Govt. College, Alewa (Jind)

Session: 2023-2024 (Even Semester)
Lesson Plan

Name of the Teacher: Dr. MANJEET SINGH , ASSISTANT PROFESSOR
Subject: PHYSICS (Theory) Class: B. Sc. 2nd Sem.
Physics Paper: Electricity, Magnetism and EM Theory
Paper's Code: CC/MCC (B-23-PHY-201)
Max. Marks: 70 (External Assessment: 50 Marks, Internal Assessment: 20 Marks)
Contact Hours Per Week: 3

Sr. No.	Week	Dates	Topic
1	1st	31-01-2024 to 03-02-2024	Gradient of a scalar and its physical significance, Line, Surface and Volume integrals of a vector and their physical significance, Flux of a vector field,
2	2nd	05-02-2024 to 10-02-2024	Divergence and curl of a vector and their physical significance, Gauss's divergence theorem, Stoke's theorem. Conservative nature of Electrostatic field, Electrostatic Potential,
3	3rd	12-02-2024 to 17-02-2024	Potential as a line integral of field, Potential difference, Derivation of electric field E from potential as gradient, Derivation of Laplace and Poisson equations,
4	4th	19-02-2024 to 24-02-2024	Electric flux, Gauss's Law, Differential form of Gauss's law, and Applications of Gauss's Law
5	5th	26-02-2024 to 02-03-2024	Mechanical force of charged surface, Energy per unit volume, Class test
6	6th	04-03-2024 to 09-03-2024	Biot-Savart's law and its simple applications: Straight wire, Circular loop, current loop as magnetic dipole and its dipole moment,
7	7th	11-03-2024 to 16-03-2024	Ampere's circuital law and its applications to solenoid and Toroid, Properties of B curl and divergence, Force on a dipole in external field, electric current in atoms,
8	8th	18-03-2024 to 22-03-2024	Electron spin and magnetic moment, Types of magnetic materials, Magnetization vector(M), Magnetic Intensity (H), Magnetic susceptibility and permeability
		23-03-2024 to 27-03-2024	**University Vocations (Holi Vocations)**
9	9th	28-03-2024 to 30-03-2024	Relation between B, H, I, , Electronic theory of dia and paramagnetism, Domain theory of ferromagnetism (Langevin's theory), Cycle of magnetization- hystresis loop (Energy dissipation,
10	10th	01-04-2024 to 06-04-2024	Hystresis loss and importance of Hystresis Curve), Electromagnetic induction, Faraday's law of electromagnetic induction, Lentz's law, Class test

11	11th	08-04-2024 to 13-04-2024	Self inductance, Mutual Inductance, Energy stored in magnetic field, Derivations of Maxwell equations, Displacement current,
12	12th	15-04-2024 to 20-04-2024	Maxwell's equations in integral and differential form and their physical significance, Electromagnetic waves, Transverse nature of electromagnetic waves,
13	13th	22-04-2024 to 27-04-2024	Energy transported by electromagnetic wave, Poynting vector and Poynting theorem, Electric current and electric density, electric conductivity and ohm's law Class Test
14	14th	29-04-2024 to 04-05-2024	Kirchhoff's law for DC networks, a resonant circuit, Phasor, Complex reactance and impedance, Analysis of RL, RC, RLC circuit
15	15th	06-05-2024 to 11-05-2024	Series LCR circuit, Resonance, power dissipation, quality factor, Band width, and parallel resonance circuit, Class Test
16	16th	13-05-2024 to 15-05-2024	Revision