Lesson Plan

Name of the Associate Professor- Manisha Saini

Subject- Physics

Lesson Plan- 17 Weeks (January-April 2018)

Week	Date	Class B.Sc.-II sem (Sec-E,F) **Properties of Matter and Kinetic Theory of Gases**	Class B.Sc.-IV semester(Sec-E) **waves and optics-II**
1.	1-Jan-18	Discussion on basic terms used in unit 1	
	2-Jan-18	Introduction to Moment of Inertia	
	3-Jan-18	Rotation of rigid body, Moment of inertial, Torque	
	4-Jan-18		Polarization: Polarisation by reflection, refraction
	5-Jan-18	Holiday	
	6-Jan-18		Scattering, Malus Law
	7-Jan-18	Sunday	
2.	8-Jan-18	Angular momentum, Kinetic Energy of rotation	
	9-Jan-18	Discussion of conceptual based on above topics	
	10-Jan-18	Theorem of perpendicular and parallel axes (with proof)	
	11-Jan-18		Phenomenon of double refraction
	12-Jan-18		Huygen's wave theory of double refraction (Normal and oblique incidence)
	13-Jan-18		Analysis of polarized Light. Nicol prism
	14-Jan-18	Sunday	
3.	15-Jan-18	Moment of inertia of solid sphere, hollow sphere	
	16-Jan-18	Moment of Inertia of spherical shell, solid cylinder	
	17-Jan-18	Moment of Inertia of hollow cylinder and solid bar of rectangular cross–section	
	18-Jan-18		Quarter wave plate and half wave plate
	19-Jan-18		Production and detection of (i) Plane polarized light (ii) Circularly polarized light
	20-Jan-18		Production and detection of (iii) Elliptically polarized light. Optical activity
	21-Jan-18	Sunday	
4.	22-Jan-18	Vasant Panchami	
	23-Jan-18	Fly wheel	
	24-Jan-18	Sir Chotu Ram Jayanti	
	25-Jan-18		Fresnel's theory of optical rotation

			Specific rotation, Polarimeters (half shade and Biquartz)
	26-Jan-18	Republic Day	
	27-Jan-18		Assignment on Analysis of polarized Light. Nicol prism
	28-Jan-18	Sunday	
5.	29-Jan-18	Acceleration of a body rolling down on an inclined plane	
	30-Jan-18	Moment of inertia of an irregular body	
	31-Jan-18	Guru Ravi Das Birthday	
	1-Feb-18		Assignment on Analysis of polarized Light. Nicol prism
	2-Feb-18		Evaluation of Fourier coefficient
	3-Feb-18		Importance and limitations of Fourier theorem, even and odd functions
	4-Feb-18	Sunday	
6.	5-Feb-18	Problem discussion of unit 1	
	6-Feb-18	**Unit I- TEST**	
	7-Feb-18	Introduction and Elasticity, Stress and Strain	
	8-Feb-18		Fourier series of functions f(x) between (i) 0 to 2pi
	9-Feb-18		Fourier series of functions f(x) between (ii) –pi to pi and (iii) 0 to pi
	10-Feb-18	Maharishi Dayanand Saraswati Jayanti	
	11-Feb-18	Sunday	
7.	12-Feb-18	Hook's law	
	13-Feb-18	Maha Shivratri	
	14-Feb-18	Elastic constant and their relations	
	15-Feb-18		Fourier series of functions f(x) between (iv) –L to L
	16-Feb-18		Complex form of Fourier series
	17-Feb-18		Application of fourier theorm for analysis of complex waves: solution of triangular rectangular waves.
	18-Feb-18	Sunday	
8.	19-Feb-18	Poisson's ratio, Torsion of cylinder and twisting couple	
	20-Feb-18	Determination of coefficient of modulus of rigidity for the material of wire by Maxwell's needle	
	21-Feb-18	Bending of beam (Bending moment and its magnitude)	
	22-Feb-18		Application of fourier theorm for analysis of complex waves : solution of triangular rectangular waves.
	23-Feb-18		Half and full wave rectifier outputs
	24-Feb-18		Parseval identity for Fourier Series, Fourier integrals
	25-Feb-18	Sunday	

9.	26-Feb-18	Cantilever and Centrally loaded beam	
	27-Feb-18	Discussion on numericals and conceptual based on above topics	
	28-Feb-18	Holiday	
	1-Mar-18	Holiday	
	2-Mar-18	Holiday(HOLI)	
	3-Mar-18	Holiday	
	4-Mar-18	Sunday	
10.	5-Mar-18	Determination of Young's modulus for the material of the beam	
	6-Mar-18	Elastic constants for the material of the wire by Searle's method	
	7-Mar-18	Problem discussion of unit 2	
	8-Mar-18		Fourier transforms and its properties
	9-Mar-18		Application of Fourier transform (i) for evaluation of integrals
	10-Mar-18		Application of Fourier transform (ii) for solution of ordinary differential equations
	11-Mar-18	Sunday	
11.	12-Mar-18	**Unit Test-2**	
	13-Mar-18	Introduction and Assumption of Kinetic theory of gases,	
	14-Mar-18	Pressure of an ideal gas (with derivation)	
	15-Mar-18		Application of Fourier transform (iii) to the following functions: $f(x)= e^{-x2/2}$ i. $f(x)=\|X\|<a$ ii $f(x) =\|X\|>a$
	16-Mar-18		Matrix methods in paraxial optics
	17-Mar-18		Effects of translation and refraction
	18-Mar-18	Sunday	
12.	19-Mar-18	Ideal Gas equation, Degree of freedom	
	20-Mar-18	Kinetic interpretation of Temperature	
	21-Mar-18	Law of equipartition of energy and its application for specific heat of gases	
	22-Mar-18		Effects of translation and refraction
	23-Mar-18	Shaheedi Diwas	
	24-Mar-18		Effects of translation and refraction
	25-Mar-18	Sunday	
13.	26-Mar-18	Real gases, Vander wall's equation, Brownian motion(Qualitative)	
	27-Mar-18	Problems of unit-3	
	28-Mar-18	Introduction of basics to be used in unit 4	
	29-Mar-18	Mahavir Jayanti	
	30-Mar-18		Chromatic, spherical, coma, Astigmatism and distortion

			aberrations and their remedies
	31-Mar-18		Astigmatism and distortion aberrations and their remedies
	1-Apr-18	Sunday	
14.	2-Apr-18	Maxwell's distribution of speed and velocities (derivation required)	
	3-Apr-18	Maxwell's distribution of speed and velocities (derivation required)	
	4-Apr-18	Experimental verification of Maxwell's law of speed distribution	
	5-Apr-18		Optical fiber
	6-Apr-18		Critical angle of propagation
	7-Apr-18		DISCUSSION OF PROBLEMS
	8-Apr-18	Sunday	
15.	9-Apr-18	**Unit-3 Test**	
	10-Apr-18	Most probable speed, average and r.m.s. speed, Mean free path	
	11-Apr-18	Transport of energy and momentum, Diffusion of gases	
	12-Apr-18		Mode of Propagation, Acceptance angle
	13-Apr-18		Fractional refractive index change, Numerical aperture
	14-Apr-18	Dr. Ambedkar Jayanti / Vaisakhi	
	15-Apr-18	Sunday	
16.	16-Apr-18	Problems of Unit-4	
	17-Apr-18	Doubt Classes	
	18-Apr-18	Parashurama Jayanti	
	19-Apr-18		Types of optics fiber, Normalized frequency
	20-Apr-18		Pulse dispersion, Attenuation, Applications
	21-Apr-18		Fiber optic Communication, Advantages
	22-Apr-18	Sunday	
17.	23-Apr-18	**Unit-4 Test**	
	24-Apr-18	Discussion on previous year questions	
	25-Apr-18	Review of syllabus	
	26-Apr-18		Unit- IV Test
	27-Apr-18		Revision of previous year question
	28-Apr-18		Revision of previous year question
	29-Apr-18	Sunday	