GDC Memorial College

Bahal (Bhiwani)-127028

NAAC Accredited Grade "B" (Second Cycle)

Lesson Plan- January to April 2025

Name - Dr. Sanjay **Department - Physics**

Class - B.Sc. Computer Science **Subject - Atomic and Molecular Spectroscopy**

Semester- 6th **Subject Code - 20UPHY-602A**

Week-1	**UNIT-1**
20-Jan-25	Introduction to Atomic Spectra
21-Jan-25	Bohr Atomic Model
22-Jan-25	Do
23-Jan-25	Do
Week-2	
27-Jan-25	Energy Level and spectra
28-Jan-25	Corresponding principles and atomic excitation
29-Jan-25	Do
30-Jan-25	Frank-Hertz Experiment
Week-3	
3-Feb-25	Vector Atom Model
4-Feb-25	Do
5-Feb-25	Quantum Numbers associted with Vector Atom Model
6-Feb-25	Penetrating and Non-penetrating Orbits (qualitative)
Week-5	
10-Feb-25	Revision
11-Feb-25	Revision
12-Feb-25	Students's Problem Discussion
13-Feb-25	Unit Test
Week-6	**UNIT II**
17-Feb-25	Spectral lines in different series of alkali spectra
18-Feb-25	Do
19-Feb-25	Spin Orbit Interaction and Doublet term separation
20-Feb-25	Do
Week-7	
24-Feb-25	L-S (Russel-Saunder) Coupling
25-Feb-25	Do
26-Feb-25	j-j coupling
27-Feb-25	Interaction energy for L-S coupling
Week-8	
3-Mar-25	Interaction energy for j-j coupling
4-Mar-25	Zeeman Effect: Normal Zeeman Effect
5-Mar-25	Do
6-Mar-25	Anomalous Zeeman Effect
Week-9	
10-Mar-25	Revision
11-Mar-25	Students's Problem Discussion
12-Mar-25	Test
Week-10	**UNIT III**
17-Mar-25	Paschen-Back Effect for single valence electron
18-Mar-25	Do
19-Mar-25	Stark Effect
20-Mar-25	Discrete set of electronic energies of molecules
Week-11	
24-Mar-25	Quantization of vibrational and rotational energies
25-Mar-25	Do
26-Mar-25	Raman Effect
27-Mar-25	Raman Stokes and anti-stokes Lines
Week-12	
31-Mar-25	Do
1-Apr-25	Revision
2-Apr-25	Revision
3-Apr-25	Test
Week-13	**UNIT IV**
7-Apr-25	Introduction to LASER
8-Apr-25	Main Features of Laser
9-Apr-25	Directionality, High Intensity

10-Apr-25	High Degree of Coherence
Week-14	
14-Apr-25	Special and Temporal Coherence
15-Apr-25	Einstien Coefficients and possibility of amplification
16-Apr-25	Threshold Condition for Laser Action
17-Apr-25	Laser Pumping
Week-15	
21-Apr-25	He-Ne Laser
22-Apr-25	Ruby Laser
23-Apr-25	Applications
24-Apr-25	Revision
Week-16	
28-Apr-25	Unit Test
29-Apr-25	Pre-University Examination
30-Apr-25	Result Discussion

GDC Memorial College

Bahal (Bhiwani)-127028

NAAC Accredited Grade "B" (Second Cycle)

Lesson Plan- January to April 2025

Name - Dr. Sanjay **Department - Physics**

Class - B.Sc. Non-Medical **Subject - Atomic and Molecular Spectroscopy**

Semester- 6th **Subject Code - 20UPHY-602A**

Week-1	**UNIT-1**
20-Jan-25	Introduction to Atomic Spectra
21-Jan-25	Bohr Atomic Model
22-Jan-25	Do
23-Jan-25	Do
Week-2	
27-Jan-25	Energy Level and spectra
28-Jan-25	Corresponding principles and atomic excitation
29-Jan-25	Do
30-Jan-25	Frank-Hertz Experiment
Week-3	
3-Feb-25	Vector Atom Model
4-Feb-25	Do
5-Feb-25	Quantum Numbers associted with Vector Atom Model
6-Feb-25	Penetrating and Non-penetrating Orbits (qualitative)
Week-5	
10-Feb-25	Revision
11-Feb-25	Revision
12-Feb-25	Students's Problem Discussion
13-Feb-25	Unit Test
Week-6	**UNIT II**
17-Feb-25	Spectral lines in different series of alkali spectra
18-Feb-25	Do
19-Feb-25	Spin Orbit Interaction and Doublet term separation
20-Feb-25	Do
Week-7	
24-Feb-25	L-S (Russel-Saunder) Coupling
25-Feb-25	Do
26-Feb-25	j-j coupling
27-Feb-25	Interaction energy for L-S coupling
Week-8	
3-Mar-25	Interaction energy for j-j coupling
4-Mar-25	Zeeman Effect: Normal Zeeman Effect
5-Mar-25	Do
6-Mar-25	Anomalous Zeeman Effect
Week-9	
10-Mar-25	Revision
11-Mar-25	Students's Problem Discussion
12-Mar-25	Test
Week-10	**UNIT III**
17-Mar-25	Paschen-Back Effect for single valence electron
18-Mar-25	Do
19-Mar-25	Stark Effect
20-Mar-25	Discrete set of electronic energies of molecules
Week-11	
24-Mar-25	Quantization of vibrational and rotational energies
25-Mar-25	Do
26-Mar-25	Raman Effect
27-Mar-25	Raman Stokes and anti-stokes Lines
Week-12	
31-Mar-25	Do
1-Apr-25	Revision
2-Apr-25	Revision
3-Apr-25	Test
Week-13	**UNIT IV**
7-Apr-25	Introduction to LASER
8-Apr-25	Main Features of Laser
9-Apr-25	Directionality, High Intensity

10-Apr-25	High Degree of Coherence
Week-14	
14-Apr-25	Special and Temporal Coherence
15-Apr-25	Einstien Coefficients and possibility of amplification
16-Apr-25	Threshold Condition for Laser Action
17-Apr-25	Laser Pumping
Week-15	
21-Apr-25	He-Ne Laser
22-Apr-25	Ruby Laser
23-Apr-25	Applications
24-Apr-25	Revision
Week-16	
28-Apr-25	Unit Test
29-Apr-25	Pre-University Examination
30-Apr-25	Result Discussion

GDC Memorial College, Bahal (Bhiwani)

NAAC Accredited Grade "B"

Lesson Plan- Jan to April 2025

Name - Dr. Jyoti Kumari | **Department - Physics**

Class - B.Sc. Comp. Science | **Subject - Electricity, Magnetism & EM Theory**

Semester - 2nd | **Subject Code - 24UN-PHY-201**

Week-1	**UNIT-I**
1-Jan-25	Gradient of Scalar & Its Physical Significance
2-Jan-25	Line, Surface & Volume Integrals of a Vector &its Physical Significance
3-Jan-25	Flux of a Vector Field
Week-2	
6-Jan-25	Divergence & Curl of a Vector & their Physical significace
8-Jan-25	Stoke's theorem
9-Jan-25	Gauss's Divergence Theorem
10-Jan-25	Conservative Nature of electrosttic Field
Week-3	
15-Jan-25	Electrostatic Potentil
16-Jan-25	Differential form of Gauss law
17-Jan-25	Do
Week-4	
20-Jan-25	Laplace & Poisson Eqn
22-Jan-25	Differential form of Gauss law
23-Jan-25	Appliations of Gauss Law
24-Jan-25	Do
Week-5	**UNIT-II**
27-Jan-25	Biot Savarts Law
29-Jan-25	Application of Biot Savarts law
30-Jan-25	Do
Week-6	
3-Feb-25	Magnetic Properties of matter
5-Feb-25	Do
6-Feb-25	Do
7-Feb-25	B-H Curve
Week-7	
10-Feb-25	Do
12-Feb-25	DO
14-Feb-25	Doubts
Week-8	**UNIT-III**
17-Feb-25	Faraday's Law
19-Feb-25	Lenz's Law
20-Feb-25	Self Inductance & Mutual Inductance
21-Feb-25	Do
Week-9	
24-Feb-25	Maxwells's Equations
28-Feb-25	application of Maxwell's equation
Week-10	
3-Mar-25	Doubts
5-Mar-25	Doubts
6-Mar-25	Test
7-Mar-25	Test Discussion
Week-11	**UNIT-IV**
10-Mar-25	Electric Current & Density
12-Mar-25	DC Current Circuit
Week-12	
17-Mar-25	Doubts
19-Mar-25	Ohm's Law
20-Mar-25	Do
21-Mar-25	Do
Week-13	
24-Mar-25	Test
26-Mar-25	Test Discussion
27-Mar-25	Kichhoff's Law for DC Networks
28-Mar-25	Do
Week-14	
31-Mar-25	Network Theorem
2-Apr-25	Do

3-Apr-25	Do
4-Apr-25	Do
Week-15	
7-Apr-25	AC Current Circuit
9-Apr-25	Resonance Circuit
10-Apr-25	Do
11-Apr-25	Do
Week-16	
14-Apr-25	Complex Reactance & Impedence
16-Apr-25	Do
17-Apr-25	Do
18-Apr-25	Do
Week-17	
21-Apr-25	RL, RC & LC Circuit
23-Apr-25	Do
24-Apr-25	Parallel CR Circuit
25-Apr-25	Do
Week-17	
28-Apr-25	Revision
30-Apr-25	Revision

GDC Memorial College, Bahal (Bhiwani)

NAAC Accredited Grade "B"

Lesson Plan- Jan to April 2025

Name - Dr. Jyoti Kumari **Department - Physics**

Class - B.Sc. Non-Medical **Subject - Electricity, Magnetism & EM Theory**

Semester - 2nd **Subject Code - 24UN-PHY-201**

Week-1	**UNIT-I**
1-Jan-25	Gradient of Scalar & Its Physical Significance
2-Jan-25	Line, Surface & Volume Integrals of a Vector &its Physical Significance
3-Jan-25	Flux of a Vector Field
Week-2	
6-Jan-25	Divergence & Curl of a Vector & their Physical significace
8-Jan-25	Stoke's theorem
9-Jan-25	Gauss's Divergence Theorem
10-Jan-25	Conservative Nature of electrosttic Field
Week-3	
15-Jan-25	Electrostatic Potentil
16-Jan-25	Differential form of Gauss law
17-Jan-25	Do
Week-4	
20-Jan-25	Laplace & Poisson Eqn
22-Jan-25	Differential form of Gauss law
23-Jan-25	Appliations of Gauss Law
24-Jan-25	Do
Week-5	**UNIT-II**
27-Jan-25	Biot Savarts Law
29-Jan-25	Application of Biot Savarts law
30-Jan-25	Do
Week-6	
3-Feb-25	Magnetic Properties of matter
5-Feb-25	Do
6-Feb-25	Do
7-Feb-25	B-H Curve
Week-7	
10-Feb-25	Do
12-Feb-25	DO
14-Feb-25	Doubts
Week-8	**UNIT-III**
17-Feb-25	Faraday's Law
19-Feb-25	Lenz's Law
20-Feb-25	Self Inductance & Mutual Inductance
21-Feb-25	Do
Week-9	
24-Feb-25	Maxwells's Equations
28-Feb-25	application of Maxwell's equation
Week-10	
3-Mar-25	Doubts
5-Mar-25	Doubts
6-Mar-25	Test
7-Mar-25	Test Discussion
Week-11	**UNIT-IV**
10-Mar-25	Electric Current & Density
12-Mar-25	DC Current Circuit
Week-12	
17-Mar-25	Doubts
19-Mar-25	Ohm's Law
20-Mar-25	Do
21-Mar-25	Do
Week-13	
24-Mar-25	Test
26-Mar-25	Test Discussion
27-Mar-25	Kichhoff's Law for DC Networks
28-Mar-25	Do
Week-14	
31-Mar-25	Network Theorem
2-Apr-25	Do

3-Apr-25	Do
4-Apr-25	Do
Week-15	
7-Apr-25	AC Current Circuit
9-Apr-25	Resonance Circuit
10-Apr-25	Do
11-Apr-25	Do
Week-16	
14-Apr-25	Complex Reactance & Impedence
16-Apr-25	Do
17-Apr-25	Do
18-Apr-25	Do
Week-17	
21-Apr-25	RL, RC & LC Circuit
23-Apr-25	Do
24-Apr-25	Parallel CR Circuit
25-Apr-25	Do
Week-17	
28-Apr-25	Revision
30-Apr-25	Revision

GDC Memorial College, Bahal (Bhiwani)

NAAC Accredited Grade "B"

Lesson Plan- Jan to April 2025

Name - Dr. Jyoti Kumari	**Department - Physics**
Class - B.Sc. Comp. Science	**Subject - Quantum Mechanics**
Semester - 4th	**Subject Code - 20UPHY-402**

Week-1	**UNIT-I**
1-Jan-25	Black Body radiation
2-Jan-25	Quantum theory of radiation
3-Jan-25	Photons
Week-2	
6-Jan-25	Photoelectric Effect and Einstein Photoelectric equation
8-Jan-25	Compton Effect
9-Jan-25	In-adequacy of old quntum theory
10-Jan-25	De-Broglie hypothesis
Week-3	
15-Jan-25	Davisson and Germer experiment
16-Jan-25	Phase and Group Velocity
17-Jan-25	Hisenberg's uncertainity principle
Week-4	
20-Jan-25	Time Energy and angular momentum
22-Jan-25	Position Momentum Uncertainity
23-Jan-25	uncertainity principle from De- Broglie wave
24-Jan-25	Doubt Class
Week-5	**UNIT-II**
27-Jan-25	Basic of Quantum Mechanics
29-Jan-25	wave function and its physical significance
30-Jan-25	Property of Wave Function
Week-6	
3-Feb-25	Orhtogonality and normalisation of wave function
5-Feb-25	Time dependent schrodinger wave equation
6-Feb-25	Time Independent schrodinger wave equation
7-Feb-25	Momentum and energy operators
Week-7	
10-Feb-25	Hermitian Operators - eigen value and eigen function
12-Feb-25	Commutator relations of various operators
14-Feb-25	Doubts
Week-8	**UNIT-III**
17-Feb-25	stationary states
19-Feb-25	probabilities and normalization
20-Feb-25	probability current densities and its relation to wave function
21-Feb-25	expectation value of dynamivcal quantites
Week-9	
24-Feb-25	Particle in 1-D Infinite Sqaure well
28-Feb-25	application of schrodinger equation
Week-10	
3-Mar-25	1-D potential Barrier
5-Mar-25	Solution of schrodinger Equation for harmonic oscillator ground state and excited state.
6-Mar-25	Do
7-Mar-25	Doubt class
Week-11	
10-Mar-25	Test
12-Mar-25	Do
Week-12	**UNIT-IV**
17-Mar-25	Schrodinger Equation in Spherical Co-rdinates
19-Mar-25	Solution for Schrodinger equations
20-Mar-25	Spherical harmonics
21-Mar-25	Space Quantization
Week-13	
24-Mar-25	Test
26-Mar-25	Sepration of variables
27-Mar-25	Do
28-Mar-25	Doubts
Week-14	
31-Mar-25	Electron Spin
2-Apr-25	Spin Angular momentum

3-Apr-25	Larmor's theorem
4-Apr-25	Spin Magnetic Moment
Week-15	
7-Apr-25	Stern Gerlach Experiment
9-Apr-25	Gyromagnetic ratio
10-Apr-25	Bohr magneton
11-Apr-25	Doubts
Week-16	
14-Apr-25	Revision
16-Apr-25	Revision
17-Apr-25	Revision
18-Apr-25	Revision

GDC Memorial College, Bahal (Bhiwani)

NAAC Accredited Grade "B"

Lesson Plan- Jan to April 2025

Name - Dr. Jyoti Kumari	**Department - Physics**
Class - B.Sc. Non- Medical	**Subject - Quantum Mechanics**
Semester - 4th	**Subject Code - 20UPHY-402**

Week-1	**UNIT-I**
1-Jan-25	Black Body radiation
2-Jan-25	Quantum theory of radiation
3-Jan-25	Photons
Week-2	
6-Jan-25	Photoelectric Effect and Einstein Photoelectric equation
8-Jan-25	Compton Effect
9-Jan-25	In-adequacy of old quntum theory
10-Jan-25	De-Broglie hypothesis
Week-3	
15-Jan-25	Davisson and Germer experiment
16-Jan-25	Phase and Group Velocity
17-Jan-25	Hisenberg's uncertainity principle
Week-4	
20-Jan-25	Time Energy and angular momentum
22-Jan-25	Position Momentum Uncertainity
23-Jan-25	uncertainity principle from De- Broglie wave
24-Jan-25	Doubt Class
Week-5	**UNIT-II**
27-Jan-25	Basic of Quantum Mechanics
29-Jan-25	wave function and its physical significance
30-Jan-25	Property of Wave Function
Week-6	
3-Feb-25	Orhtogonality and normalisation of wave function
5-Feb-25	Time dependent schrodinger wave equation
6-Feb-25	Time Independent schrodinger wave equation
7-Feb-25	Momentum and energy operators
Week-7	
10-Feb-25	Hermitian Operators - eigen value and eigen function
12-Feb-25	Commutator relations of various operators
14-Feb-25	Doubts
Week-8	**UNIT-III**
17-Feb-25	stationary states
19-Feb-25	probabilities and normalization
20-Feb-25	probability current densities and its relation to wave function
21-Feb-25	expectation value of dynamivcal quantites
Week-9	
24-Feb-25	Particle in 1-D Infinite Sqaure well
28-Feb-25	application of schrodinger equation
Week-10	
3-Mar-25	1-D potential Barrier
5-Mar-25	Solution of schrodinger Equation for harmonic oscillator ground state and excited state.
6-Mar-25	Do
7-Mar-25	Doubt class
Week-11	
10-Mar-25	Test
12-Mar-25	Do
Week-12	**UNIT-IV**
17-Mar-25	Schrodinger Equation in Spherical Co-rdinates
19-Mar-25	Solution for Schrodinger equations
20-Mar-25	Spherical harmonics
21-Mar-25	Space Quantization
Week-13	
24-Mar-25	Test
26-Mar-25	Sepration of variables
27-Mar-25	Do
28-Mar-25	Doubts
Week-14	
31-Mar-25	Electron Spin
2-Apr-25	Spin Angular momentum

3-Apr-25	Larmor's theorem
4-Apr-25	Spin Magnetic Moment
Week-15	
7-Apr-25	Stern Gerlach Experiment
9-Apr-25	Gyromagnetic ratio
10-Apr-25	Bohr magneton
11-Apr-25	Doubts
Week-16	
14-Apr-25	Revision
16-Apr-25	Revision
17-Apr-25	Revision
18-Apr-25	Revision

GDC Memorial College, Bahal (Bhiwani)

NAAC Accredited Grade "B" (Second Cycle)

Lesson Plan- January to April 2025

Name - Dr. Sukhender **Department - Physics**

Class - B.Sc. (NM & CS) **Subject -Nuclear Physics**

Semester - 6th **Subject Code -20UPHY601A**

Week-1	UNIT-1
01.01.2025	General Properties of Nuclei: Constituents of nucleus and their Intrinsic properties
02.01.2025	Quantitative facts about size, mass, charge density (matter energy)
03.01.2025	Binding energy, average binding energy and its variation with mass number
Week-2	
07.01.2025	Main features of binding energy versus mass number curve
08.01.2025	NIA plot
09.01.2025	Angular momentum, parity, magnetic moment, electric moments, nuclear excites states
10.01.2025	Do
Week-3	
15.01.2025	Nuclear Models: Liquid drop model approach
16.01.2025	Do
17.01.2025	Semi empi rical mass formula andsignificance of various terms, condition of nuclear stability
Week-4	
21.01.2025	Evidence for nuclear shell structure
22.01.2025	Nuclear magic numbers
23.01.2025	Basic assumption ofshell model
24.01.2025	Tesidual interaction
Week-5	
28.01.2025	Concept of nuclear force+B50
29.01.2025	Test
	Unit II
30.01.2025	Radioactivity decay
31.01.2025	Alpha decay: basics of a-decay processes, theory of a-emission
Week-6	
04.02.2025	Gamow factor and Geiger Nuttall law
05.02.2025	a-decay spectroscopy
06.02.2025	p-decay: energy kinematics for p-decay
07.02.2025	Positron emission and Electron capture
Week-7	
11.02.2025	Neutrino hypothesis
12.02.2025	Gamma decay: Gamma rays emission & kinematics
13.02.2025	Internal conversion
14.02.2025	Test
Week-8	**UNIT-III**
18.02.2025	Nuclear Reactions: Types of Reactions
19.02.2025	Conservation Laws
20.02.2025	Kinematics of reactions
21.02.2025	Q-value, reaction rate, reaction cross section
Week-9	
25.02.2025	Concept of compound and direct reaction
27.02.2025	Coulomb scallering (Rutherford scattering)
28.02.2025	Interaction of Nuclear Radiation with matter: Energy loss due to ion ization (Bethe-Block formula)
Week-10	
04.03.2025	Energy loss of electrons and Cerenkov radiation and Gamma ray interactionthrough matter
05.03.2025	Photoelectric effect
06.03.2025	Compton scattering
07.03.2025	Pair production
Week-11	
11.03.2025	Do
12.03.2025	Test
Week-12	**UNIT-IV**
18.03.2025	Detector for Nuclear Radiations: Gas detectors
19.03.2025	Do
20.03.2025	Do
21.03.2025	Do
Week-13	
25.03.2025	Do
26.03.2025	Ionization chamber
27.03.2025	Do
28.03.2025	GM Counter
Week-14	
31.03.2025	Do
01.04.2025	Do

02.04.2025	Basic principle of Scintillation Detectors and construct ion of photo-multiplier tube (PMT)
03.04.2025	Do
04.04.2025	Do
Week-15	
08.04.2025	Semiconductor Detectors (Si & Ge) for charge particle
09.04.2025	Do
10.04.2025	Do
11.04.2025	Test
Week-16	
15.04.2025	Revision
16.04.2025	Revision
17.04.2025	Revision
18.04.2025	Revision
Week-17	
22.04.2025	Revision
23.04.2025	Revision
24.04.2025	Revision
25.04.2025	Revision