

**Academic planner for class - XII (Physics); Academic session( 2017-2018))**

<b>Date / Day</b>	<b>chapter/contents</b>	<b>mode of assesment</b>	<b>cw/hw</b>	<b>experiments/lab activity</b>
<b>March</b>	<b>(Chapter 1)Electric charges and fields</b>			
<b>(21-31)</b>	Introduction			
<b>(08 days)</b>	Electric charges		Cw:NCERT numericals(examples and conceptual questions)	
	Conductor and Insulator			To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
	Charging by induction		Hw: Assignment of electrostatics	
	Basic properties of electric charges			
	Coulomb'law			
	Forces between multiple charges			
	Electric field			
	Electric field lines			
	Electric flux			To assemble components of given electric circuit
	Electric dipole			
	Dipole in uniform electric field			
	Continuous charge distribution	Test of electrostatics -i (based on conceptual question and numericals)		
	Gauss's law			
	Application of gauss's law			
	<b>(Chapter 2)Electrostatic potential and capacitance</b>			
	Introduction			

	Potential due to an electric dipole			To draw the diagram of open circuit .
	Equipotential surfaces			To find resistance of a given wire using meter bridge hence determine the specific resistance of its material.
	Potential energy due to system of charges			hence determine the specific resistance of its material
	Electrostatic of conductors	Class test -ii, test of electrostatics-ii(Derivation & numerical based)		
	Dielectric and polarisation			
<b>April</b>	<b>Capacitor and Capacitance</b>			To verify the laws of combination of resistance
<b>(1-15)</b>	The parallel plate capacitor			
<b>(08 days)</b>	Effect of dielectric on capacitance			
		<b>REVISION</b>		
		Gauss's law		
		Equipotential surfaces		Demonstration of van de graaf generator
		The parallel plate capacitor		
	<b>(Chapter 3)</b>			
	<b>Current electricity</b>		Cw:N.C.E.R.T. examples & questions will be done	
	Introduction			
	Electric current		Hw:N.C.E.R.T questions	
	Electric currents in conductors			
	Ohm's law			
	Drift velocity and mobility	Test of currentelectricity		
	V-I characterstics (linear & non linear)	M.C.Q.based on numericals related to electricity		

	Resistivity and conductivity			
	Temperature dependence of resistivity			
	Colour coding			To find internal resistance of a primary cell.
	Combination of resistors			
	Cells, emf, internal resistance		Assignment will be given at the end of chapter	
	Cells in series and in parallel			
	Kirchhoff's laws			To compare e.m.f of two cell using potentiometer.
	Wheatstone bridge			
	Meter bridge			
	Potentiometer & its applications	<b>REVISION</b>		
		kirchhoff's laws		
		N.P. based on potentiometer		
	<b>(Chapter 4)</b>			
	<b>Magnetic effect of current and magnetism</b>			
<b>April</b>	Introduction		Cw:NCERT questions will be done	
<b>(16-30)</b>	Magnetic field			
<b>(12 days)</b>	Biot-savart law & its applications			
	Ampere's circuital law & its applications			
	The solenoid and toroid			To determine resistance of a galvanometer by half deflection method and find its figure of merit
	Force on moving charge in uniform electric and magnetic field	Test of magnetic effect will be taken	Hw:NCERT questions	
	Cyclotron			
	Forces between two parallel currents		Assignment will be given at the end of chapter	

	Torque on current loop.magnetic dipole			
	The moving coil galvanometer			To demonstate various part of moving coil galvanometer.
	Conversion of galvanometer into ammeter and voltmeter			
	<b>(Chapter 5)</b>			
	<b>Magnetism and Matter</b>			
<b>May</b>	Introduction			
<b>1-- 15</b>	Current loop as magnetic dipole			
<b>(09days)</b>	Magnetic field intensity due to bar magnet			
	Torque on a dipole in uniform magnetic field			
	Magnetic field lines			
	Earth's magnetic field & magnetic elements			
	Para,ferro & dia-magnetic substances			
	Electromagnets,permanent magnets			Showing them behaviour of different substances in magnetic field.
		<b>REVISION</b>	Cw: Conceptual questions &numericals	
		Element of earth magnetic field		
			<b>UNIT TEST- I 3rd May to 10 May.</b>	
	<b>(Chapter 6)</b>			
<b>July</b>	<b>Electromagnetic induction</b>			
<b>1--15</b>	Introduction		Hw:Assignment of chapter	
<b>(12 days)</b>	Faraday and henry 's experiment			
	Lenz's law and conservation of energy			

	Motional electromotive forces			
	Energy consideration:a quantitative study			
	Eddy currents			
	Inductance	Test of E.M.I.		
	A.C generator			
	<b>(Chapter 7)</b>			
<b>July</b>	<b>Alternating current</b>			
<b>(16-31)</b>	Peak & rms values			To find frequency of a.c. Mains using sonometer.
<b>(13 days)</b>	A.C. voltage applied to r,l,c.	<b>REVISION</b>		
	Phasor diagram	N.P. on L.C.R.		
	A.C. voltage applied to lcr circuit	Lenz's law		
	Power in ac circuit:the power factor	Inductance		
	L.C. oscillations	Test of A.C.(conceptual based)		
	Transformers			
			Cw:NCERT & extra questions will be done	
			<b>UNIT TEST- II 24th July to 4th Aug</b>	
	<b>(Chapter 8)</b>			
<b>August</b>	<b>Electromagnetic wave</b>	\	Assignment of e.m wave(conceptual based & numericals based)	
<b>1--15</b>	Displacement current			
<b>(10days)</b>	E.M. waves			
	E.M.spectrum			
	<b>(Chapter 9)</b>			
	<b>Ray optics and optical instruments</b>			
	Reflection of light by spherical mirrors			

	Refraction		Assignment of ray optics	To find focal length of convex lens
	Lens makers formula		(Conceptual based & Numericals based)	
	Combination of lenses			
	Dispersion, Scattering,			
	Optical instruments			
		Test of ray optics		To show variation in size of image through concave mirror or convex lens (using candle and screen)
			Cw:NCERT questions will be done	
	<b>(Chapter 10)</b>			
	<b>wave optics</b>			To find focal length of concave mirror using u-v Graph.
<b>August</b>	Huygen's principle			
<b>16-31</b>	Reflection and refraction of a plane wave			To find R.I. of a Liquid using a convex lens and a plane mirror.
<b>(14 days)</b>	Coherent and Incoherent: addition of waves			
	Interference of light			
	Young's experiment			To find angle of minimum deviation by plotting graph.
	Resolving power	Test of wave optics	Hw: Assignment of wave optics	
	Diffraction			
	Polarisation	<b>REVISION</b>		
		Conceptual problem based on interference,		Activity of polaroid
		N.P. based on telescope and microscope		
<b>Sept</b>	Revision of syllabus			
<b>1--15</b>			<b>Half Yearly 4th Sep to 15th sept</b>	

	<b>(Chapter 14)</b>			
<b>Sept.</b>	<b>Semiconductor Electronics</b>		Hw:Assignment of chapter	
<b>(16-31)</b>	Classification of semiconductor			
<b>(11 days)</b>	p-n junction			To show characteristics of p-n diode(forward and reverse bias).
	Semiconductor diode			
	Application of junction diode as a rectifier			To show characteristics of zener diode and to find break-down voltage.
	Special purpose p-n junction diode			
	Transistor & its applications			To identify capacitor,diode,resistor,ic,transistor from the given mixture.
	Digital electronics and logic gates			
	Integrated circuits	Test of semiconductors(application based)		
		<b>REVISION</b>		
		Rectifier,		
		N.P.based on Logic gates		
		N.P.based on Atomic spectra		
	<b>(Chapter 15)</b>			
<b>Oct.</b>	<b>Communication systems</b>			
<b>(1--15)</b>	Element of communication system			
<b>(09days)</b>	Basic terminology			
	Bandwidth of signals			

	Bandwidth of transmission medium			To study characteristics of a common emitter npn or pnp transistor and to find out value of voltage and current gains.
	Propagation of electromagnetic waves	Test of communication	Hw:NCERT questions	
	Modulation and its necessity	<b>REVISION</b>	Hw:Assignment of chapter	
	Amplitude modulation	Amplitude modulation		
	Production of am-wave	Propagation of electromagnetic waves		
	<b>(Chapter 11)</b>			
	<b>dual nature of radiation and matters</b>			
<b>Oct</b>	Electron emission			
<b>16-31</b>	Photo electric effect			
<b>(11days)</b>	Experimental study of photoelectric effect			
	Photoelectric effect and wave theory of light			
	Einstein's photoelectric equation			
	Particle nature of light:the photon			
	Wave nature of light	Class test based on graph on einstein equation	Hw:assignment of chapter	
	Davisson and germer experiment			
	<b>(Chapter 12)</b>			
	<b>Atoms</b>			
	Alpha particle scattering			
	Rutherford's nuclear model of atom			
	Atomic spectra			To find lateral displacement using glass slab.



	Bohr's model of the hydrogen atom			
	The line spectra of hydrogen atom			
	De-broglie's explanation of bohr's postulates			
	<b>(Chapter 13)</b>			
<b>Nov.</b>	<b>Nuclei</b>		Cw:Numericals of N.C.E.R.T.Book	
<b>1--15</b>	Atomic masses and composition of nucleus		Hw:Assignment of chapter	
<b>(11Days)</b>	Size of nucleus			
	Nuclear forces			
	Radioactivity			
	Nuclear energy			
		Test of atoms & nuclei (emphasis on numericals of this chapter)		
<b>Nov.</b>				
<b>16-30</b>	Revision			
<b>(13 Days)</b>				
			<b>Assessment Test 1 Dec to 13 Dec</b>	

EXAM.	SYLLABUS
UT -1	Chapter 1,2,3
UT -2	Chapter ,4,5,6
Half yearly	Chapter 1-9
Assessment Test	Chapter 1-10,11-15.
Preboard EXAM.	CompleteSyllabus