

Lesson Planning

Name of Faculty

:Dr. RAJKUMAR SAINI

Dicipline

:ASH

Subject

:Physics

Lesson Plan duration

:16Weeks(From January 2018 to April 2018)

Work load (Lecture/Practical) per week (in hours):Lectures-03,Tutorial-01, Practicals-02

Week	Theory		Practical	
	Lecture day	Topic(Including assignment/test)	Practical Day	Topic
1	1	Space lattice, unit cell and translation vector,	1	1. To find the low resistance by carey-Foster's bridge.
	2	Miller indices, simple		
	3	crystal structure.		
	4	Tutorial		
2	5	Laue's treatment to Bragg's law, powder method,	2	2. To find the resistance of a galvanometer by Thomson's constant difflection method using a
	6	point defects in solids- Schottky and Frenkel defects,		
	7	Bonding in solidslonic and covalent bonds.		
	8	Tutorial		
3	9	Difficulties with classical physics,	3	3. To find the value of high resistance by Substitution method.
	10	Introduction to quantum mechanicssimple concepts,		
	11	Black body radiations Discovery of Planck's constant,		
	12	Tutorial		
4	13	phase velocity and group velocity	4	4. To find the value of high resistance by Leakage method.
	14	. Schrodinger wave equations-time dependent and time independent, Expectation value, Ehrnfest Theorem,		
	15			
	16	Tutorial		
5	17	particle in a one-dimensional box. Quantum Statistics	5	5. To study the characteristics of a solar cell and to find the fill factor
	18	Elementary ideas of quark, gluons and hadrons.		
	19	Features of nanosystems,		
	20	Tutorial		
6	21	concept of quantum size effect, quantum dots and their applications.	6	6. To find the value of e/m for electrons by Helical method.
	22	Elements of classical free electron theory and its limitations.		
	23	Test		
	24	Tutorial		
7	25	Drude's theory of conduction,	7	7. To find the ionisation potential of Argon/Mercury using a thyratron tube.
	26	quantum theory of free electrons, Fermi level,		
	27	density of states,		
	28	Tutorial		
8	29	Fermi-Dirac distribution function,	8	8. To study the variation of magnetic field with distance and to find the radius of coil by Stewart
	30	Thermionic emission,		
	31	Richardson's equation.		
	32	Tutorial		
9	33	Origin of energy bonds,	9	9. To study the characteristics of (Cu-Fe, Cu-Constantan) thermo couple.
	34	Kronig-Penny model (qualitative) E-K diagrams,		
	35	Brillouin Zones,		
	36	Tutorial		
10	37	Concept of effective mass and holes.	10	10. To find the value of
	38	Classification of solids into metals, semiconductors and insulators.		

	39	Test		Planck's constant by using a photo electric cell.
	40	Tutorial		
11	41	Fermi energy and its variation with temperature.	11	11. To find the value of co-efficient of self-inductance by using a Rayleigh beidge.
	42	Hall effect and its applications		
	43	Photoconductivity in insulating crystal,		
	44	Tutorial		
12	45	variation with illumination,	12	12. To find the value of Hall Co-efficient of semi-conductor.
	46	Effect of traps		
	47	Test		
	48	Tutorial		
13	49	applicaiton of photoconductivity,	13	13. To study theV-I characteristics of a p-n diode.
	50	photovoltaics cells,		
	51	solar cell		
	52	Tutorial		
14	53	Atomic magnetic moments,	14	14. To calculate the hysteresis loss by tracing a B-H curve.
	54	orbitals diamagnetism		
	55	Classical theory of paramagnetism,		
	56	Tutorial		
15	57	ferromagnetism,		
	58	molecular fields and domain hypothesis.		
	59	Test		
	60	Tutorial		