^2 \\ 1 & \omega & \omega^2 \\ \omega & \omega^2 & 1 \end{vmatrix}$$

$\because$Two rows are same

$\therefore$ Determinant is zero

A. 1

B. 0

C. -1

D. ω^2

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