Lesson Plan

Name : Sanjula Yadav
Discipline : Common for all branches
Semester : 2nd
Subject : Applied Physics II
Code : 220023
Duration : 6 month
Session : 2022-23

Theory		Practical
Lecture	**Topic**	**Topic**
1.	Waves: definition, types (mechanical and electromagnetic wave)	Familiarization with apparatus (resistor, rheostat, key, ammeter, voltmeter, telescope, microscope etc.)
2.	Wave motion- transverse and longitudinal with examples	
3.	terms used in wave motion like displacement, amplitude, time period, frequency, wavelength, wave velocity;	
4.	relationship among wave velocity, frequency and wave length	
5.	Simple harmonic motion (SHM): definition, examples	Revision & Checked practical note book
6.	Cantilever: definition, formula of time period (without derivation)	
7.	Free, forced and resonant vibrations with examples	
8.	Sound waves: types (infrasonic, audible, ultrasonic) on the basis of frequency, noise,	To find the time period of a simple pendulum.
9.	coefficient of absorption of sound, echo	
10.	Reflection and refraction of light with laws, refractive index	
11.	Lens: introduction, lens formulae (no derivation),	To study variation of time period of a simple pendulum with change in length of pendulum.
12.	power of lens and simple numerical problems	
13.	Total internal reflection and its applications,	

14.	critical angle and conditions for total internal reflection	
15.	Superposition of waves (concept only), definition of Interference, Diffraction and Polarization of waves	
16.	Introduction to Microscope, Telescope and their applications	Revision & Checked practical note book
17.	Electric charge, unit of charge,	
18.	conservation of charge Coulomb's law of electrostatics	
19.	Electric field, electric lines of force (definition and properties),	To determine and verify the time period of Cantilever.
20.	electric field intensity due to a point charge	
21.	Definition of electric flux, Gauss law (statement and formula)	
22.	Capacitor and capacitance (with formula and unit)	Revision & Checked practical note book
23.	Electric current and its SI Unit, direct an alternating current	To verify Ohm's laws by plotting a graph between voltage and current.
24.	Resistance, conductance (definition and unit) Series and parallel combination of resistances	
25.	Ohm's law (statement and formula).	Revision & Checked practical note book
26.	Definition of energy level, energy bands	
27.	Types of materials (conductor, semiconductor, insulator and dielectric) with examples	To study colour coding scheme of resistance.
28.	intrinsic and extrinsic semiconductors (introduction only	Revision & Checked practical note book
29.	Introduction to magnetism, type of magnetic materials: diamagnetic, paramagnetic and ferromagnetic materials with examples	To verify laws of resistances in series combination.
30.	Magnetic field, magnetic lines of force, magnetic flux	
31.	Electromagnetic induction (definition)	Revision & Checked practical note book

32.	introduction, principle, absorption, spontaneous emission	
33.	stimulated emission, population inversion	To verify laws of resistance in parallel combination.
34.	Engineering and medical applications of laser	
35.	Fibre optics: introduction to optical fibers (definition, principle and parts), light propagation,	Revision & Checking of practical note books
36.	fiber types (mono-mode, multi-mode),	
37.	applications in medical, telecommunication and sensors	To find resistance of galvanometer by half deflection method.
38.	Nanotechnology: introduction, definitior of nanomaterials with examples	
39.	properties at nanoscale,	Revision & Checking of practical note books
40.	applications of nanotechnology (brief)	To verify laws of reflection of light using mirror.
41.	Revision of unit 1	Revision & Checking of practical note books
42.	Revision of unit 1	To verify laws of refraction using glass slal
43.	Revision of unit 2	Revision & Checking of practical note books
44.	Revision of unit 2	To find the focal length of a concave lens, using a convex lens.
45.	Revision of unit 3	Revision & Checking of practical note books
46.	Revision of unit 3	Revision & Checking of practical note books
47.	Revision of unit 4	Revision & Checking of practical note books
48.	Revision of unit 5	Revision & Checking of practical note books
49.	Revision of unit 5	Revision & Checking of practical note books