

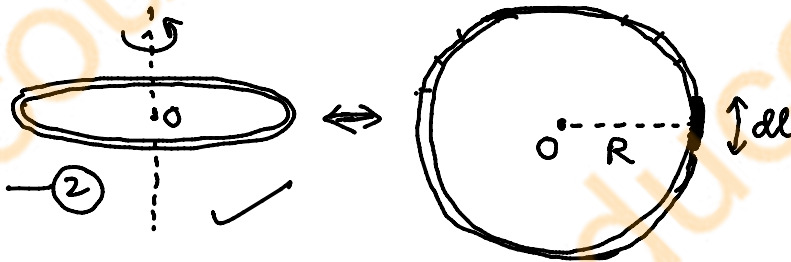
$$I = \frac{M}{L} \left\{ \frac{L^3}{24} - \left( -\frac{L^3}{24} \right) \right\}$$

$$I = \frac{M}{L} \cdot \frac{L^3}{12} \Rightarrow \boxed{I = \frac{ML^2}{12}}$$

Moment of Inertia of a Uniform Circular Ring:  
(about an axis passing through its centre and perpendicular to its plane)

$$\lambda = \frac{M}{2\pi R} \quad \text{--- (1)}$$

$$dm = \lambda \cdot dl = \frac{M}{2\pi R} \cdot dl \quad \text{--- (2)}$$



$$I = \int r^2 dm$$

$$I = \oint R^2 \cdot \frac{M}{2\pi R} \cdot dl \Rightarrow I = \frac{MR}{2\pi} \oint dl$$

$$I = \frac{MR}{2\pi} \cdot (2\pi R)$$

$$\boxed{I = MR^2} \quad \text{--- (2)}$$