UNIT-II – Test

I. Answer all the following.

1. (a) Define Escape velocity & orbital velocity. Derive an expressions for escape & orbital velocity (8m)

(b) Write a note on GPS & NAVIC (4m)

2. (a) Define Binding Energy of Satellite. Derive an eqⁿ for Binding energy of Satellite (i) orbiting around the earth. (ii) Stationary on the earth. (8m)

(b) Define & Explain Weightlessness. (2m)

(c) Write a note on Geostationary Satellite. (2m)

3. (a) State & Explain (i) Parallel axis Theorem (ii) Perpendicular axis Theorem. (8m)

(b) Give Theory of Compound Pendulum (4m)

4. (a) Define Moment of Inertia & Radius of Gyration. Derive expressions of MI of a circular disc
(i) About an axis through its centre perpendicular to its plane.
(ii) MI of a Disc about its Diameter.
(iii) MI about a Tangent. (8m)

(b) Derive MI of a Rectangular Lamina about.
(i) An axis through its centre & parallel to one of its sides.
(ii) About one side (4m)