Board of Intermediate Education, Andhra Pradesh.

Intermediate – I Year Syllabus w.e.f. 2012 – 13

Subject : PHYSICS – I

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	 Introduction
	      The international system of units
	 Measurement of length
	 Measurement of mass
	 Measurement of time
	      Accuracy, precision of instruments and errors in measurement
	 Significant figures
	 Dimensions of physical quantities
	 Dimensional formulae and dimensional equations
	Dimensional analysis and its applications	

3	**MOTION IN A STRAIGHT LINE** **3.1** Introduction Position, path length and displacement Average velocity and average speed Instantaneous velocity and speed Acceleration Kinematic equations for uniformly accelerated motion Relative velocity	

4	**MOTION IN A PLANE**
	 Introduction
	 Scalars and vectors
	 Multiplication of vectors by real numbers
	      Addition and subtraction of vectors. graphical method
	 Resolution of vectors
	 Vector addition. analytical method
	 Motion in a plane
	 Motion in a plane with constant acceleration
	 Relative velocity in two dimensions
	      Projectile motion
	Uniform circular motion	

5	**LAWS OF MOTION** Introduction Aristotle's fallacy The law of inertia	

	Newton's first law of motion Newton's second law of motion Newton's third law of motion Conservation of momentum Equilibrium of a particle Common forces in mechanics, friction Circular motion Solving problems in mechanics	
6	**WORK, ENERGY AND POWER** Introduction Notions of work and kinetic energy : The work- energy theorem Work Kinetic energy Work done by a variable force The work-energy theorem for a variable force The concept of potential energy The conservation of mechanical energy The potential energy of a spring Various forms of energy : the law of conservation of energy Power Collisions	
7	**SYSTEM OF PARTICLES AND ROTATIONAL MOTION** Introduction Centre of mass, Centre of Gravity Motion of centre of mass Linear momentum of a system of particles Vector product of two vectors Angular velocity and its relation with linear velocity, Kinematics of rotational motion about a fixed axis Torque and angular momentum Equilibrium of a rigid body Moment of inertia Theorems of perpendicular and parallel axes Dynamics of rotational motion about a fixed axis Angular momentum in case of rotations about a fixed axis Rolling motion	
8	**OSCILLATIONS** Introduction Periodic and oscillatory motions Simple harmonic motion Simple harmonic motion and uniform circular motion Velocity and acceleration in simple harmonic motion Force law for Simple harmonic Motion Energy in simple harmonic motion Some systems executing Simple Harmonic Motion	

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13	**THERMODYNAMICS** Introduction Thermal equilibrium Zeroth law of thermodynamics Heat, internal energy and work	

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	Specific heat capacity
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