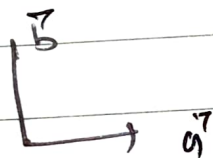


$\therefore (\vec{b} \times \vec{a})$ is perpendicular to both $\vec{a}$ and $\vec{b}$

So $\vec{a}$ and $\vec{b}$ lies in same plane



So cross product of $(\vec{b} \times \vec{a})$ again with

$\vec{b}$ result in a vector

co-planar with $\vec{a}$ and $\vec{b}$ both

$\therefore$ option 3 is correct