	ACADE	EMIC PLANNER ,C	CLASS XII;	Physics.(2025-	2026)									
DAY/DA TE	chapter/contents	Learning outco	Mode of assesmen t	No. of Assignments /H.W	Teaching pedagogy	INTERDI SCIPLIN ARY	21st CENT URY	Activities/p racticals						
March 18-31 (15 days)	March 18-31 Bridge course program (15 days)													
April 115 (10 days)	(Chapter 1)Electric charges and fields IntroductionChapter–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).	The learner recognises the concepts of Physics related to various natural phenomena; such as, electrostatic force; electric and fields and flux;	Test of electrosta tics -i (based on conceptu al question and numerica ls)	C.W.:NCER T numericals(e xamples and conceptual questions) Hw: Assignment of electrostatics	*Students will be divided in pairs and assign a particular topic to explain in the class using previous knowledge. *Activity based learning.	Understand ing these interconnec tions helps in grasping advanced concepts in electromag netism, electronics, and quantum physics	Critical Thinkin g & Proble m- Solving	*Paper and comb activity. *To assemble components of given electric circuit						

April	Chapter–2: Electrostatic Potential	The learner	Class test	Cw:N.C.E.R.	lecture cum		*To
(16-30)	and Capacitance	recognises the	-ii, test of	T. examples	demonstratio		assemble a
(12 days)	Electric potential, potential difference,	concepts of	electrosta	& questions	n.		household
	electric potential due to a point charge,	electrostatic	tics-	will be done			circuit
	a dipole and system of charges;	potential;	ii(Derivat				comprising
	equipotential surfaces, electrical	differentiates	ion &				three bulbs,
	potential energy of a system of two-	between certain	numerica				three
	point charges and of electric dipole in	physical	l based)				(on/off)
	an electrostatic field. , free charges and	quantities; such					switches, a
	bound charges inside a conductor.	as, between					fuse and a
	Dielectrics and electric polarization,	electric field					power
	capacitors and capacitance,	and electric					source.
	combination of capacitors in series and	potential;					
	in parallel, capacitance of a parallel	potential					
	plate capacitor with and without	difference and				Ethical	
	dielectric medium between the plates,	emf of a cell;					
	energy stored in a capacitor (no					a Environ	
	derivation, formulae only).					montol	
						Awaran	
						Awaren	
						ess	

May	Chapter–3: Current Electricity	The learner	Test of	Hw:N.C.E.R.	Storytelling		*. To find
(1-15)	Electric current, flow of electric	recognises the	current		lecture cum		resistance of
(11 days)	charges in a metallic conductor, drift	concepts of	electricity		demonstratio		a given wire
	velocity, mobility and their relation	drift of	M.C.Q.ba		n		/ standard
	with electric current; Ohm's law, V-I	electrons;	sed on				resistor
	characteristics (linear and non-linear),	electric current;	numerica				using metre
	electrical energy and power, electrical	resistance of	ls related				bridge.
	resistivity and conductivity,	materials;	to				3. To verify
	temperature dependence of resistance,	differentiates	electricity				the laws of
	Internal resistance of a cell, potential	between certain					combination
	difference and emf of a cell,	physical				Critical	(series)of
	combination of cells in series and in	quantities				Thinkin	resistance.
	parallel, Kirchhoff's rules, Wheatstone					9 &	
	bridge.					Proble	
						m-	
						Solving	

May	Chapter–4: Moving Charges and	recognises	Test of	Cw:NCERT	Peer group			*To
(16-25)	Magnetism	different	magnetic	questions	learning	Moving		determine
(08 days)	Concept of magnetic field, Oersted's	processes used	effect	will be done	Use	Charge &		resistance of
	experiment.Biot - Savart law and its	in Physics-	will be	Assignment	embossed	Magnetis		a
	application to current carrying circular	related	taken	will be given	line diagrams	m in		galvanomet
	loop.Ampere's law and its applications	industrial and		at the end of	for	Chemistry-		er by half
	to infinitely long straight wire. Straight	technological		chapter	explaining	Spectrosco		defection
	solenoid (only qualitative treatment),	applications;			texts,	py:		method and
	force on a moving charge in uniform	such as, using			pictures,	Magnetic		find its
	magnetic and electric fields.Force on a	electrostatic			graphs and	fields		figure of
	current-carrying conductor in a	shielding in			flow charts,	influence		merit
	uniform magnetic field, force between	protecting			etc	electron		*To
	two parallel current-carrying	sensitive				spin and		demonstate
	conductors-definition of ampere,	instruments				molecular		various part
	torque experienced by a current loop in	from outside				energy		of moving
	uniform magnetic field; Current loop	electrical				levels in		coil
	as a magnetic dipole and its magnetic	influences;				techniques		galvanomet
	dipole moment, moving coil					like		er.
	galvanometer- its current sensitivity					Nuclear		
	and conversion to ammeter and					Magnetic	Creativi	
	voltmeter.					Resonance	ty and	
						(NMR) spe	Collabo	
						ctroscopy.	ration	

July	Chapter–5: Magnetism and Matter	The learner		Cw:	Lecture cum			Showing
(1-15)	Bar magnet, bar magnet as an	recognises the		Conceptual	demonstratio			them
(12 days)	equivalent solenoid (qualitative	concepts of		questions	n.			behaviour
	treatment only), magnetic field	magnetic		&numericals				of different
	intensity due to a magnetic dipole (bar	properties of				Biomagneti		substances
	magnet) along its axis and	materials				sm: Some		in magnetic
	perpendicular to its axis (qualitative	,recognises				organisms,		field.
	treatment only), torque on a magnetic	different				like		
	dipole (bar magnet) in a uniform	processes used				migratory		
	magnetic field (qualitative treatment	in Physics-				birds and		
	only), magnetic field lines.	related				bacteria,		
	Magnetic properties of materials- Para-	industrial and				have	<b>D</b>	
	, dia- and ferro – magnetic substances	technological				magnetite	Product	
	with examples, Magnetization of	applications;;				crystals	ivity &	
	materials, effect of temperature on	use of				that	Time	
	magnetic properties.	superconductin				help in nav	Manage	
		g magnets for				igation.	ment	
	Chapter–6: Electromagnetic	recognises the	Test of E.	Hw:Assignme	Lecture cum	netic	Critical	To study the
	Induction-Electromagnetic induction;	concepts			demonstratio	Induction	Thinkin	factor on
	Faraday's laws, induced EMF and	electromagnetic			n. Story	& AC in	g &	which the
	current; Lenz's Law, Self and mutual	induction			telling based	Environme	Proble	self-
	induction.				on daily life	ntal	m-	inductance
					example	Science-	Solving	of a coil
July	Chapter–7: Alternating Current		N.P. on	Cw:NCERT	Peer group	Computer		To find
(15-31)	Alternating currents, peak and RMS		L.C.R.,Le	& extra	learning	Science &		frequency
(14 days)	value of alternating current/voltage;		nz's	questions		Engineerin		of a.c.
	reactance and impedance; LCR series		law,Induc	will be done		oWireless	Researc	Mains using
	circuit (phasors only), resonance,		tance			Power	h &	sonometer.
	power in AC circuits, power factor,		Test of			Transfer	Analyti	
	wattless current. AC generator,		A.C.(con			Used in	cal	
	Transformer.		ceptual			inductive	Skills	
	Transformer.		ceptual			inductive	Skills	

August	Chapter–8: Electromagnetic Waves	recognises		Assignment	Animated			To find
(115)	Basic idea of displacement current,	different		of e.m	video			angle of
(11 days)	Electromagnetic waves, their	processes used		wave(concep				minimum
	characteristics, their transverse nature	in Physics-		tual based &		Medical		deviation by
	(qualitative idea only).Electromagnetic	related		numericals		Imaging: X-		plotting
	spectrum (radio waves, microwaves,	industrial and		based)		rays, CT		graph.
	infrared, visible, ultraviolet, X-rays,	technological				scans, and	Researc	
	gamma rays) including elementary	applications;				MRI use	h &	
	facts about their uses.	such as, using				EM waves	Analyti	
		electrostatic				to diagnose	cal	
		shielding in				diseases.	Skills	
	Chapter–9: Ray Optics and Optical	The learner	Test of	Assignment	Lecture cum	plays a		*To find
	Instruments	recognises the	ray optics	of ray optics(	demonstratio	critical role		focal length
	Ray Optics: Reflection of light,	concepts of	N.P.base	Conceptual	n. Label	in multiple		of convex
	spherical mirrors, mirror formula,	reflection,	d on	based &	the pictures	scientific		lens
	refraction of light, total internal	refraction,	telescope	Numericals	within the	and		*To show
	reflection and optical fibers, refraction	.recognises	and	based)Cw:N	text, . This	technologic		variation in
	at spherical surfaces, lenses, thin lens	different	microsco	CERT	can be done	al fields,		size of
	formula, lens maker's formula,	processes used	pe	questions	by the	enabling		image
	magnification, power of a lens,	in Physics-		will be done	students as	advanceme		through
	combination of thin lenses in contact,	related			an activity	nts in		concave
	refraction of light through a prism.	industrial and				medicine,		mirror or
	Optical instruments: Microscopes	technological				environme		convex lens
	and astronomical telescopes (reflecting	applications;				ntal		(using
	and refracting) and their magnifying	such as,				monitoring	Adapta	candle and
	powers.	applications of				,	bility &	screen)
		optical fibers				telecommu	Resilie	
		for transmission				nications,	nce	

August	Chapter–10: Wave Optics	recognises the	Test of wa	Hw:Assignme	Memorizatio	wave		To find the
(1631)	Wave front and Huvgen's principle.	concepts of		U	n by relating	optics is		refractive
(12  days)	reflection and refraction of plane wave	intererence.			with daily	essential in		index of a
(	at a plane surface using wave fronts	diffraction of			life example.	various		liquid using
	Proof of laws of reflection and	light.			Animated	scientific		a concave
	refraction using Huygen's principle	differentiates			Video	disciplines,		mirror and a
	Interference Young's double slit	between certain			v luco	from		nlane
	experiment and expression for fringe	physical				healthcare		mirror
	width (No derivation final expression	quantities: such				and		minor.
	only) coherent sources and sustained	as between				environme	Researc	
	interference of light diffraction due to	interference and				ntal	h &	
	a single slit width of control maxima	diffraction:				monitoring	Analyti	
	a single sint, width of central maxima	unnaction,				to	cal	
	(quantative treatment only).					communic	Skills	
Sept.	Revision		Term I exa	Term I exams	Chapter 1 to8			
(115)								
(11days)								
Sept.								
(1630)								
(12days)								
Oct.	Chapter–11: Dual Nature of	differentiates	Class test	Hw:assignm	group task			
(115)	Radiation and Matter	between certain	based on	ent of	and peer			
(08days)	Dual nature of radiation, Photoelectric	physical	graph on	chapter	assistance	crucial		
	effect, Hertz and Lenard's	quantities; such	Einstain			concept		
	observations; Einstein's photoelectric	as, between	equation			influencing		
	equation-particle nature of	wave and				physics,		
	light.Experimental study of	particle nature				chemistry,		
	photoelectric effect	of light;				medicine,	Flexibil	
	Matter waves-wave nature of particles,	_				environme	ity &	
	de-Broglie relation.					ntal	Adapta	
						science,	bility	

	Chapter–12: Atoms Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in nth orbit, hydrogen line spectra (qualitative treatment only).	appreciates the interface of Physics with other disciplines; such as, with Chemistry as various materials give rise to	Class test based on hydrogen spectra	Hw:assignme	Audio& Visu	atomic and nuclear physics with cell biology has led to significant advanceme	Innovat ion & Creativi ty	To find lateral displacemen t using glass slab.
Oct. (1631) (10days)	Chapter–13: Nuclei Composition and size of nucleus, nuclear force, Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.	recognises different processes used in Physics- related industrial and technological		Hw:Assignme	Story telling Quiz Project-based learning	significant advanceme nts in medicine, biotechnol ogy, and genetics.	Innovat ion & Creativi ty	To identify capacitor,di ode,resistor, LED from the given mixture.
Nov. (115) (11days)	<b>Chapter–14: Semiconductor</b> <b>Electronics:</b> Materials, Devices and Simple CircuitsEnergy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction.Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode - diode as a rectifier.	making light sensitive cells using the applications of photoelectric effect; use of atomic and nuclear physics in medicine, use of electromagnetic radiations in	Test of semicond uctors(ap plication based)	Topics will be taught through class projects, experiments, examples, etc. Activities will be conducted through multisensory		advanceme nts in quantum technology, medical imaging, and nanoscienc e, driving innovation across	Researc h & Analyti cal Skills	To show characteristi cs of p-n diode(forwa rd and reverse bias).
Nov. (1631)	REVISION AND PRE-BOARD EXAMINATION.			Unit test I	Chapter 1-3			
(12days) Dec. (1-15)	Revision of syllabus			Half Yearly PREBOARD	Chapter 1-8 COMPLETE	SYLLABU	S	