Ist B. Tech. 2017-2018 ECE-C SEM-I ENGINEERING PHYSICS LESSON PLAN

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| **PERIOD** | **DATE**  **{Tentative}** | **TOPIC** | **UNIT**  **No** | **TEACHING**  **METHODOLOGY** | **REMARKS** | **CORRECTIVE**  **ACTION UPON**  **REVIEW** |
| 1 | 11/9/17 | **UNIT I - Interference**  Introduction to interference  Principle of superposition | 1 | CR |  |  |
| 2 | 12/9/17 | Constructive, destructive superposition of waves | 1 | Lectures, PPT Demonstration  Animations,  Group Discussion |  |  |
| 3 | 13/9/17 | Interference in thin plane parallel films | I | CR, |  |  |
| 4 | 14/9/17 | Newton’s rings formation under reflection  Determination of wave length of monochromatic light | I | ,, |  |  |
| 5 | 16/9/17 | Applications of interference:  Testing of flatness of surface  Anti reflection coatings | I | ,, |  |  |
| 6 | 18/9/17 | Diffraction:  Introduction to diffraction | I | ,, |  |  |
| 7 | 19/9/17 | Differences between interference and diffraction | I | ,, |  |  |
| 8 | 20/9/17 | Fraunhofer diffraction due to single slit  Intensity distribution | I | ,, |  |  |
| 9 | 21/9/17 | Laser:  Characteristics of laser:  Monochromacity, intensity, coherence, directionality | II | ,, |  |  |
| 10 | 23/9/17 | Principle of laser: absorption, spontaneous emission, stimulated emission | II |  |  |  |
| 11 | 25/9/17 | Einstein’s coefficients,  Population invertion  Optical resonator and lasing action | II | ,, |  |  |
| 12 | 26/9/17 | Ruby laser and applications | II | ,, |  |  |
| 13 | 27/9/17 | He-Ne laser and applications | II | ,, |  |  |
| 14 | 3/10/17 | Applications of laser in various fields | II | ,, |  |  |
| 15 | 4/10/17 | Fiber optics:  Introduction to optical fiber  Principle of optical fiber | II | ,, |  |  |
| 16 | 5/10/17 | **Total internal reflection, critical angle** | II | ,, |  |  |
| 17 | 7/10/17 | Acceptance Angle, Acceptance Cone and Numerical Aperture | II | ,, |  |  |
| 18 | 16/10/17 | Types of Optical Fibers and Refractive Index Profiles, Step Index and Graded Index Fibers | II | ,, |  |  |
| 19 | 17/10/17 | Single Mode and Multimode Fibers | II | ,, |  |  |
| 20 | 18/10/17 | Advantages of Optical Fiber Communication | II | ,, |  |  |
| 21 | 21/10/17 | **UNIT III:**  **Preliminary Quantum Mechanics**  De-Brogile’s Wave Length – Physical Significance and Properties of Matter Waves | III | ,, |  |  |
| 22 | 23/10/17 | Heisenberg’s Uncertainty Principle and its Applications | III | ,, |  |  |
| 23 | 24/10/17 | Radiation of light from an excited atom | III | ,, |  |  |
| 24 | 25/10/17 | Time independent schrodinger wave equation | III | ,, |  |  |
| 25 | 26/10/17 | Physical Significance of Wave Function – The Waves of Probability | III | ,, |  |  |
| 26 | 28/10/17 | Particle in One Dimensional Potential Box – The Relevant Plots | III | Lectures, PPT Demonstration  Animations,  Group Discussion |  |  |
| 27 | 30/10/17 | Maxwell Boltzmann, Bose Einstein and Fermi Dirac Statistics | III | CR, |  |  |
| 28 | 31/10/17 | **UNIT IV – Magnetic Properties** | IV |  |  |  |
| 29 | 1/11/17 | Basic Terms in Magnetism –  Magnetic Flux (φ),  Magntic Flux Density/Magnetic Field Induction/ Magnetic Induction (B)  Magnetic Filed Strength/Magnetizing Force/Magnetic Field Intensity/Magnetic Intensity/Intensity of Magnetizing Field (H)  Intensity of Magnetization (I), Permeability (µ) and Susceptibility | IV | ,, |  |  |
| 30 | 2/11/17 | Basic Terms Continued…, Relation between B, H & I  Origin of Magnetic Moment – Bohr Magnetron | IV | ,, |  |  |
| 31 | 4/11/17 | Classification of Dia, Para and Ferromagnetism | IV | ,, |  |  |
| 32 | 6/11/17 | Domain Theory of Ferromagnetism  Hysteresis | IV | ,, |  |  |
| 33 | 7/11/17 | Soft and hard magnetic materials,  Applications of magnetic materials | IV | ,, |  |  |
| 34 | 8/11/17 | ferrites and eddy current loss, transformer core  Concept of magnetostriction | IV | ,, |  |  |
| 35 | 9/11/17 | **UNIT V – Dielectric Propeties**  Introduction to Dielectrics and Basic Terms | V | ,, |  |  |
| 36 | 11/11/17 | Basic Terms Continued…  Relation between D, E & P and  Relation between Permittivity and Susceptibility | V | ,, |  |  |
| 37 | 13/11/17 | Electronic Polarization | V | ,, |  |  |
| 38 | 14/11/17 | Ionic Polarization | V | ,, |  |  |
| 39 | 15/11/17 | Orientational Polarization | V | ,, |  |  |
| 40 | 16/11/17 | Total Polarizability | V | ,, |  |  |
| 41 | 18/11/17 | Frequency Dependence of Polarizability | V | ,, |  |  |
| 42 | 20/11/17 | Dielectric Loss and Dielectric Breakdown | V | ,, |  |  |
| 43 | 21/11/17 | Applications of Dielectrics:  Solid insulating materials | V | ,, |  |  |
| 44 | 22/11/17 | Liquid insulating materials | V | ,, |  |  |
| 45 | 23/11/17 | Dielectric heating |  | Lectures, PPT Demonstration  Animations,  Group Discussion |  |  |
| 46 | 25/11/17 | Concept of ferro electricity | V | CR |  |  |
| 47 | 27/11/17 | Ferroelectricity - Spontaneous Polarization in Barium Titanate | V | ,, |  |  |
| 48 | 28/11/17 | Applications of Barium Titanate | V | ,, |  |  |