

Unit-I

Forces, Types of forces - Resultant of three forces related to triangle acting at a point - Resultant of several forces acting on a particle - Equilibrium of a particle under three forces - Equilibrium of a particle under several forces - Limiting Equilibrium of a particle on an inclined plane.

Unit-II

Moment of a forces - General motion of a Rigid body - equivalent system of forces - parallel forces - forces along the sides of the triangle - Couples - Resultant of several Coplanar forces - Equations of line of action of the resultant - Equilibrium of a rigid body under three Coplanar forces. unit III

Unit-III

Reduction of Coplanar forces into a force and Couple - Law of friction - Cone of friction and angle of friction - Applications involving frictional forces. unit IV

Unit-IV

Center of mass - Center of mass of a triangular Lamina - Three particles of same mass - Three particles of certain masses - Uniform rods forming a triangle - Lamina in the form of a trapezium and Solid tetrahedron - Center of mass using integration - Circular arc - Circular Lamina - elliptic Lamina - Solid hemisphere - Solid right Circular Cone - hemispherical shell - hollow right Circular Cone - Cardiodal Lamina - Center of mass of a non-homogeneous Solid. unit V