

ANNUAL ACADEMIC PLAN 2022-23

PHYSICS

II YEAR

Month / No. of working days/no. of periods	Topics to be covered	Periods allotted for each topic
June (14)	<p>"Syllabus dictation and discussion of IPE question paper along with scheme of valuation weightage of marks to each chapter"</p> <p style="text-align: center;">CHAPTER – 1: WAVES</p> <p>1.1 Introduction 1.2 Transverse and Longitudinal waves 1.3 Displacement relation in a progressive wave 1.4 Speed of a Travelling Wave 1.5 The principle of superposition of waves, 1.6 Reflection of waves 1.7 Beats 1.8 Doppler Effect EAMCET Class</p>	02
July (24)	<p style="text-align: center;">CHAPTER– 2: RAY OPTICS AND OPTICAL INSTRUMENTS</p> <p>2.1 Introduction 2.2 Reflection of light by Spherical Mirrors 2.3 Refraction 2.4 Total Internal Reflection 2.5 Refraction at Spherical Surfaces and by Lenses. 2.6 Refraction through a prism 2.7 Dispersion by a Prism 2.8 Some Natural phenomena due to Sunlight 2.9 Optical Instruments EAMCET PRACTICAL: 1. Velocity of sound by Resonance apparatus 2.Determination of focal length of concave mirror</p> <p style="text-align: center;">CHAPTER – 3: WAVE OPTICS</p> <p>3.1 Introduction 3.2 Huygens Principle 3.3 Refraction and Reflection of plane waves using Huygens Principle 3.4 Coherent and Incoherent Addition of waves 3.5 Interference of Light waves and Young's Experiment 3.6 Diffraction 3.7 Polarisation</p> <p style="text-align: center;">CHAPTER – 4: ELECTRIC CHARGES AND FIELDS</p> <p>4.1 Introduction 4.2 Electric Charges 4.3 Conductors and Insulators 4.4 Charging by Induction</p>	08
		05
		10

	<p>4.5 Basic Properties of Electric Charge 4.6 Coulomb's Law 4.7 Forces between Multiple charges 4.8 Electric Field 4.9 Electric Field Lines 4.10 Electric Flux 4.11 Electric Dipole 4.12 Dipole in a uniform external field 4.13 Continuous Charge Distribution 4.14 Gauss's Law 4.15 Application of Gauss' Law ASSIGNMENT-1</p>	
August (22)	<p>CHAPTER – 5: ELECTROSTATIC POTENTIAL AND CAPACITANCE</p> <p>5.1 Introduction 5.2 Electrostatic Potential 5.3 Potential due to a point charge 5.4 Potential due to an Electric Dipole 5.5 Potential due to a System of Charges 5.6 Equipotential Surfaces 5.7 Potential Energy of a System of Charges 5.8 Potential Energy in an External field 5.9 Electrostatics of Conductors 5.10 Dielectrics and Polarisation 5.11 Capacitors and Capacitance 5.12 The Parallel Plate Capacitor 5.13 Effect of Dielectric on Capacitance 5.14 Combination of Capacitors 5.15 Energy Stored in a Capacitor 5.16 Van de Graaff Generator</p> <p>EAMCET Practicals:3.DETERMINATION OF FOCAL LENGTH OF CONVEX LENS 4.REFRACTIVE INDEX OF PRISM</p> <p>CHAPTER – 6: CURRENT ELECTRICITY</p> <p>6.1 Introduction 6.2 Electric current 6.3 Electric current in conductors 6.4 Ohm's Law 6.5 Drift Electrons and Origin of Resistivity 6.6 Limitations of Ohm's Law 6.7 Resistivity of various Materials 6.8 Temperature Dependence of Resistivity</p>	<p>01</p> <p>10</p> <p>10</p>
September (25)	<p>6.9 Electric Energy, Power 6.10 Combination of Resistors – Series and Parallel 6.11 Cells, emf, Internal Resistance 6.12 Cells in Series and in Parallel 6.13 Kirchhoff's Laws 6.14 Wheatstone Bridge</p>	

6.15 Meter Bridge	01
6.16 Potentiometer	01
ASSIGNMENT-2	
Unit test 1	
CHAPTER – 7: MOVING CHARGES AND MAGNETISM	10
7.1 Introduction	
7.2 Magnetic Force	
7.3 Motion in a Magnetic field	
7.4 Motion in combined Electric and Magnetic Fields	
7.5 Magnetic Field due to a Current Element, Biot-Savart Law	
7.6 Magnetic Field on the Axis of a Circular Current Loop	
7.7 Ampere's Circuital Law	
7.8 The Solenoid and the Toroid	
7.9 Force between two Parallel Currents, The Ampere(Unit)	
7.10 Torque on Current Loop, Magnetic Dipole	
7.11 The Moving Coil Galvanometer	
EAMCET	
PRACTICALS: 5.meter bridge	05
CHAPTER – 8 MAGNETISM AND MATTER	
8.1 Introduction	
8.2 The Bar Magnet	
8.3 Magnetism and Gauss's Law	
8.4 The Earth's Magnetism	
8.5 Magnetisation and Magnetic Intensity	
8.6 Magnetic Properties of Materials	
8.7 Magnets and Electromagnets	
CHAPTER – 9: ELECTROMAGNETIC INDUCTION	08
9.1 Introduction	
9.2 The experiments of Faraday and Henry	
9.3 Magnetic Flux	
9.4 Faraday's Law of Induction	
9.4 Faraday's Law of Induction	
9.5 Lenz's Law and Conservation of Energy	
9.6 Motional Electromotive Force	
9.7 Energy consideration : A Quantitative Study	
9.8 Eddy Currents	
9.9 Inductance	
9.10 AC Generator	01
EAMCET	01
ASSIGNMENT 3	
UNIT TEST 2	

<p>October (19)</p>	<p>CHAPTER – 10: ALTERNATING CURRENT :</p> <p>10.1 Introduction 10.2 AC voltage applied to a Resistor 10.3 Representation of AC Current and Voltage by Rotating Vectors- Phasors 10.4 AC voltage applied to an Inductor 10.5 AC voltage applied to a Capacitor 10.6 AC voltage applied to a Series LCR Circuit 10.7 Power in AC Circuit: The Power Factor 10.8 LC Oscillations 10.9 Transformers</p> <p>CHAPTER – 11: ELECTRO MAGNETIC WAVES</p> <p>11.1 Introduction 11.2 Displacement Current 11.3 Electro Magnetic Waves 11.4 Electromagnetic Spectrum</p> <p>PRACTICALS: 6.magnetic lines of force 7.ohms law</p> <p>ASSIGNMENT 4 Unit test 3 DUSSEHRA HOLIDAYS:02-10-2022 TO 09-10-2022 DATE OF REOPENING: 10-10-2022</p>	<p>09</p> <p>08</p> <p>01</p> <p>01</p>
<p>November (24)</p>	<p>CHAPTER–12:DUAL NATURE OF RADIATION AND MATTER</p> <p>12.1 Introduction 12.2 Electron Emission 12.3 Photoelectric Effect 12.4 Experimental Study of Photoelectric Effect 12.5 Photoelectric Effect and Wave Theory of Light 12.6 Einstein’s Photoelectric Equation: Energy Quantum of Radiation 12.7 Particle Nature of Light : The Photon 12.8 Wave Nature of Matter 12.9 Davisson and Germer Experiment</p> <p>CHAPTER–13 :ATOMS</p> <p>13.1 Introduction 13.2 Alpha-particle Scattering and Rutherford’s Nuclear model of Atom 13.3 Atomic Spectra 13.4 Bohr Model of the Hydrogen Atom 13.5 The Line Spectra of the Hydrogen Atom 13.6 De Broglie’s Explanation of Bohr’s Second Postulate of Quantisation</p> <p>HALF YEARLY EXAMINATIONS:21-11-2022 TO 26-11-2022</p>	<p>09</p> <p>09</p>

	CHAPTER-14 :NUCLEI	06
	14.1 Introduction 14.2 Atomic Masses and Composition of Nucleus 14.3Size of the Nucleus 14.4 Mass- Energy and Nuclear Binding Energy 14.5Nuclear Force 14.6Radioactivity 14.7 Nuclear Energy	
December (25)	<p style="text-align: center;">CHAPTER-15:SEMICONDUCTOR ELECTRONICS: MATERIALS, DEVICES AND SIMPLE CIRCUITS</p> 15.1 Introduction 15.2 Classification of Metals, Conductors and Semiconductors 15.3 Intrinsic Semiconductor 15.4 Extrinsic Semiconductor 15.5 p – n junction 15.6 Semi conductor diode 15.7 Application of Junction Diode as a Rectifier 15.8 Special Purpose p-n Junction Diodes 15.9 Junction Transistor 15.10 Digital Electronics and Logic Gates 15.11 Integrated Circuits	09
	<p style="text-align: center;">CHAPTER- 6: COMMUNICATION SYSTEMS</p> 16.1 Introduction 16.2 Elements of communication system 16.3 Basic Terminology used in Electronic Communication Systems 16.4 Bandwidth of Signals 16.5 Bandwidth of Transmission Medium 16.6 Propagation of Electromagnetic Waves 16.7 Modulation and its Necessity 16.8 Amplitude Modulation 16.9 Production of Amplitude Modulated Wave 16.10 Detection of Amplitude Modulated Wave	10
	UNITTEST-IV ASSIGNMENT-V	04
	PRACTICALS: 8.Tangent Galvanometer 9.P-N Junction diode 10.Transister Characteristics	01 01
January (23)	Theory Revision	
SANKRANTRI Holidays FROM13-01-2023 TO 15-01-2023		
DATE OF REOPENING: 16-01-2023		

PREFINAL EXAMINATIONS: FROM 20.01.2020 TO 25.01.2020		
March (23)	I.P. Examinations: 15-03-2023 to 04-04-2023 Last working day: 31-03-2023 Summer Vacation: 01-04-2023 to 31-05-2023 Advance Supplementary Exams : Last week of May 2023 Date of Reopening after Summer Vacation: 01-06-2023	
	Total	153 Periods

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