

STATICS

UNIT I

Forces & Equilibrium - Forces – Resultant of two forces – Three forces related to a triangle –Equilibrium of a particle under three or more forces.

UNIT II

Forces on a rigid body - Moment – Equivalent systems of forces- Parallel forces –Varignon’s Theorem- Forces along a Triangle – Couples –Equilibrium of a rigid body under three coplanar forces – Reduction of coplanar forces into a force & a couple .

UNIT III

Friction – Laws of Friction – Coefficient of Friction, Angle & Cone of Friction – Limiting equilibrium of a particle on a rough inclined plane, Tilting of a body - Simple Problems.

UNIT IV

Virtual Work- Principle of Virtual Work – applied to a body or a system of bodies in equilibrium –Equation of Virtual Work –Simple Problems.

UNIT V

Strings - Equilibrium of Strings under gravity – Common Catenary – Suspension bridge

TEXT BOOK(S)

- [1] P.Duraipandiyan, Mechanics (Vector Treatment), S.Chand & Co. June 1997
UNIT – I - Chapter 2 & Chapter 3 Section 3.1
UNIT – II - Chapter 4 Section 4.1, 4.3 to 4.9 & Chapter 5 Section 5.1
UNIT – III - Chapter 2 Section 2.1, Chapter 3 Section 3.2, Chapter 5 Section 5.2
UNIT – IV - Chapter 8
UNIT – V - Chapter 9

REFERENCE(S)

- [1] M.K.Venkataraman, Statics, Agasthiyar Publications, 2002.
- [2] A.V.Dharmapadham, Statics, S. Viswanathan Publishers Pvt Ltd., 1979.
- [3] S.L. Lony, Elements of Statics and Dynamics, Part-I, A.I.T. Publishers, 1991.