LESSON PLAN

APPLIED PHYSICS II ( Feb 2024 - May 2024)

**Name of the teacher: Ms. Sarita TRADE: Computer, Electrical and Civil Engg**

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| WEEK | DAY | TOPICS TO BE COVERED(THEORY | WEEK | PRACTICAL |
| 1 | 1 | **UNIT 1:** Waves: definition, types (mechanical and electromagnetic wave) | 1 | Familiarization with apparatus (resistor, rheostat, key, ammeter voltmeter, telescope |
| 2 | Wave motion- transverse and longitudinal with examples, terms used in wave motion like displacement, amplitude, time period, frequency, wavelength,  wave velocity; relationship |
| 2 | 1 | Simple harmonic motion (SHM): definition, examples Cantilever: definition, formula of time period (without | 2 | To find the time period of a simple pendulum. |
| 2 | Sound waves: types (infrasonic, audible, ultrasonic) on the basis of frequency, noise,  coefficient of absorption of |
| 3 | 1 | REVISION OF UNIT 1(ASSIGNMENT ) | 3 | To study variation of time period of a simple pendulum with change in length of pendulum. |
| 2 | REVISION OF UNIT 1(ASSIGNMENT ) |
| 4 | 1 | CLASS TEST/QUIZ | 4 | Completing previous experiments |
| 2 | **UNIT 2:**Reflection and refraction of light with laws,  refractive index |
| 5 | 1 | Lens: introduction, lens formulae (no derivation),  power of lens and simple | 5 | To determine and verify the time period of Cantilever. |
| 2 | Total internal reflection and its applications, critical angle and conditions for total internal reflection Superposition of  waves (concept only), |

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| 6 | 1 | Introduction to Microscope, Telescope and their  applications | 6 | To verify laws of reflection of light using mirror. |
| 2 | REVISION OF UNIT 2  QUIZ/CLASS TEST |
| 7 | 1 | **UNIT 3**: Electric charge, unit of charge, conservation of charge  , Coulomb’s law of | 7 | To verify laws of refraction using glass slab. |
| 2 | Electric field, electric lines of force (definition and  properties), electric field |
| 8 | 1 | Definition of electric flux, Gauss | 8 | Completing previous experiments |
| 2 | Capacitor and capacitance (with |
| 9 | 1 | Electric current and its SI Unit, direct and alternating current  Resistance, conductance | 9 | Revision of Practicals & Copy Checking |
| 2 | Series and parallel combination of resistances 9 Ohm’s law  (statement and formula) |
| 10 | 1 | REVISION OF UNIT 3 | 10 | To verify Ohm’s laws by plotting a graph between voltage and current. |
| 2 | REVISION OF UNIT 3 |
| 11 | 1 | QUIZ/CLASS TEST | 11 | To verify laws of resistances in series combination |
| 2 | **UNIT 4**:Definition of energy level, energy bands 2 Types of materials (conductor, |
| 12 | 1 | intrinsic and extrinsic semiconductors (introduction | 12 | To verify laws of resistance in parallel combination. |
| 2 | Introduction to magnetism, type of magnetic materials: diamagnetic, paramagnetic and  ferromagnetic materials with |
| 13 | 1 | Magnetic field, magnetic lines of force, magnetic flux  Electromagnetic induction | 13 | Completing previous experiments |
| 2 | REVISION OF UNIT 4 |
|  | 1 | QUIZ/CLASS TEST |  |  |

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| 14 | 2 | **UNIT 5**:Laser: introduction, principle, absorption,  spontaneous emission, | 14 | To study colour coding scheme of resistance. |
| 15 | 1 | Engineering and medical applications of laser | 15 | REVISION |
| 2 | Fibre optics: introduction to optical fibers (definition, principle and parts), light propagation, fiber types (mono- |
| 16 | 1 | Nanotechnology: introduction, definition of nanomaterials with examples, properties at | 16 | REVISION |
| 2 | REVISION OF UNIT 5 |