SHYAM LAL COLLEGE, UNIVERSITY OF DELHI

LESSON PLAN

Name of Teacher	**Dr. ANITA**	**Department**	**Physics**
Course	**B.Sc. (Physical Science)**	**Semester**	**II**
Paper	**Electricity and Magnetism**	**Academic Year**	**2023-2024**

Week No./ Period	**Theme/ Curriculum**
1. 18 Jan – 27 Jan 2024	**Unit 1: Electrostatics (5 weeks)** Electric field, electric flux, Gauss' theorem in electrostatics, applications of Gauss' theorem (linear, plane and spherical charge distribution)
2. 29 Jan-3 Feb 2024	Line integral of electric field, electric potential due to a point charge, electric potential and electric field of a dipole and charged disc.
3. 5 Feb-10 Feb 2024	Capacitance due to parallel plates and spherical condenser. Electrostatic energy of system of charge (charged sphere), dielectric medium.
4. 12 Feb-17 Feb 2024	Dielectric polarization, displacement vector, Gauss' theorem in dielectrics, parallel plate capacitor filled with dielectric.
5. 19 Feb-24 Feb 2024	**Unit 2:** Magnetostatics **(4 weeks)** Magnetic force between current elements and definition of magnetic field **B**,
6. 26 Feb-2 March 2024	Biot-Savart's law and its applications (current carrying straight conductor, current carrying circular coil, current carrying solenoid),
7. 4 March-9 March 2024	divergence and curl of magnetic field, Ampere's circuital law,
8.11 March-16 March 2024	magnetic properties of materials (magnetic intensity, magnetic induction, permeability, magnetic susceptibility), brief introduction of dia-, para- and ferro magnetic materials
9. 18 March-23 March 2024	**Unit 3: Electromagnetic Induction (3.5 weeks)** Faraday's laws of electromagnetic induction, Lenz's law.
10. 24 March-31 March 2024	**Mid-Semester Break, Assignment to be given for Internal Assessment**
11. 1 Apr-6 Apr 2024	Self-inductance of single coil, mutual inductance of two coils,

	energy stored in magnetic field.
12. 8 Apr-13 Apr 2024	Maxwell`s equations and equation of continuity of current, displacement current
13. 15 Apr-20 Apr 2024	**Unit-4: DC Circuits (2.5 weeks)** Review of Kirchhoff's Voltage and Current Laws,
14. 22 Apr-27 Apr 2024	Thevenin theorem, Norton theorem, Superposition theorem, Maximum Power Transfer theorem.
15. 29 Apr-4 May 2024	Numerical and Doubt Solving Week on Electricity and Magnetism
16. 6 May-11 May 2024	Revision from Old Question Papers
12 May 2024	**Dispersal of Classes, Preparation Leave, and Practical Examination Begin**