LLESSON PLAN

 Semester : 2nd Sem

Subject : Applied Physics-II

Lession Plan Duration : --16 weeks (from 15 Feb,2024 to June, 2024)

Work Load (Lecture/Practical) per week (in hours) : Lecture – 02 , Practicals -02

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| **Week** | **Theory** | **Practical** |
|  | **Lecture day** | **Topic****(including assignment/test)** | **Practi****-cal day** | **Topic** |
| 1 | 1 | * Wave motion - Introduction
 | 1 | Familiarization with apparatus (resistor, rheostat, key, ammeter, volt meter, telescope, microscope etc ) |
|  | 2 | * Terms - displacement, amplitude, time

period,frequency,wavelength,wave velocity, |
|  | 3 | * Transverse wave motion
 |
|  | 4 | * longitudinal wave motion
 |
| 2 | 5 | * Difference b/w Transverse & longitudinal wave motion
 |
|  | 6 | * relationship among wave velocity, frequency and wave length .
* Simple Harmonic Motion (SHM): definition,examples
 |
|  | 7 | * Cantilever
* Vibrations & its types
 | 2 | To find the time period of simple pendulum |
|  | 8 | * Acoustics of buildings – reverberation
* reverberation time
 |
| 3 | 9 | * Echo, noise, coefficient of absorption of sound
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|  | 10 | * methods to control reverberation time.
 |  |  |
|  | 11 | * Ultrasonics
 | 3 | To study variation of time period of a simple pendulum with change in length of pendulum |
|  | 12 | * Engineering applications of Ultrasonics
 |
| 4 | 13 | * Optics – Introduction
 |
|  | 14 | * Reflection of Light
* Refraction of Light
 |
|  | 15 | * refractive index
* Total internal reflection
* Critical angle
 | 4 | To find and verify the time period of cantilever |
|  | 16 | * Applications of TIR
* conditions for TIR
 |
| 5 | 17 | * Super Position of Waves, Definition of Interference, Diffraction and Polarization of Waves
* Microscope, telescope& their uses
 |
|  | 18 | * Introduction of Lens, lens Formula (no derivation), Power of Lens
* Based numerical
 |
|  | 19 | * Assignment – Ultrasonics
 | 5 | To find Ohm’s laws by plotting a graph between voltage and current |
|  | 20 | * Test
 |
| 6 | 21 | * Electrostatics and Electricity –

Introduction |
|  | 22 | * Coulombs law
* Unit charge
 |
| 7 | 23 | * Electric field
* Electric lines of force,its properties
 | 6 | To study colour coding scheme of resistance |
|  | 24 | * Electric Intensity
* Electric Flux
 |
| 8 | 25 | * Electric potential
* Electric field intensity due to a point charge.
 |
|  | 26 | * Gauss law(Statement and derivation)
 |
|  | 27 | * Capacitor
* Capacitance
 | 7 | To verify laws of resistance in series combination |
| 9 | 28 | * Series combination of capacitors
 |
|  | 29 | * parallel combination of capacitors
* Ohm’s Laws
 |
| 10 | 30 | * Numerical based on Grouping of

capacitors |

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|  | 31 | * Classification of Materials and their Properties
 | 8 | To verify laws of resistance in parallel combination |
| 11 | 32 | * Types of materials
* Conductor, Semi-Conductor, Insulator and Dielectric with examples
 |
|  | 33 | * intrinsic and extrinsic semiconductors ( Introduction only)
 | 9 | To find resistance of galvanometer by half deflection method |
| 12 | 34 | * Introduction to Magnetism
* Types of magnetic materials
* Dia materials with example
 |
|  | 35 | * para and ferromagnetic materials with examples
 | 10 | To verify laws of reflection of light using mirror |
|  | 36 | * Magnetic field
* magnetic Flux
 |
| 13 | 37 | * Magnetic lines of force
 | 11 | To verify laws of refraction using glass slab |
|  | 38 | * Electromagnetic induction (Definition)
 |
|  | 39 | Test | 12 | To find the focal length of a concave lens using a convexlens |
| 14 | 40 | Modern Physics - Introduction |
|  | 41 | * Lasers: full form, Principle, absorption, spontaneous emission, stimulated emission, population inversion
* Engineering and applications of laser
 | 13 | revision |
| 15 | 42 | * Fibre optics – Definition, principle, parts, light propagation, fiber types (mono- mode, multi-mode)
* Applications in medical, tele-

communication and sensors |
|  | 43 | * Introduction to nanotechnology-

Definition of nano materials with examples, properties at nano scale | 14 | revision |
|  | 44 | * Applications of nanotechnology( brief)
 |
| 16 |  | * Revision and test
 | 15 | revision |