

Hour	Unit	Topic	Teaching Methodology	Remarks
1	I	Wave Optics – Introduction & Superposition Principle	Whiteboard	
2	I	Interference of Light	Whiteboard	
3	I	Thin Film Interference – Reflection Geometry	Whiteboard	
4	I	Applications of Thin Film Interference	Whiteboard	
5	I	Newton's Rings – Wavelength & Refractive Index	Whiteboard	
6	I	Diffraction – Fresnel and Fraunhofer	Whiteboard	
7	I	Fraunhofer Diffraction – Single Slit	Whiteboard	
8	I	Fraunhofer Diffraction – Double Slit	Whiteboard	
9	I	Diffraction Grating – Qualitative	Whiteboard	
10	I	Polarization – Types and Principles	Whiteboard	
11	I	Polarization by Reflection & Double Refraction	Whiteboard	
12	I	Half Wave & Quarter Wave Plates	Whiteboard	
13	II	Crystallography – Lattice, Basis, Unit Cell	Whiteboard	
14	II	Lattice Parameters, Bravais Lattices	Whiteboard	
15	II	3D Crystal Systems & Coordination Number	Whiteboard	
16	II	Packing Fraction – SC, BCC, FCC	Whiteboard	
17	II	Miller Indices	Whiteboard	
18	II	X-ray Diffraction – Laue Method	Whiteboard	
19	II	Powder Method for Structure Determination	Whiteboard	
20	III	Dielectrics – Introduction & Polarization	Whiteboard	
21	III	Dielectric Susceptibility, Constant & D Vector	Whiteboard	
22	III	Types of Polarization – Electronic (Quantitative)	Whiteboard	
23	III	Ionic & Orientation Polarization	Whiteboard	
24	III	Lorentz Field & Clausius-Mossotti Equation	Whiteboard	
25	III	Magnetism – Dipole Moment & Magnetization	Whiteboard	
26	III	Susceptibility, Permeability & Classification	Whiteboard	
27	III	Ferro, Anti-Ferro, Ferri Magnetic Materials	Whiteboard	

28	III	Domain Theory & Hysteresis	Whiteboard	
29	III	Soft and Hard Magnetic Materials	Whiteboard	
30	IV	Quantum Mechanics – Dual Nature of Matter	Whiteboard	
31	IV	Properties & Significance of Wave Function	Whiteboard	
32	IV	Time Independent Wave Equation	Whiteboard	
33	IV	Particle in 1D Infinite Potential Well	Whiteboard	
34	IV	Classical Free Electron Theory	Whiteboard	
35	IV	Quantum Free Electron Theory	Whiteboard	
36	IV	Fermi-Dirac Distribution	Whiteboard	
37	IV	Temperature Dependence of F-D Distribution	Whiteboard	
38	V	Energy Bands & Classification of Solids	Whiteboard	
39	V	Intrinsic Semiconductors – Carrier Density	Whiteboard	
40	V	Electrical Conductivity – Intrinsic	Whiteboard	
41	V	Extrinsic Semiconductors – Carrier Density	Whiteboard	
42	V	Drift and Diffusion Currents	Whiteboard	
43	V	Hall Effect – Concept	Whiteboard	
44	V	Applications of Hall Effect	Whiteboard	
45	All	Recap of Units I–II	Whiteboard	
46	All	Recap of Units III–IV	Whiteboard	
47	All	Recap of Unit V + Practice Questions	Whiteboard	
48	All	Final Review + Q&A Session	Whiteboard	