Subject: Mechanics	N
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Contents	No. of
	nours
Chapter I: Vectors Introduction, Unit System, Dimensions, Vectors and scalar, Vector algebra, Vector products (dot and cross), Triple products, Application of vectors, problems.	9
Chapter 2 :Motion in a straight line	
Motion, Position, Average velocity, Instantaneous velocity, Average Instantaneous acceleration, Motion with constant acceleration, Freely falling bodies, Problems.	3
Chapter 3 : Motion in a plane	
Motion in two dimensions (plane), Motion in three dimension, Component of acceleration, motion of projectile, Trajectory of a projectile, Application on a projectile motion, Problems.	6
Chapter 4 : Circular Motion	
Uniform of circular motion, Motion in a vertical circle, Radial or center petal acceleration, center petal force, Problems.	9
Chapter 5 : Forces	
Newton 's laws, Mass, Weight, Friction(Statics and dynamics), Friction laws, Application of force, Atood mechanics, Center mass, Equilibrium, Problems.	12
Chapter 6 : Work and Energy	
Work done by constant force, work done by varying force, work and	9

Contents	No. of hours
kinetic energy, Gravitational potential energy, Elastic potential	
energy, Power, Power and velocity, Problems.	
Chapter 7 : Rotation of Rigid Bodies Introduction, Angular velocity, Angular acceleration, Rotation with constant linear velocity, Kinetic energy of rotation, moment Inertia, Calculation of moment, Inertia of bodies (Cylinder, Sphere, Ring,	12
Disc), Radius of gyration, Energy of a body rolling on a horizontal	
plane, Work and power rotational motion, Torque, Problems.	
Chapter 8 : Momentum and Impulse Momentum and linear impulsive, Conservation law of linear momentum, Angular momentum and impulse, Relation between momentum and impulse in linear and rotational motion, Energy of Rotational motion of body.	9
Chapter 9 : Collisions Collisions, Elastic Collisions in one dimension, Inelastic collision, Collisions in two dimension, problems.	9
Chapter 10 : Conservation of Energy Conservation laws, Conservation and non- Conservation force, Conservation energy, Potential energy curve, Problems.	3
Chapter 11 : Universal Gravitation Meaning of gravitation, Newton 's law of gravitation, Definition of gravitation, Gravitation field, Gravitation potential, Intensity of gravitation, Kepler 's law, Artificial satellite orbital and escape velocity, Problems.	9

References:

1. University Physics by Francis W. Sears, Mark W. Zemanseky and Hugh D. Young, 1982.

2. Introduction to Physics by Jojn D. Cutnell, Kenneth W. Johnson 8th.Ed., 2010.