

SARASWATI MAHILA MAHAVIDHYALAYA, PALWAL

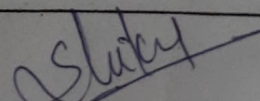
LESSON-PLAN

Class: - M.Sc III Sem (Physics)
Subject: Atomic and molecular physics

Semester: ODD/EVEN ✓

Session: 2020-21

Lecture Number	Topic
Lect. 1	One electron system - Introduction
Lect. 2	Quantum states of one electrons atom
Lect. 3	Quantum theory of hydrogen atom.
Lect. 4	Quantum Numbers for hydrogen Atom wave fun.
Lect. 5	atomic orbital, Pauli Principle.
Lect. 6	Spectra of alkali element
Lect. 7	Spin-orbit interaction.
Lect. 8	Fine structure in alkali spectra.
Lect. 9	Spectra of two electron system.
Lect. 10	equivalent and non-equivalent electrons.
Lect. 11	The influence of external field - Introduction.
Lect. 12	Two electron system Hyperfine structure.
Lect. 13	Line broadening - Types.
Lect. 14	Normal and anomalous zeeman effect.
Lect. 15	Classical and quantum theory of zeeman effect
Lect. 16	Quantum theory of anomalous zeeman effect
Lect. 17	Zeeman shift- Spectral lines


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Lecture Number	Topic
Lect. 18	Paschen Back effect
Lect. 19	diff. b/w zeeman and Paschen Back effect.
Lect. 20	Stark effect.
Lect. 21	Spin-orbit interaction of Two electron system.
Lect. 22	Interaction energy in LS coupling
Lect. 23	JJ coupling and LL coupling.
Lect. 24	Numerical Problem on LS and JJ coupling
Lect. 25	Hypertine structure - magnetic
Lect. 26	Electric hypertine structure, γ shift.
Lect. 27	Numerical Problem on Term value
Lect. 28	Types of molecules - Introduction.
Lect. 29	Diatomic linear symmetric top.
Lect. 30	The Rigid Rotator Model
Lect. 31	Intensity distribution in Rotational spectra.
Lect. 32	asymmetric top and spherical top molecules.
Lect. 33	Energy levels and spectra of non-rigid rotor
Lect. 34	Non-Rigid Rotator.

Shikha

