

S. N O	FORTNIGHT	No. of days	No. of Periods	Topic to be covered
1	19 th March- 28 th March	8days	13	<p>Unit I: Electrostatics Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges</p> <p>Superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole</p> <p>Electric field due to a dipole, torque on a dipole in uniform electric field. Numerical</p> <p>Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire Numerical</p>
2	2 nd April- 13 th April	11days	18	<p>Uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside). Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges;</p> <p>Equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field. numericals Conductors and insulators, free charges and bound charges inside a conductor .</p> <p>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</p>
3	16 th April- 27 th April	11days	18	<p>Unit II: Current Electricity: Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current. Ohm's law.</p>

				Electrical resistance temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity Carbon resistors, colour code for carbon resistors;
				Series and parallel combinations of resistors n of cells in series and in parallel Kirchhoff's laws and simple applications. Wheatstone bridge, metre bridge.
				Potentiometer - principle and its applications to measure potential difference and for comparing emf of two cells; measurement of internal resistance of a cell Numerical
4	1stMay- 18thMay	15 days	24	Unit III: Magnetic Effects of Current and Magnetism: Biot - Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire and toroidal solenoids
				A moving charge in uniform magnetic and electric fields. Cyclotron Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current-carrying conductors-definition of ampere
5	21stMay- 25thMay	5days	8	Torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter Numerical
				PTM 28th July 2018 Completion of Syllabus by 25th May 2018 Summer Vacation from 26th May to 28th June 2018 First Term Exams 29th June – 9th July 2018
6	10 th July-31 st July	16 days	26	Magnetism Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis.

				Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements
				Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths. Permanent magnets
				Unit IV: Electromagnetic Induction and Alternating Current : Electromagnetic induction; Faraday's laws, induced emf and current; Lenz's Law, Eddy currents. Self and mutual induction
7	1 th Aug-18 th Aug	13 days	21	Alternating currents: peak and rms values of alternating current/voltage; reactance and impedance LCR series circuit, resonance; Power in AC circuits, wattless current. AC generator and transformer.
				LC oscillations (qualitative treatment only), Unit V: Electromagnetic waves : Need for displacement current, Electromagnetic waves and their characteristics (qualitative ideas only). Transverse nature of electromagnetic waves. Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.
8	20 th Aug-31 st Aug	9 days	14	Unit VI: Optics: Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula. Lens maker's formula. Magnification, power of a lens
				Combination of thin lenses in contact, combination of a lens and a mirror. Refraction and dispersion of light through a prism.
				Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset Optical instruments : Microscopes and astronomical telescopes(reflecting and refracting) and their magnifying powers
Completion of Syllabus 31st August 2018				

				<p style="text-align: center;">Revision 4th September-6th September 2018 (2 days) Practical Exams 7th Sep,8th Sep, 24th Sep & 25th Sep 2018 (4 days) Mid Term Exams 12th Sep - 22nd Sep 2018 PTM on 13th October 2018</p>
9	26 th Sep-17 th October	15 days	24	<p>Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle</p>
				<p>Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum.</p>
				<p>Resolving power of microscopes and astronomical telescope. Polarisation, plane polarised light .Brewster's law, uses of plane polarised light and Polaroids</p>
				DUSSEHRA BREAK 18th October-21st October 2018
10	22 nd Oct-3 rd Nov	10 days	16	<p>Unit VII: Dual Nature of Matter and Radiation: Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light.</p>
				<p>Matter waves-wave nature of particles, de Broglie relation. Davisson-Germer experiment(experimental details should be omitted; only conclusion should be explained). Numerical</p>
				Diwali Break 5th Nov-11th Nov 2018
11	12 th Nov-7 th Dec	18days	30	<p>Unit IX: Electronic Devices : Energy bands in solids (Qualitative ideas only) conductor, insulator and semiconductor;semiconductor diode – I-V characteristics in forward and reverse bias,</p>
				<p>diode as a rectifier; I-Vcharacteristics of LED, photodiode, solar cell, and Zener diode; Zener diode</p>

			as a voltage regulator
			Junction transistor, transistor action, characteristics of a transistor, transistor as an amplifier (common emitter configuration) Logic gates (OR, AND, NOT, NAND and NOR).
			Unit X: Communication Systems : Elements of a communication system (block diagram only); bandwidth of signals (speech, TV and digital data); bandwidth of transmission medium. Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation. Need for modulation. Amplitude modulation
			Unit VIII: Atoms & Nuclei Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.
			Composition and size of nucleus, atomic masses, isotopes, isobars; isotones. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number;nuclear fission, nuclear fusion.
			Radioactivity alpha, beta and gamma particles/rays and their properties; radioactive decay law.
			Pre Board Practicals 12th Dec-15th Dec 2018 (4 days) Revision : 10th Dec and 11th Dec 2018(2 days) Pre-Board Exam 20th Dec – 14th Jan 2019 Winter Break:31st Dec- 9th Jan 2019 PTM on 28th January 2019