

Find λ & μ if $(2i + 6j + 27k) \times (i + \lambda j + \mu k) = \vec{0}$

$$\text{Given } (2i + 6j + 27k) \times (i + \lambda j + \mu k) = \vec{0}$$

$$\therefore \begin{vmatrix} i & j & k \\ 2 & 6 & 27 \\ 1 & \lambda & \mu \end{vmatrix} = \vec{0}$$

$$i(6\mu - 27\lambda) - j(2\mu - 27) + k(2\lambda - 6) = \vec{0}$$

Equating coefficient s

$$6\mu - 27\lambda = 0, \quad 2\mu - 27 = 0 \quad 2\lambda - 6 = 0$$

$$\therefore \mu = \frac{27}{2} \text{ and } \lambda = 3$$