

SYLLABUS 2021-2022

STANDARD: 12

SUBJECT: PHYSICS

MONTH	Total No. Of Units	UNIT	CONTENT
January	2	5. Electromagnetic waves	5.1 Introduction 5.1.1 Displacement current and Maxwell's correction to Ampere's circuital law 5.1.2 Maxwell's equations in integral form 5.2 Electromagnetic waves 5.2.1 Production and properties of electromagnetic waves-Hertz experiments 5.2.3 Electromagnetic spectrum 5.3 Types of spectrum emission and absorption spectrum fraunhofer lines
		6. Ray Optics	6.1 Introduction 6.1.1 Ray optics 6.1.2 Reflection 6.1.3 Angle of deviation due to reflection 6.1.4 Image formed in plane mirror 6.1.5 Characteristics of the image formed by plane mirror 6.2 Spherical mirrors 6.2.1 Paraxial rays and marginal rays 6.2.2 Relation between f and r 6.2.5 The mirror equation 6.2.6 Lateral magnification in spherical mirror 6.3 Speed of light 6.3.1 Fizea's method to determine speed of light 6.3.3 Refractive index 6.3.4 Optical path 6.4 Refraction 6.4.1 Angle of deviation due to refraction 6.4.3 Principle of reversibility 6.4.4 Relative refractive index 6.4.5 Apparent depth 6.4.6 Critical angle and total internal reflection 6.4.8 Refraction in glass slab 6.5 Refraction at single spherical surface



January	2	6. Ray Optics	6.5.1 Equation for refraction at single spherical surface 6.6 Thin lens 6.6.3 Lens makers formula and lens formula 6.6.4 Lateral magnification in thin lens 6.6.6 Focal length of lenses in contact 6.6.7 Silvered lenses 6.7 Prism 6.7.1 Angle of deviation produced by a prism 6.7.2 Angle of minimum deviation 6.7.3 Refractive index of the material of the prism 6.7.4 Dispersion of white light through a prism 6.7.5 Dispersive power 6.7.6 Scattering of sunlight
		Practical	4. Voltage - current characteristics of a PN junction diode. 5. Verification of truth tables of logic gates using integrated circuits.
February	2	7. Wave Optics	7.1 Theories on light 7.1.1 Corpuscular theory 7.1.2 Wave theory 7.1.3 Electromagnetic wave theory 7.1.4 Quantum theory 7.2 Wave nature of light 7.2.1 Wave optics 7.2.2 Huygens' principle 7.2.3 Proof for laws of reflection using Huygens principle 7.2.4 Proof for laws of refraction using Huygens principle 7.3 Interference 7.3.1 Phase difference and path difference 7.3.2 Coherent Sources 7.3.3 Double slit as coherent source 7.3.4 Young's double slit experiment 7.3.5 Interference in white light (polychromatic light) 7.3.6 Interference in thin films 7.4 Diffraction 7.4.2 Diffraction in single slit 7.4.4 Fresnel's distance 7.4.5 Difference between interference and diffraction 7.4.9 Resloution





February	2	7. Wave Optics	<ul style="list-style-type: none"> 7.5.3.1 Polariser and analyser 7.5.3.2 Plane and partially polarised light 7.5.3.3 Malus law 7.5.3.4 Uses of polroids 7.5.4 Polrisation by reflection 7.5.4.1 Brewster's law 7.5.4.2 Pile of plates 7.6 Optical instruments 7.6.1 Simple microscope 7.6.1.1 Near point focusing 7.6.1.2 Normal focusing 7.6.1.3 Resolving power of microscope 7.6.1.4 Resolving power of telescope 7.6.2 Compound microscope 7.6.2.1 Magnifictaion in Compound microscope 7.6.3 Astronomocal telescope 7.6.3.1 Magnifictaion in astronomocal telescope 7.6.5 Reflecting telescope 7.6.6.3 Astigmatism
		8. Dual nature of radiation and mater	<ul style="list-style-type: none"> 8.1 Introduction 8.1.1 Electron Emission 8.2 Photo Electric Effect 8.2.1 HERTZ, Hallwach and Lenards's Observation 8.2.2 Effect of intensity of incident Light on Photo Electric current 8.2.3 Effect of Potential Difference on Photo Electric current 8.2.4 Effect of Frequency on Incident Light on stopping potential 8.2.5 Laws of Photo Electric current 8.2.6 Concept of Quantization of Energy 8.2.7 Particle Nature of light - Einstein Explanation 8.2.8 Photo Electric cells and their Applications 8.3 Matter waves 8.3.1 Introduction wave Nature of Particles 8.3.2 De Broglie wavelength 8.3.3 De Broglie wavelength of electron 8.3.4 Davisson - Germer Experiment 8.3.5 Electron Microscope 8.4 X-ray Spectra Continuous X Ray Spectra, Characteristic X Ray Spectra
	Practical	6. Verification of De morgan's Theorems.	

