COURSE STRUCTURE

CLASS-XI Theory (042)
PHYSICS

Three Hours

Unit I	Physical World and Measurement	03
Unit II	Kinematics	10
Unit III	Law of Motion	10
Unit IV	Work Energy & Power	06
Unit V	Motion of System of Particles and Rigid Body	06
Unit VI	Gravitation	05
Unit VII	Properties of Bulk Matter	10
Unit VIII	Thermodynamics	05
Unit IX	Behaviour of Perfect Gas and Kinetic Theory of Gases	05
Unit X	Oscillation Sand Waves	10
	TOTAL	70

S. No.	Month	Date	Days	Topics
1.	JUNE	**June 26 to July 03-2010 (June 30 LWD)**	7	Unit 1 : Physical World and Measurement Physic-Scope and excitement : nature of physical law & :Physics, technology and society. Need for measurement: system of units, SI Unit, Fundamental and derived units length mass and time measurement: accuracy and precision of measuring instruments. Errors in Measurement, Significant figures,
2.	JULY	**July 5 to July 9-2010**	5	Dimensions of physical quantities, dimensional analysis and its application.
3.		**12 July to July17**	6	Unit 2 : Kinematics : Frame of reference Motion in a straight line : Position time graph, speed and velocity, uniform and nonuniform motion, average speed and instantaneous velocity, uniformly accelerated motion velocity time, position time graphs, relations for uniformly accelerated motion (graphical treatment)
4.		**19 July to 24 July 2010**	6	Elementary concepts of differentiation and integration for describing motion, scalar and vector quantities, position and displacement vectors general vectors and notation, equality of vectors, multiplication of vectors by area number, addition and subtraction of vectors Relative Velocity.
5.		**26 July to 30 July 2010 (31 July LWD)**	6	Unit Vector, Resolution of Vector in a plane, Rectangular components, Motion in a plane cases of uniform velocity and uniform acceleration projective motion, uniform circular motion.
6.	AUGUST	**2 Aug. to 7 Aug. 2010**	6	Unit –III Laws of Motion Intutive concept of force, inertia, Newton's firs law of motion, momentum and Newton's s econd law of motion, impulse, Newton's third law of motion. Law of conservation of linear momentum and its applications,
7.		**9 Aug. to 13 Aug. 2010**	5	equilibrium of co-current forces, static and kinetic friction, law of friction rolling friction. Dynamics of Uniform circular motion, centripetal force example of circular motion (vehicles on level circular road, vehicle on banked roads)
8.		**16 Aug. to 21 Aug. 2010 (17 Aug. R.H.)**	6	Unit IV : Work energy and power scalar product of vectors, work done by a constant force and a variable force, kinetic energy work energy thereon, power,
9.		**23 Aug. to 28 Aug. 2010**	6	Notion of potential energy, potential energy of a spring. Conservative force, conservation of mechanical energy kinetic and potential energy, Non conservative forces. Elastic and inelastic collisions in one and two dimensions
10	SEPTEMBER	**30 Aug. to 4 Sep. 2010**	5	Unit –V Motion of System of particles and Rigidbody – centre of mass of a two particle system, Momentum

		(31 Aug. LWD & 2 Sep. G.H.)		conservation and centre of mass motion, centre of Mass of rigid body, centre of mass of a uniform rod, vector product of vectors, Moment of forces, torque, angular Momentum. Conservation of angular momentum with some examples
11		**6 Sep. to 10 Sep. 2010**	4	Revision for 1st Term Exam
12		**8 Sep. 2010**		FIRST CCEP
13		**13 Sep. to 20 Sep. 2010**		FIRST TERM EXAM
14		**21 Sep. to 25 Sep. 2010**	5	Discussion of question paper Equilibrium of rigid bodies, Rigid body rotation and equations of rotational motion, Comparison of Liner and rotational motions. Moment of inertia, radius of gyration, values of moment of inertia for simple geometrical object (No derivation)
15		**27 Sep. to 30 Sep 2010**	4	Statement of Parallel and perpendicular axes theorems and their application. Unit-VI : Gravitation Keplers laws of planetary motion, The universal law of gravitation.
16		**01 Oct. to 17 Oct. 2010**		**CLOSURE OF SCHOOL DUE TO COMMON WEALTH GAMES (1-10-10 TO 16-10-10 AUTUMN BREAK)**
17		**18 Oct. to 23 Oct. 2010**	5	Acceleration due to gravity & its variation with altitude and depth Gravitational potential energy, gravitational potential. Escape Velocity, Orbital Velocity of satellite, Geo -stationary satellites
18		**25 Oct. to 29 Oct. 2010** **30 Oct. (LWD)**	6	Unit VII Properties of bulk matter, Elastic behaviour stress strain relationship Hooke's Law Yong modulus, bulk modulus, shear modulus of rigidity. Pressured due to a fluid Column, Pascal's law & its applications (hydraulic lift and hydraulic brakes)
19		**01 Nov. to 06 Nov. 2010**	5	Effect of gravity on fluid pressure. Viscosity, stokes law, terminal velocity, Reynold's number, stream line and turbulent flow, Bernoullis theorem and its applications
20		**8 Nov. 12 Nov. 2010**	5	Surface energy, surface tension, angle of contact. Application of Surface Tension ideas of drop, bubbles and capillary rise.
21		**15 Nov. to 20 Nov. 2010** **17 Nov (G.H.)**	5	Heat and Temperature, thermal explosion, specific heat, calorimeter, change of state Latent Heat, transfer of heat – conduction, convection, radiation, thermal conductivity, Newtons law of cooling.
22		**22 Nov. to 27 Nov. 2010**	6	Unit VIII : Thermodynamics : Thermal equilibrium and definition of temperature (Zeroth law of thermodynamics) Heat work and internal energy, First law of thermodynamics.
23		**29 Nov. to 04 Dec. 2010**	6	Second laws of thermodynamics, reversible and irreversible processes, heat engines and refrigerator.

		03 Nov. (LWD)		
24		**06 Dec to 09 Dec. 2010**	4	REVISION
25		**10 Dec. 2010**		SECOND CCEP
26		**13 Dec. to 22 Dec. 2010**		SECOND TERM EXAM
27		**23 Dec. to 24 Dec. 2010**	2	Unit IX : Behaviour of perfect gas and kinetic theory, equation state of perfect gas work done on compressing a gas.
28		**27 Dec. 2010 to 07 Jan. 2011**		WINTER BREAK
29		**10 Jan. to 15 Jan. 2011**	6	Kinetic theory of gases-assumptions, concept of pressure kinetic energy and temp mean square speed of gas molecules, degrees of freedom, law of equipa rtition of energy (statement only) Application to specific heats of gases.
30		**17 Jan. to 22 Jan. 2011**	6	Concept of mean free path, Avogadro's number Unit X : Oscillations and wares, Periodic motion period, frequency displacement as a function of time, periodic function simple harmonic motion (SHM) and its equation, Phase, Oscillations of a spring, Restoring Force and force constant.
31		**24 Jan. to 29 Jan. 201**	5	Energy in SHM Kinetic and potential energy, simple pendulum, derivation of expression for its time period, free forced and damped oscillations (qualitative ideas only) resonance. Wave motion longitudinal and transverse wares speed of wave motions.
32		**31 Jan. to 5 Fe. 2011**	6	Displacement relation for a progressive ware, principles of superposition of waves, Reflection of Waves standing waves in strings and organ pipes fundamental mode and harmonics,
33		**7 Feb. 2011 to 11 Feb. 2011**	5	Beats, Doppler effect
34		14 to 19 Feb. 2011	6	Revision
35		21 to 28 Feb. 2011	6	Revision

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