Lesson Plan

Name of the Associate Professor- Ms. Mahak Sandhu
Subject- Physics

Lesson Plan- 17 Weeks (January-April 2018)

Week	Date	Class B.Sc.-IV Semester and Section-F Waves and Optics	Class B.SC.-IV Semester and Section-E Statistical Physics
1.	1-Jan-18		Introduction to Statistical Physics
	2-Jan-18		Microscopic and Macroscopic systems, events-mutually exclusive
	3-Jan-18		Dependent and independent. Probability, statistical probability
	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		A- priori Probability and relation between them, probability theorems
	9-Jan-18		Some probability considerations, combinations possessing maximum probability, combination possessing minimum probability
	10-Jan-18		Tossing of 2,3 and any number of Coins, Permutations and combinations
	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		Oral Test
	16-Jan-18		Distributions of N (for N= 2,3,4) distinguishable particles in two boxes of equal size
	17-Jan-18		Distributions of N (for N= 2,3,4) indistinguishable particles in two boxes of equal size
	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		Micro and Macro states,

			Thermodynamical probability, Constraints and Accessible states
	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		Statistical fluctuations, general distribution of distinguishable particles in compartments of different sizes
	30-Jan-18		Condition of equilibrium between two systems in thermal contact-- β parameter, Entropy and Probability (Boltzman's relation
	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 on unit 1
	6-Feb-18		Revision of numericals of unit 1
	7-Feb-18		Unit 1- test
	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		Postulates of statistical physics, Phase space
	13-Feb-18	Maha Shivratri	
	14-Feb-18		Division of Phase space into cells, three kinds of statistics,
	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		Basic approach in three statistics
	20-Feb-18		M. B. statistics applied to an ideal gas in equilibrium- energy distribution law (including evaluation of σ and β)
	21-Feb-18		Speed distribution law & velocity distribution law

	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		Expression for average speed, r.m.s. speed, average velocity, r. m. s. velocity
	27-Feb-18		Most probable energy & mean energy for Maxwellian distribution
	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		Assignment on M. B. statistics applied to an ideal gas in equilibrium-energy distribution law (including evaluation of σ and β)
	6-Mar-18		Need for Quantum Statistics: Bose-Einstein energy distribution law
	7-Mar-18		Application of B.E. statistics to Planck's radiation law B.E. gas
	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		Degeneracy and B.E. Condensation , Problem discussion of unit 2
	13-Mar-18		Unit 2 -test
	14-Mar-18		Fermi-Dirac energy distribution law, F.D. gas
	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		F.D. Degeneracy, Fermi energy and Fermi temperature
	20-Mar-18		Fermi Dirac energy distribution law for electron gas in metals,
	21-Mar-18		Zero point energy, Zero point pressure
	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		Assignment on Fermi Dirac energy distribution law for electron gas in metals
	27-Mar-18		Average speed (at 0 K) of electron gas
	28-Mar-18		Specific heat anomaly of metals and its solution
	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		M.B. distribution as a limiting case of B.E. distributions,
	3-Apr-18		M.B. distribution as a limiting case of F.D. distributions Comparison of three statistics
	4-Apr-18		Introduction to Specific Heat of Solids
	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		Dulong and Petit law. Derivation of Dulong and Petit law from classical physics
	10-Apr-18		Derivation of Dulong and Petit law from classical physics
	11-Apr-18		Specific heat at low temperature, Einstein theory of specific heat, criticism of Einstein theory
	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		Debye model of specific heat of solids, Success and shortcomings of Debye theory
	17-Apr-18		Comparison of Einstein and Debye theories
	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		Comparison of Einstein and Debye theories
	24-Apr-18		Unit 3 -test
	25-Apr-18		revision of numericals
	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	