**Name of the Teacher:\_Dr. R. L. Dhiman, Department of Physics, S.D. College, Ambala Cantt.**

**LESSON PLAN**

**Physics Paper –II (Electricity, Magnetism & Electromagnetic Theory)**

**Class: B.Sc.- I (N.M.) Semester-I**

**Session 2017-2018**

|  |  |  |  |
| --- | --- | --- | --- |
| **S No** | **Period** | **Topics to be Covered** | **Academic Activity to be Organized** |
|  | **17-31 July 2017** | **No Teaching Work due to late start of class**  **(due to extension in on -line admission dates)** | **NIL** |
|  | **01-31 Aug 2017** | **Scalar & Vector Field, Differentiation & Integration of Vector, Gradient of a Scalar Function, Physical Significance & its Importance, Divergence of Vector field, Physical Significance & Expression in Cartesian Coordinates, Gauss’s Divergence Theorem, Solenoid Vector field, Laplacian Operator, Curl of Vector field, Physical Significance & Expression in Cartesian Coordinates, Special Cases, Stokes Theorem, Irrotational or Conservative vector field and related Important Conceptual & Numerical Problems.** | **Conceptual & Numerical Problems related to every article given to students as Home Assignment there after the related problems discussed in the Class** |
|  | **01-30 Sept 2017** | **Conservative nature of Electrostatics Field, Electric Potential Energy, Derivation of Electric field from Potential, Poisson’s & Laplacian Equation, Electric Flux, Solid Angle, Gauss’s Law, Differential form of Gauss’s Law, Electric field intensity due to line Charge, Electric field due to Charged spherical shell, Mechanical force on the surface of a charged conductor, Energy stored per unit volume in an electric field, Concept of Magnetic Field, Magnetic Flux, Lorentz force, Biot Savarat’s Law, Ampere’s Circuital Law , Solenoid nature of magnetic Vector field, Properties of Magnetic Vector Filed(B), Magnetic Properties of Matter & Classification, definition of magnetic terms & their relations. Langevin’s Theory of Diamagnetic and Paramagnetic materials, Domain Theory, Curie Weiss Law, Hysteresis Curve, Energy Loss/Cycle of Magnetization & its Importance & and related Important Conceptual & Numerical Problems.** | **Conceptual & Numerical Problems related to every article given to students as Home Assignment there after the related problems discussed in the Class**  **(One Assignment for Physics Paper-II)**  **( from Unit-I)** |
|  | **01-31 Oct 2017** | **Maxwell’s Equations & their derivations, Displacement Current, Magnetic Scalar & Vector Potentials, Boundary Conditions for Maxwell’s Equations, Propagation of E.M. Waves, Poynting Vector, Poynting Theorem and related Important Conceptual & Numerical Problems.** | **Conceptual & Numerical Problems related to every article given to students as Home Assignment there after the related problems discussed in the Class** |
|  | **01-13 Nov 2017** | **A.C. Circuit (with CR, LR, LC & LCR ) Analysis using Complex Variable, Series and Parallel resonant Circuits, Quality factor ( Sharpness of Resonance) and related Important Conceptual & Numerical Problems.** | **Conceptual & Numerical Problems related to every article given to students as Home Assignment there after the related problems will be discuss in the Class** |

**Topics of Assignment/ Class Test given to the Students:**

|  |  |
| --- | --- |
| **One Assignment**  **for Physics Paper-II** | **Scalar & Vector Field, Differentiation & Integration of Vector, Gradient of a Scalar Function, Physical Significance & its Importance, Divergence of Vector field, Physical Significance & Expression in Cartesian Coordinates, Gauss’s Divergence Theorem, Solenoid Vector field, Laplacian Operator, Curl of Vector field, Physical Significance & Expression in Cartesian Coordinates, Special Cases, Stokes Theorem, Irrotational or Conservative vector field and related Important Conceptual & Numerical Problems.** |
| **Class Test** | **On Dated :- 12.10.2017 from Unit I & II** |