Bhoj Reddy Engineering College for Women: Hyderabad

Department of Basic Sciences

Lesson plan of faculty member for the academic year 2016–17

Class: I B Tech Branch - Section: EEE Semester: I
Subject: Engineering Physics Lectures per week: 4

Lecture Number	Topic to be covered	Date (s)
UNIT-I : Interference & Diffraction		
1	Introduction	9 August 2016
2	Coherence	11 August 2016
3	Division of amplitude	12 August 2016
4	Division of wave front	13 August 2016
5	Interference in thin films(transmitted light)	16 August 2016
6	Interference in thin films(reflected light)	18 August 2016
7	Newton's rings experiment	19 August 2016
8	Distinction between Fresnel and Fraunhoffer diffraction	20 August 2016
9	Diffraction due to single slit	22 August 2016
10	N- slits	23 August 2016
11	Diffraction grating experiment	27 August 2016
12	Problems	29 August 2016
UNIT-II :Polarization& Lasers		
13	Introduction of Polarization	30 August 2016
14	Malus's law	1 September 2016
15	Double refraction	3 September 2016
16	Nicol prism	6 September 2016
17	Quarter wave plate	8 September 2016
18	Half wave plate	10 September 2016
19	Lasers **:** Characteristics of lasers, spontaneous and stimulated emission of radiation	13 September 2016
20	Einstein coefficients ,population inversion	15 September 2016
21	Ruby laser	17 September 2016
22	Helium-neon laser	19 September 2016
23	Semi conductor laser	20 September 2016
24	Applications of lasers	22 September 2016
25	Problems	24 September 2016
UNIT-III : Fiber Optics		
26	Principle of optical fiber, construction of fiber	25 September 2016
27	Acceptance angle and acceptance cone	27 September 2016
28	Numerical aperture	29 September 2016
29	Problems	1 October 2016
30	Revision	3 October 2016
31	Revision	4 October 2016
32	Types of optical fibers ,step index and graded index fibers	17 October 2016
33	Attenuation in optical fibers	18 October 2016
34	Applications of optical fibers in medicine and sensors	20 October 2016
35	Problems	22 October 2016
UNIT-IV : Crystallography		
36	Space lattice, unit cell and lattice parameters	24 October 2016
37	Crystal systems	25 October 2016
38	Bravais lattices	27 October 2016
39	Atomic radius	29 October 2016

40	Co-ordination number and packing factor of SC, BCC, FCC	31 October 2016
41	HCP and diamond , Miller indices	1 November 2016
42	Crystal planes and directions	3 November 2016
43	Inter planar spacing of orthogonal crystal systems	5 November 2016
44	Problems	7 November 2016
UNIT-V :X-ray Dif fraction and Defects in Crystals		
45	Bragg's law	8 November 2016
46	X-ray diffraction methods	10 November 2016
47	Laue method	12 November 2016
48	Powder method	15 November 2016
49	Point defects	17 November 2016
50	Vacancies	19 November 2016
51	Substitutional defects	21 November 2016
52	Interstitial defects	22 November 2016
53	Frenkel defects	24 November 2016
54	Schottky defects	26 November 2016
55	Line defects (qualitative) and Burger's vector	28 November 2016
56	Surface defects	29 November 2016
57	Stacking faults	1 December 2016
58	Twin, tilt and grain boundaries	3 December 2016
59	Problems	5 December 2016
60	Revision	6 December 2016

Text books:

1) Physics vol.2, Halliday, Resnick and Kramer Jhon Wiley and Sons, Edition 4
2) Modern Engineering Physics, K.Vijaya Kumar and S.Chandra Lingam, S.Chand and Co.Pvt.Ltd.
3) Introduction to Solid State Physics, Charles Kittel, Wiley Student edition

Name and Signature of the Faculty: R.Bhagya lakshmi.

Name and Signature of the Head of the Dept: K.Padma