

① Theorem of Perpendicular and Parallel axis (Only see results; leave the proof)

* Results of these theorems will be used to find out Moment of inertia of given figures.

- (1) Moment of Inertia of Solid & Hollow Sphere
- (2) M.O.I of Spherical Shell
- (3) M.O.I of Solid & Hollow Cylinder
- (4) M.O.I of Solid bar of Rectangular cross-section
- (5) Flywheel
- (6) M.O.I of Irregular body (Torsion Pendulum)
- (7) Acceleration of a body rolling down an inclined plane
- (8) Kinetic Energy of a Body Rolling on a Horizontal Plane

Unit-II (Properties of Matter - Elasticity)

- Hooke's Law, Stress-Strain Graph,
- Types of Elasticity
 - (1) Young's Modulus
 - (2) Bulk Modulus
 - (3) Modulus of Rigidity
 - (4) Poisson's Ratio
- # Also Prove that Poisson's Ratio for perfectly incompressible body is $\frac{1}{2}$
- Energy of Strained Bodies
- Relations b/w the Elastic Constants
- Limiting values of Poisson's Ratio
- Torsion of Cylinder & Twisting Couple
- Maxwell Needle Method for Determination of Modulus of Rigidity
- Bending of Beams (Upto $\frac{Y}{R} \leq (s_a) z^2$
= Bending Moment)