

Lesson Plan

Physics (2nd Semester)

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Subject: Applied Physics-II

Week	Theory		Practical	
	Lecture Day	Topic (Including Assignments)	Practical Day	Topic
1st	1	Unit1:- Wave Motion and its Applications 1.1 Waves: Definition ,types(mechanical and electromagnetic wave) 1.2 Wave Motion -transverse and longitudinal with examples, terms used in wave motion like displacement,amplitude,time period,frequency,wave length,wave velocity,relationship among wave velocity,frequency and wave length	1	1) Familiarization with apparatus (resistor, rheostat, key ammeter, voltmeter, telescope, microscope etc. (Group-1)
	2	1.3 Simple Harmonic Motion(SHM): Definitions , Examples 1.4 Cantilever : Definitions , Formula of Time Period(Without Derivation)	2	1) Familiarization with apparatus (resistor, rheostat, key ammeter, voltmeter, telescope, microscope etc. (Group-2)
2nd	1	1.5 Free, forced and resonant vibrations with examples. 1.6 Sound waves: Types (infrasonic, audible, ultrasonic) on the basis of frequency, noise, coefficient of absorption of sound, echo	1	2) To find the time period of a simple pendulum. (Group-1)
	2	Unit2:- Optics:- 2.1 Reflection and refraction of light with laws, refractive index 2.2 Lens: Introduction, lens formulae (no derivation), power of lens and simple numerical problems	2	2) To find the time period of a simple pendulum. (Group-2)
3rd	1	2.3 Total internal reflection and its applications, critical angle and conditions for total internal reflection	1	3) To study variation of time period of simple pendulum with change in length of pendulum.(Group-1)
	2	2.4 Superposition of waves (concept only), definition of interference, diffraction and polarization of waves	2	3) To study variation of time period of simple pendulum with change in length of pendulum. (Group-2)

4th	1	2.5 Introduction of Microscope, Telescope and their applications	1	4) To determine and verify the time period of Cantilever (Group-1)
	2	UNIT3:- Electrostatics and Electricity 3.1 Electric charge, unit of charge, conservation of charge 3.2 Coulomb's law of electrostatics Assignment 1	2	4) To determine and verify the time period of Cantilever.(Group-2)
5th	1	First Sessional Test(Tentative)	1	Revision and Viva-voce (Group-1)
	2	First Sessional Test(Tentative	2	Revision and Viva-voce (Group-2)
6th	1	3.3 Electric field, electric lines of force (definition and properties), electric field intensity due to a point charge 3.4 Definition of electric flux, Gauss law (statement and formula)	1	5) To verify Ohm's laws by plotting a graph between voltage and current (Group-1)
	2	3.5 Capacitor and capacitance (with formula and unit) 3.6 Electric current and its SI Unit, direct and alternating current	2	5) To verify Ohm's laws by plotting a graph between voltage and current (Group-2)
7th	1	3.7 Resistance, conductance (definition and unit) 3.8 Series and parallel combination of resistances	1	6) To study colour coding scheme of resistance. (Group-1)
	2	3.9 Ohm's law (Statement and formula) Assignment 2	2	6) To study colour coding scheme of resistance. (Group-2)
8th	1	Unit 4 Classification of Materials and their Properties 4.1 Definition of energy level, energy bands 4.2 Types of materials (conductor, semiconductors (introduction only)	1	7) To verify laws of resistances in series combination (Group-1)
	2	4.3 Introduction to magnetism, type of magnetic materials: Diamagnetic, paramagnetic and ferromagnetic materials with examples 4.4 Magnetic field, magnetic lines of force, magnetic flux 4.5 Electromagnetic induction (definition)	2	7) To verify laws of resistances in series combination (Group-2)
9th	1	Second Sessional Test(Tentative)	1	Revision and Viva-voce (Group-1)
	2	Second Sessional Test(Tentative)	2	Revision and Viva-voce (Group-2)
10th	1	Unit5 Modern Physics 5.1 Laser: Introduction, principle,	1	8) To verify laws of resistance in parallel

		absorption, spontaneous emission, stimulated emission population inversion		combination .(Group-1)
	2	5.2 Engineering and medical applications of laser	2	8) To verify laws of resistance in parallel combination.(Group-2)
11th	1	5.3 Fibre optics: Introduction to optical fibers (definition, principle and parts), light propagation, fiber types (mono-mode, multi-mode), applications in medical, telecommunication and sensors.	1	9) To find resistance of galvanometer by half deflection method (Group-1)
	2	5.4 Nanotechnology: Introduction, definition of nanomaterial's with examples, properties at nano scale, applications of nanotechnology (brief)	2	9) To find resistance of galvanometer by half deflection method (Group-2)
12th	1	Assignment 3	1	10) To verify laws of reflection of light using mirror (Group-1)
	2	Revision of above topics	2	10) To verify laws of reflection of light using mirror (Group-2)
13th	1	Third Sessional Test(Tentative)	1	Revision and Viva-voce (Group-1)
	2	Third Sessional Test(Tentative)	2	Revision and Viva-voce (Group-2)
14th	1	Revision of above topics	1	11) To verify laws of refraction using glass slab.(Group-1)
	2	Revision of above topics	2	11) To verify laws of refraction using glass slab.(Group-2)
15th	1	Revision of above topics	1	12) To find the focal length of a concave lens, using a convex lens.(Group-1)
	2	Revision of above topics	2	12) To find the focal length of a concave lens, using a convex lens.(Group-2)