

Assignment No. 1.

Topic: Moment of Inertia.

Q1-1

- 1) Define Moment of Inertia. State its S.I. unit.
- 2) Define radius of gyration and state its application.
- 3) Define polar moment of Inertia.
- 4) State parallel axis theorem with neat sketch.
- 4) State & explain perpendicular axis theorem.
- 5) Write all standard formulae of Moment of Inertia with neat sketch.

Q1-2

- 1) Calculate Moment of Inertia of an angle section $150 \times 120 \times 10$ mm about centroidal x-x axis.
- 2) Calculate radius of gyration for Hollow circular lamina of external diameter 120 mm & internal diameter 90 mm.
- 3) Find centroidal moment of inertia about x-x axis of symmetrical 'I' section with flange 200×20 mm and web 10×250 mm.
- 4) Find I_{xx} & I_{yy} of an channel section $130 \times 110 \times 15$ mm.
- 5) Calculate M.I. of right angle triangle, base is 80 mm and height is 120 mm about its apex and about 120 mm side.
- 6) Find moment of inertia of a 'T' section with flange 150×10 mm and web 10×150 mm about its centroidal x-x axis.
- 7) Find M.I. of given fig. about AB.

