# Class XI Rotational Motion

Thursday, November 11, 2021 8:00 PM

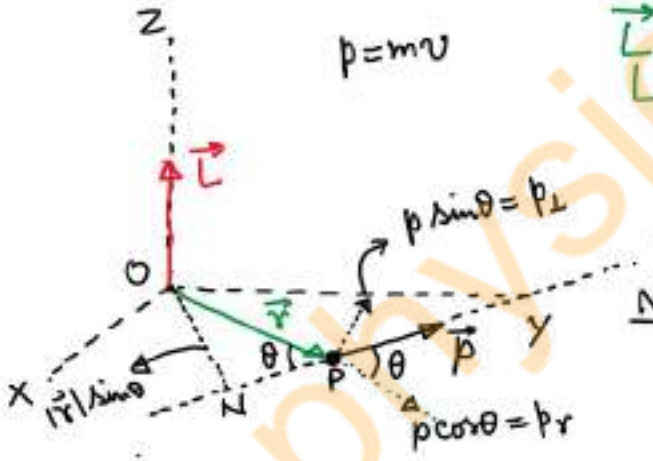
$m \quad \vec{v} \quad \vec{p} = m\vec{v}$

## Angular Momentum :

Moment of Linear momentum about a point is called angular Momentum.

The quantity angular momentum is the rotational analogue of linear momentum i.e. angular momentum plays the similar role in rotational motion as momentum plays in translational motion.

It could also be referred to as moment of (linear) momentum.




$p = mv$

$\vec{L} = \vec{r} \times \vec{p}$ — (1)

↳ angular Momentum

$|\vec{L}| = |\vec{r}| \cdot |\vec{p}| \sin\theta$ — (2)

SI unit = $m \times kgm/s = kg\,m^2s^{-1}$

Note: Dimensional formula = $[M^1L^2T^{-1}]$

$\vec{\tau} = \vec{r} \times \vec{F}$ $\quad \vec{J}$