

Class 12Sc. Subject Physics. Date. 08/04/2021

Dear Students, welcome on the 1<sup>st</sup> day of New Session 2021-22. Here is unitwise marks weightage & syllabus of electrostatics.

CLASS XII (2021-22)  
(THEORY)

Time: 3 hrs.

Max Marks: 70

		No. of Periods	Marks
<b>Unit-I</b>	<b>Electrostatics</b>		
	Chapter-1: Electric Charges and Fields	24	16
	Chapter-2: Electrostatic Potential and Capacitance		
<b>Unit-II</b>	<b>Current Electricity</b>	18	
	Chapter-3: Current Electricity		
<b>Unit-III</b>	<b>Magnetic Effects of Current and Magnetism</b>		
	Chapter-4: Moving Charges and Magnetism	22	17
	Chapter-5: Magnetism and Matter		
<b>Unit-IV</b>	<b>Electromagnetic Induction and Alternating Currents</b>	20	
	Chapter-6: Electromagnetic Induction		
	Chapter-7: Alternating Current		
<b>Unit-V</b>	<b>Electromagnetic Waves</b>	04	18
	Chapter-8: Electromagnetic Waves		
<b>Unit-VI</b>	<b>Optics</b>		
	Chapter-9: Ray Optics and Optical Instruments	27	
	Chapter-10: Wave Optics		
<b>Unit-VII</b>	<b>Dual Nature of Radiation and Matter</b>	08	12
	Chapter-11: Dual Nature of Radiation and Matter		
<b>Unit-VIII</b>	<b>Atoms and Nuclei</b>		
	Chapter-12: Atoms	15	
	Chapter-13: Nuclei		
<b>Unit-IX</b>	<b>Electronic Devices</b>	12	7
	Chapter-14: Semiconductor Electronics: Materials, Devices and Simple Circuits		
<b>Total</b>		<b>150</b>	<b>70</b>

**Unit I: Electrostatics**

**24 Periods**

**Chapter–1: Electric Charges and Fields**

Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field.

Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

**Chapter–2: Electrostatic Potential and Capacitance**

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.

Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.