

S.D.Public School, Pitam Pura, New Delhi

**ACADEMIC PLANNER ,CLASS XII; Physics.(2024-2025)**

Date / Day	chapter/contents	Teaching pedagogy	mode of assesment	No. Of Assignments/H.W	Activities/practicals
<b>April</b>	<b>(Chapter 1)Electric charges and fields</b>				
<b>1--15</b>	Introduction				
<b>(11 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	paper and comb activity.		Hw: Assignment of electrostatics	
	Basic properties of electric charges	<b>Activity based learnibg.</b>			
	Coulomb'law				
	Forces between multiple charges				
	Electric field				
	Electric field lines				
	Electric flux	<b>Learning from daily life example.</b>			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>				
<b>April</b>	Introduction				
<b>(16-30)</b>	Potential due to an electric dipole				To draw the diagram of open circuit .
<b>(11 days)</b>	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				
	The parallel plate capacitor	<b>lecture cum demonstration.</b>			To verify the laws of combination of resistance
	Effect of dielectric on capacitance				
			<b>REVISION</b>		
			Gauss's law		
			Equipotential surfaces		
			The parallel plate capacitor		
	<b>(Chapter 3)</b>				
	<b>Current electricity</b>			Cw:N.C.E.R.T. examples & questions will be done	
<b>May</b>	Introduction				
<b>(1-15)</b>	Electric current			Hw:N.C.E.R.T questions	
<b>(12 days)</b>	Electric currents in conductors	<b>Storytelling</b>			
	Ohm's law				

	Drift velocity and mobility		Test of current electricity		
	V-I characteristics (linear & non linear)		M.C.Q. based on numericals related to electricity		
	Resistivity and conductivity				
	Temperature dependence of resistivity				
	Cells, emf, internal resistance				
	Cells in series and in parallel				
	Kirchhoff's laws			Assignment will be given at the end of chapter	
	Wheatstone bridge	<b>lecture cum demonstration</b>			
			<b>REVISION</b>		
			kirchhoff's laws		
<b>May</b>	<b>(Chapter 4)</b>				
<b>(16-25)</b>	<b>Magnetic effect of current and magnetism</b>				
<b>(06 days)</b>	Introduction			Cw:NCERT questions will be done	

	Magnetic field				
	Biot-savart law & its applications				
	Ampere's circuital law & its applications,	<b>Peer group learning</b>			
	Force on moving charge in uniform electric and magnetic field.				To determine resistance of a galvanometer by half deflection method and find its figure of merit
	Forces between two parallel currents		Test of magnetic effect will be taken	Hw:NCERT questions	
	Torque on current loop.magnetic dipole				
	The moving coil galvanometer	<b>Lecture cum demonstration.</b>			
	Conversion of galvanometer into ammeter and voltmeter			Assignment will be given at the end of chapter	
					To demonstate various part of moving coil galvanometer.
	<b>(Chapter 5)</b>				
<b>JULY</b>	<b>Magnetism and Matter</b>				
<b>1--15</b>	Introduction				
<b>(12 days)</b>	Current loop as magnetic dipole				<b>UT I Chapter 1,2 ,3</b>
	Magnetic field intensity due to bar magnet	<b>Lecture cum demonstration.</b>			

	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>(Chapter 6)</b>				
	<b>Electromagnetic induction</b>				
	Introduction			Hw:Assignment of chapter	
	Faraday and henry 's experiment	<b>Lecture cum demonstration.</b>			
	Lenz's law and conservation of energy				
	Motional electromotive forces	<b>Story telling based on daily life example</b>			
	Energy consideration:a quantitative study				

	Eddy currents				
	Inductance		Test of E.M.I.		
	A.C generator	<b>Lecture cum demonstration.</b>			
<b>JULY</b>					
<b>(15-31)</b>	<b>(Chapter 7)</b>				
<b>(13 days)</b>	<b>Alternating current</b>				
	Peak & rms values				To find frequency of a.c. Mains using sonometer.
	A.C. voltage applied to r,l,c.	<b>Peer group learning</b>	<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	
	(Chapter 08)				
	<b>Electromagnetic wave</b>				

<b>August</b>	Displacement current	<b>Animated video</b>		Assignment of e.m wave(conceptual based & numericals based)	
<b>(1--15)</b>	E.M. waves				
<b>(11 days)</b>	E.M.spectrum				
	<b>(Chapter 9)</b>				
	<b>Ray optics and optical instruments</b>			Assignment of ray optics	To find focal length of convex lens
	Reflection of light by spherical mirrors	<b>Lecture cum demonstration.</b>		(Conceptual based & Numericals based)	
	Refraction				
<b>August</b>	Lens makers formula				
<b>(16-31)</b>	Combination of lenses	<b>Lecture cum demonstration.</b>			
<b>(12 days)</b>	Dispersion,		Test of ray optics		To show variation in size of image through concave mirror or convex lens (using candle and screen)
	Optical instruments	<b>Lecture cum demonstration.</b>		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.
	Huygen's principle				



	Reflection and refraction of a plane wave	<b>Memorization by relating with daily life example.</b>			To find R.I. of a Liquid using a convex lens and a plane mirror.
	Coherent and Incoherent: addition of waves				
	Interference of light				
	Young's experiment	<b>Animated Video</b>			To find angle of minimum deviation by plotting graph.
	Diffraction		Test of wave optics	Hw: Assignment of wave optics	
			<b>REVISION</b>		
			Conceptual problem based on interference,		Activity of polaroid
			N.P. based on telescope and microscope		
<b>Sept.</b>	<b>Revision</b>				
<b>1--15</b>					
<b>(11 days)</b>					
<b>Sept.</b>			<b>Term I examination</b>	<b>Term I exams Chapter 1- 8</b>	
<b>(16-31)</b>					
<b>(12 days)</b>			\		
<b>Oct</b>	<b>(Chapter 11)</b>				

<b>(1-15)</b>	<b>dual nature of radiation and matters</b>				
<b>(08 days)</b>	Electron emission				
	Photo electric effect				
	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 Einstain equation	Hw:assignment of chapter	
	<b>(Chapter 12)</b>				
	<b>Atoms</b>				
	Alpha particle scattering	<b>Audio&amp; Visual Aid</b>			
	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				

<b>Oct</b>	<b>Chapter -13</b>				
<b>(16-31)</b>	<b>Nuclei</b>				
<b>(12 days)</b>	Atomic masses and Composition of Nucleus	<b>Audio&amp; Visual Aid</b>	Class test based on hydrogen spectra	Hw:assignment of chapter	
	Size of nucleus				
	Nuclear forces				
	Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number				
	Nuclear energy				
<b>Nov</b>	<b>(Chapter 14)</b>				
<b>(1-15)</b>	<b>Semiconductor Electronics</b>			Hw:Assignment of chapter	<b>UT II Chapter 9,10,11,12</b>
<b>(10 days)</b>	Classification of semiconductor	<b>Story telling</b>			
	p-n junction				To show characteristics of p-n diode(forward and reverse bias).
	Semiconductor diode	<b>Quiz</b>			
	Application of junction diode as a rectifier	<b>Project-based learning</b>			

					To identify capacitor, diode, resistor, ic, transistor from the given mixture.
			Test of semiconductors( application based)		
			<b>REVISION</b>		
	Revision of syllabus				
<b>Dec.</b>			<b>Preboard Examination</b>		<b>Entire syllabus.</b>
<b>(1-15)</b>					
<b>12 days</b>					
<b>Dec.</b>					
<b>(15-31)</b>					
<b>13 days</b>					
	<b>Examination Schedule</b>	<b>Unit Test-1 (Chapter 1,2,3)</b>		<b>Unit Test-2 (Chapter 9,10,11,12)</b>	
		<b>( Half Yearly Examination) Chapter 1-8</b>		<b>Preboard Examination Complete Syllabus</b>	



