DRIDGE COOKSESTODT MATERIAL - CLASS XI (FITTSICS)

TOPIC	Content	LEARNING OBJECTIVES
Mathematica	Binomial theorem , integral	Students will be able to apply all the
l Tools	calculus, differential calculus,	mathematical tools in solving numericals.
	trigonometry	
Kinematics	Instantaneous speed, average	Students will be able to:
	speed, instantaneous acceleration,	express the motion of an object in terms of
	average acceleration, uniform	fundamental and derived quantities.
	acceleration, s-t, v-t, a-t graphs,	describe the motion of an object traveling
	equations of method using graph	in a straight line or in one dimension.
	and calculus method, free fall,	define position, displacement,
	relative velocity.	distance, speed and velocity.
		define the concepts of
		instantaneous velocity and average
1		velocity.
		define the concepts of instantaneous
1		acceleration and average
		acceleration.
		calculate the position, velocity, and
		acceleration of an object moving in
		a straight line.
		describe motion of an object in a
		straight line with constant acceleration
		with the help of s-t, v-t and a-t graphs.
		derive equations of motion for a
		uniformly accelerated motion using grap
		and calculus method.
		describe free fall in one dimension whe
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it undergoes constant acceleration due to gravity. describe relative motion and hence calculate relative velocity of an object with respect to the other. solve numerical problems to calculate position, velocity and acceleration of the body. draw and interpret the graphs for uniform and non-uniform motion. apply the kinematic equations of motion i various situation based problems. Motion in Cartesian coordinates, vector and perform vector algebra describe the Cartesian coordinate plane its types, vector representation, resolution of a vector in plane, system in two and three triangle and parallelogram law of dimension systems. vector addition, equilibrium, explain the sum of vectors using relative velocity and equations of head to tail rule. motion in two and three define resultant, negative, unit, dimensions, projectile motion. null, position and equal vectors resolve a vector into its rectangular components. determine the sum of vectors using triangle law of addition and parallelogram law of addition. define equilibrium of vectors. rewrite equations of motion in two and three dimensions. Solve numerical problems on

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		equations of motion in two and three
		dimensions.
		Determine relative velocity for
		motion in two and three dimensions
		define projectile, projectile motion
		and trajectory of projectile.
		derive the relation for time of flight,
		maximum height and horizontal range
		of a projectile.
Laws of	(1)Intuitive concept of force.	The Objective of this chapter is to make the
Motion	Inertia, Newton's first law of	student aware of Dynamics of circular whic
	motion;	solves many problems in our society.
	momentum and Newton's second	
	law of motion;	Learners will be able to understand the
	impulse; Newton's third law of	Concept of force along all the
	motion. Law of conservation of	three Newton's laws of motion. Learners
	linear momentum and its	will be able to understand the Concept of
	applications. (2)Equilibrium of	concurrent forces and dynamics of circular
	concurrent forces. Static and kinetic	motion
	friction, laws of friction, rolling	
	friction, lubrication. (3)Dynamics of	
	uniform circular motion:	
	Centripetal force, examples of	
	circular motion (vehicle on level	
	circular road, vehicle on banked	
	road).	
Work,	(1)Work done by a constant force	The Objective of this chapter is to clear the
Energy,	and a variable force; kinetic energy,	concept Work, Energy and Power and its
Power	work-energy theorem, power.	application in our daily life which helps us t

(2)Notion of potential energy, potential energy of a spring, conservative forces; conservation of mechanical energy (kinetic and potential energies); non-conservative forces; motion in a vertical circle, elastic and inelastic collisions in one and two dimensions.

approach and to solve the Problem technically.

Learners will be able to understand the Bas concept of work done along with its mathematical analysis and Classification of work. Learners will be able to understand t Concept of mechanical energy, different forms energy and its conservation with necessary mathematical analysis. Learners will be able to understand the Mechanical power along with its

Practical and SI units.

Gravitation

(1)Kepler's laws of planetary motion. The universal law of gravitation.

Acceleration due to gravity and its variation with altitude and depth. (2)Gravitational potential energy; gravitational potential.

Escape velocity, orbital velocity of a

satellite. Geostationary satellites.

To make the learners to understand the concept of gravitational force and gravity with laws of planetary motion and detailed mathematical analysis of acceleration due gravity above and below the surface of ear To make the learners to understand the concept of elasticity and rigidity of a body with stress- strain analysis and applying it to solve real life problems.

Learners will be able to understand Concept of gravitational force between two bodies a its conservative nature. Learners will be able to understand the Concept of variation of acceleration due to gravity with height and

depth.