TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ..... Miss. Anjali .....

CLASS AND SECTION ..... M.Sc (P) .....

SUBJECT ..... Atomic And Molecular Phy. .....

WEEK 1	DESCRIPTION
5-1-26	– Quantum states of one e^- atoms.
6-1-26	– Atomic orbitals
7-1-26	– Hydrogen spectrum.
8-1-26	– Pauli's Principle.
9-1-26	
10-1-26	
WEEK 2	
12-1-26	– Spectra of alkali elements
13-1-26	– Spin orbit interaction.
14-1-26	– fine structure in alkali spectra
15-1-26	– Spectra of $2\ e^-$ system.
16-1-26	
17-1-26	
WEEK 3	
19-1-26	– Equivalent e^-'s.
20-1-26	– Non equivalent e^-'s.
21-1-26	– Influence of external fields.
22-1-26	– Two e^- system Hyperfine structure
24-1-26	
WEEK 4	
27-1-26	– Line broadening
28-1-26	– Normal zeeman effect
29-1-26	– Anamolous zeeman effect
30-1-26	
31-1-26	
WEEK 5	
2-2-26	– Pachen Back Effect
3-2-26	– Stark Effect
4-2-26	– Two e^- system.
5-2-26	– Interaction energy in LS & JJ Coupling
6-2-26	
7-2-26	
WEEK 6	

9-2-26	– JJ coupling
10-2-26	– Hyperfine structure (magnetic electric)
11-2-26	– Hyperfine struct. (electric field)
13-2-26	
14-2-26	
WEEK 7	
16-2-26	– Revision & Discussion of U-N I.
17-2-26	– Types of molecules.
18-2-26	– Test Unit-1.
19-2-26	– Diatomic linear symmitric Top molecule.
20-2-26	
21-2-26	
WEEK 8	
23-2-26	– Asymmtric top molecules, spherical top molecules
24-2-26	– Rotational spectra of diatomic molecules.
25-2-26	– Test Unit-II
26-2-26	– Rotational spectra of molecules as rigid rotator.
27-2-26	
28-2-26	
WEEK 9	
9-3-26	– Energy levels & spectra of non-rigid rotator
10-3-26	– Numerical problem & Discussion.
11-3-26	– Intensity of rotational levels.
12-3-26	– Intensity of rotational lines.
13-3-26	
14-3-26	
WEEK 10	
16-3-26	– Vibrational & rotational spectra of Dia. molec.
17-3-26	– Previous year Questions & Discussion.
18-3-26	– Vibrational energy of diatomic spectra
19-3-26	– Diatomic molecules as simple harmonic oscillator.
20-3-26	
21-3-26	
WEEK 11	

24-3-26	– Molecules as simple Harmonic oscillator.
25-3-26	– Test Unit-3.
27-3-26	
28-3-26	
WEEK 12	
30-3-26	– Energy levels of spectrum.
31-3-26	– Energy levels of spectrum.
1-4-26	– Numerical Problem & Discussion.
2-4-26	– Morse potential energy curve
3-4-26	

4-4-26	—
WEEK 13	
6-4-26	— Morse Pot. Energy curve.
7-4-26	— molecule as Vibrating rotator.
8-4-26	— molecule as Vibrating rotator.
9-4-26	— Vibration spectrum of diatomic molecules
10-4-26	
11-4-26	
WEEK 14	
13-4-26	— Vibration. Spectrum of dia molecules.
15-4-26	— PQR Branches.
16-4-26	— QOR Braches.
17-4-26	— POR Branches.
18-4-26	
WEEK 15	
20-4-26	— Previous year Question of Q-1
21-4-26	— " " " Unit-2
22-4-26	— Unit-4 Test.
23-4-26	— Previous year Q. of Q-3.
24-4-26	
25-4-26	
WEEK 16	
27-4-26	— Previous year Q. of Q-4.
28-4-26	— Numerical soln & Problems.
29-4-26	— Previous year Questions Discussion.
30-4-26	— Discussion of Problems.
1-5-26	
2-5-26	

WEEK 17

4-5-26	— Discussion of Problems.
5-5-26	— Problem Discussion & Numerical soln.
6-5-26	— Problem Discussion & Numerical

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ..... Mrs. Anjali .....

CLASS AND SECTION ..... M.Sc (P) .....

SUBJECT ..... Solid State Physics .....

WEEK 1	DESCRIPTION
5-1-26	—
6-1-26	—
7-1-26	→ Crystalline solids, lattice, The basis.
8-1-26	— Lattice translation vectors.
9-1-26	— Direct lattice, Two & three Dia. Bravais lattice.
10-1-26	— Conventional Cells of FCC, BCC, NaCl, CsCl.
WEEK 2	
12-1-26	→ Draw.
13-1-26	
14-1-26	→ Conventional cells of Diamond & Cubic ZnS.
15-1-26	→ Primitive lattice Cell of FCC, BCC, HCP.
16-1-26	→ Simple Cubic BCC, FCC, HCP.
17-1-26	→ Diamond structures,
WEEK 3	
19-1-26	
20-1-26	
21-1-26	→ Interaction of X-rays with matter
22-1-26	→ Absorption of X-rays.
24-1-26	→ Elastic Scattering from Perfect lattice.
WEEK 4	
27-1-26	
28-1-26	→ The reciprocal lattice & its app. to diff.
29-1-26	→ Ewald techniques.
30-1-26	→ The Laue, Powder & Rotating Crystal
31-1-26	→ Atomic form factor.
WEEK 5	
2-2-26	
3-2-26	
4-2-26	→ Crystal structure factor & Intensity of diff. Ree.
5-2-26	→ Crystal structure factor of BCC, FCC.
6-2-26	→ monoatomic diatomic Lattice
7-2-26	→ Poly atomic (wZn.
WEEK 6	

9-2-26	
10-2-26	
11-2-26	→ Vibration of 1-D mono & diatomic chains
13-2-26	→ Phonon & momentum.
14-2-26	→ Test Unit - 1
WEEK 7	
16-2-26	
17-2-26	
18-2-26	→ Density of normal modes in 1-D.
19-2-26	→ Quantization of lattice vibrations.
20-2-26	→ Measurement of Phonon dispersion
21-2-26	→ Using Inelastic neutron scattering
WEEK 8	
23-2-26	
24-2-26	
25-2-26	→ Point defects, line defects & Planer faults
26-2-26	→ Fundamental ideas of role of Dislocation
27-2-26	→ in Plastic deformation & crystal growth.
28-2-26	→ observation of inperfection of crystal.
WEEK 9	
9-3-26	
10-3-26	
11-3-26	→ X rays & electron microscopic techniques.
12-3-26	→ Electrons in Periodic lattice.
13-3-26	→ Block theorem.
14-3-26	→ Test Unit - 2.
WEEK 10	
16-3-26	
17-3-26	
18-3-26	→ Kronig Penney model & Band theory.
19-3-26	→ Classification of solids.
20-3-26	→ Effective mass.
21-3-26	→ Weak Binding Approx. & Application of linear lattice.
WEEK 11	

24-3-26	
25-3-26	→ Tight-Binding method & Application of S.C.
27-3-26	→ BCC & FCC crystals.
28-3-26	→ Concept of holes
WEEK 12	
30-3-26	
31-3-26	
1-4-26	→ Fermi Surface: cons. of fermi surface of 2-D.
2-4-26	→ De-Hass Van Alfen effect.
3-4-26	→ Cyclotron resonance

4-4-26	→ Test Unit -3.
WEEK 13	
6-4-26	
7-4-26	
8-4-26	→ Magneto - Resistance.
9-4-26	→ Weiss theory of ferromagnetism. Heisberg model.
10-4-26	→ Molecular Field theory of ferromag. of spin waves
11-4-26	→ Curie - Wiss Law for Susceptibility.
WEEK 14	
13-4-26	
15-4-26	→ Ferri & Anti ferro - magnetic order.
16-4-26	→ Domain & Block wall Energy.
17-4-26	→ occurrence of Superconductivity
18-4-26	→ Messiner Effect - Type I & Type II Supercond.
WEEK 15	
20-4-26	
21-4-26	
22-4-26	→ Heat Capacity, Energy gap, Isotopic Effect
23-4-26	→ London Equations.
24-4-26	→ Coherence. Length, Posturlates of BCS Thy.
25-4-26	→ BCS thy of Superconductivity.
WEEK 16	
27-4-26	
28-4-26	
29-4-26	→ BCS Ground State
30-4-26	→ Presistant Current.
1-5-26	→ High temp. oxide Super conductor.
2-5-26	→ Test U-4.

WEEK 17

4-5-26	
5-5-26	
6-5-26	→ Revision & Discussion of Problems.

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR: Dr. Seema Jaiswal

CLASS AND SECTION: M.Sc. (Previous)

SUBJECT: Statistical Mechanics

WEEK 1	DESCRIPTION
5-1-26	Phase space, Ensembles.
6-1-26	Liouville theorem
7-1-26	Conservation of extension
8-1-26	Equation of motion.
9-1-26	
10-1-26	
WEEK 2	
12-1-26	Equal a priori probability.
13-1-26	Statistical equilibrium
14-1-26	Micro-canonical ensemble
15-1-26	Classical limit
16-1-26	
17-1-26	
WEEK 3	
19-1-26	Entropy of an Ideal-gas
20-1-26	Equilibrium Condition
21-1-26	Quasi - static Process
22-1-26	
24-1-26	
WEEK 4	
27-1-26	Entropy of an ideal gas using Micro canonical
28-1-26	Gibbs' paradox
29-1-26	Sackur - Tetrode equation
30-1-26	Probability of two - level system.
31-1-26	
WEEK 5	
2-2-26	Doubt - lecture.
3-2-26	Test
4-2-26	Sessional.
5-2-26	
6-2-26	
7-2-26	
WEEK 6	

9-2-26	Entropy of a system in contact with reservoirs
10-2-26	Canonical Ensemble
11-2-26	Ideal gas in canonical Ensemble.
13-2-26	
14-2-26	
WEEK 7	
16-2-26	Equipartition of Energy
17-2-26	Third law of thermodynamics, Photons
18-2-26	Grand - canonical Ensemble
19-2-26	
20-2-26	
21-2-26	
WEEK 8	
23-2-26	Ideal Gas in Grand canonical Ensemble
24-2-26	Comparison of various ensembles
25-2-26	quantum distribution using other ensembles.
26-2-26	
27-2-26	
28-2-26	
WEEK 9	
9-3-26	Transition from classical statistics to quantum.
10-3-26	Indistinguishability & quantum statistics.
11-3-26	Identical particles & requirements.
12-3-26	
13-3-26	
14-3-26	
WEEK 10	
16-3-26	Base - Einstein statistics
17-3-26	
18-3-26	Fermi - Dirac statistics
19-3-26	
20-3-26	
21-3-26	
WEEK 11	

24-3-26	Maxwell - Boltzmann statistics
25-3-26	Base - Einstein Condensation.
27-3-26	Thermal properties of B.E. Gas.
28-3-26	
WEEK 12	
30-3-26	Liquid Helium
31-3-26	Energy and pressure of F-D gas.
1-4-26	Electrons in metals.
2-4-26	Thermionic Emission
3-4-26	Saha theory of Thermal Ionization.

4-4-26	
WEEK 13	
6-4-26	Cluster expansion for a classical gas.
7-4-26	Virial Eq^n of state.
8-4-26	Vander Waals gas.
9-4-26	"
10-4-26	
11-4-26	
WEEK 14	
13-4-26	Phase transition of 1st kind.
15-4-26	"
16-4-26	Ising Model.
17-4-26	"
18-4-26	
WEEK 15	
20-4-26	Braggs williams approximation.
21-4-26	Fluctuation in ensembles.
22-4-26	"
23-4-26	One - dimensional random walk.
24-4-26	
25-4-26	
WEEK 16	
27-4-26	Fluctuation in quantum statistics.
28-4-26	"
29-4-26	Brownian motion.
30-4-26	"
1-5-26	
2-5-26	

WEEK 17

4-5-26	Doubt lecture
5-5-26	Sessional
6-5-26	

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ...Ms. Seema Sarohe...

CLASS AND SECTION ...M.Sc (Previous)...

SUBJECT ...Quantum Mechanics - II...

WEEK 1	DESCRIPTION
5-1-26	
6-1-26	
7-1-26	Variational methods.
8-1-26	"
9-1-26	Ground state of Helium by Variational method.
10-1-26	
WEEK 2	
12-1-26	
13-1-26	
14-1-26	Perturbation methods.
15-1-26	"
16-1-26	The hydrogen molecule.
17-1-26	"
WEEK 3	
19-1-26	
20-1-26	
21-1-26	WKB approximation
22-1-26	"
24-1-26	Time dependent perturbation theory.
WEEK 4	
27-1-26	
28-1-26	
29-1-26	Constant Perturbation.
30-1-26	"
31-1-26	Harmonic perturbation.
WEEK 5	
2-2-26	
3-2-26	
4-2-26	Fermi's Golden rule.
5-2-26	Adiabatic and sudden approximation.
6-2-26	"
7-2-26	
WEEK 6	

9-2-26	
10-2-26	semi-classical theory of radiation.
11-2-26	"
13-2-26	Transition probability for absorption.
14-2-26	"
WEEK 7	
16-2-26	Induced-emission.
17-2-26	"
18-2-26	Electric dipole transition.
19-2-26	"
20-2-26	
21-2-26	
WEEK 8	
23-2-26	selection Rule.
24-2-26	"
25-2-26	Magnetic dipole transitions.
26-2-26	"
27-2-26	
28-2-26	
WEEK 9	
9-3-26	Forbidden transition
10-3-26	"
11-3-26	High order transition
12-3-26	Einstein coefficient.
13-3-26	
14-3-26	
WEEK 10	
16-3-26	collision in 3D and scattering.
17-3-26	"
18-3-26	Laboratory and C.M. reference frames.
19-3-26	"
20-3-26	
21-3-26	
WEEK 11	

24-3-26	Scattering amplitude.
25-3-26	Differential scattering cross section
27-3-26	Total scattering cross section.
28-3-26	"
WEEK 12	
30-3-26	optical theorem.
31-3-26	Scattering by spherically symmetric potential.
1-4-26	"
2-4-26	Partial waves & phase shift.
3-4-26	

4-4-26	
WEEK 13	
6-4-26	Scattering by a perfectly rigid sphere
7-4-26	"
8-4-26	Square well potential.
9-4-26	Complex potential and absorption.
10-4-26	"
11-4-26	
WEEK 14	
13-4-26	Born approximation.
15-4-26	"
16-4-26	Identical particles
17-4-26	Principle of indistinguishability
18-4-26	
WEEK 15	
20-4-26	Symmetric and anti symmetric wave function
21-4-26	spin and statistics of identical particles.
22-4-26	The slater determinant
23-4-26	The Pauli exclusion principle.
24-4-26	
25-4-26	
WEEK 16	
27-4-26	spin-state of identical particles.
28-4-26	slater determinant.
29-4-26	Pauli exclusion principle
30-4-26	spin-state of a two-electron sym.
1-5-26	
2-5-26	

WEEK 17

4-5-26	collission of identical particles.
5-5-26	"
6-5-26	Revision.

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ..... Mrs. Anjali .....

CLASS AND SECTION ..... M.Sc. (F) .....

SUBJECT ..... Computational Physics - II

WEEK 1	DESCRIPTION
5-1-26	
6-1-26	
7-1-26	– Random No. generators;
8-1-26	– Mid square method.
9-1-26	
10-1-26	
WEEK 2	
12-1-26	– Multiplicative congruential method.
13-1-26	– Mixed Multiplicative congruential method.
14-1-26	– Modelling of Radioactive Decay;
15-1-26	– Hits & Miss monte-Carlo method.
16-1-26	
17-1-26	
WEEK 3	
19-1-26	– Monte Carlo - Evaluation of integration;
20-1-26	– Evaluation of Multi dim. integrals -
21-1-26	– Chotic dynamics - Some definitions.
22-1-26	– simple pendulum.
24-1-26	
WEEK 4	
27-1-26	– Potential energy of dynamical system;
28-1-26	– Undamped motion;
29-1-26	– Damped motion.
30-1-26	– Driven & damped oscillator
31-1-26	
WEEK 5	
2-2-26	– Numerical sol^{n} of Radial Sch. eqn for Hy. a
3-2-26	– R-K - Method
4-2-26	– Algorithm - to simulate interference.
5-2-26	– Unit - I Test
6-2-26.	
7-2-26	
WEEK 6	

9-2-26	= Diffraction of light
10-2-26	= Simulation b) Charging of capacitor
11-2-26	= " b) Discharging of capacitor
13-2-26	
14-2-26	
WEEK 7	
16-2-26	= Current in LR and LCR circuit.
17-2-26	= Comp. models of LR & LCR circuits.
18-2-26	= Driven by sine & square fun's.
19-2-26	= Revision & Discussion of Problems.
20-2-26	
21-2-26	
WEEK 8	
23-2-26	= Simulation of Planetary motion.
24-2-26	= Simulation of projectile motion.
25-2-26	= MATLAB - Introduction.
26-2-26	= Working with arrays.
27-2-26	
28-2-26	
WEEK 9	
9-3-26	= Creating & printing plots.
10-3-26	= Interacting computations: Matrix & Vector.
11-3-26	= Array operations.
12-3-26	= Unit - 2 Test.
13-3-26	
14-3-26	
WEEK 10	
16-3-26	= Built in fun".
17-3-26	= Plotting simple graphs.
18-3-26	= Script files, fun" files, Compiled files
19-3-26	= P-code, variables, loops.
20-3-26	
21-3-26	
WEEK 11	

24-3-26	= Branches, control flow, I/O structures
25-3-26	= Revision & Discussion of Problem.
27-3-26	
28-3-26	
WEEK 12	
30-3-26	= Cells, Linear Algebra.
31-3-26	= Solving sim linear system.
1-4-26	= Gaussian elimination.
2-4-26	= Study Eigen values & Eigen vectors.
3-4-26	

4-4-26	
WEEK 13	
6-4-26	– Matrix factorization
7-4-26	– Curve fitting & Interpolation.
8-4-26	– Polynomial curve fitting.
9-4-26	– Unit – 3 Test.
10-4-26	
11-4-26	
WEEK 14	
13-4-26	– Least Sq. Curve fitting
15-4-26	– Interpolation, Data analysis & Statistics
16-4-26	– Numerical Integration.
17-4-26	
18-4-26	
WEEK 15	
20-4-26	– Revision & Discussion of Pooblems.
21-4-26	– Double integration.
22-4-26	– O.D.E.
23-4-26	– first order linear DDE.
24-4-26	
25-4-26	
WEEK 16	
27-4-26	– Second order non-linear ODE.
28-4-26	– tolerance.
29-4-26	– ODE Suite
30-4-26	– Revision & Discussion P.Y.Q's.
1-5-26	
2-5-26	

WEEK 17

4-5-26	– PYQ's Unit – I, II.
5-5-26	– PYQ's Unit – III & IV.
6-5-26	– Unit – 4 – Test.

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR Dr. Seema Sarohat

CLASS AND SECTION M.Sc. (F)

SUBJECT Physics of Laser and Laser application

WEEK 1	DESCRIPTION
5-1-26	
6-1-26	
7-1-26	Laser characteristics
8-1-26	spontaneous and stimulated
9-1-26	Absorption
10-1-26	
WEEK 2	
12-1-26	
13-1-26	Einstein efficient
14-1-26	Relationship
15-1-26	Laser Idea
16-1-26	
17-1-26	
WEEK 3	
19-1-26	Threshold condition of laser Oscillation
20-1-26	Pumping schemes
21-1-26	Properties of laser Beams
22-1-26	Monochromaticity
24-1-26	
WEEK 4	
27-1-26	Coherence
28-1-26	Directionality
29-1-26	Brightness
30-1-26	Radiation Trapping Superradiance
31-1-26	
WEEK 5	
2-2-26	Superfluorescence
3-2-26	Amplified spontaneous Emission
4-2-26	Non - radiative delay.
5-2-26	Revision
6-2-26	
7-2-26	
WEEK 6	

9-2-26	Doubt lecture.
10-2-26	Sessional.
11-2-26	
13-2-26	
14-2-26	
WEEK 7	
16-2-26	Pumping Process
17-2-26	optical pumping
18-2-26	Pumping efficiency.
19-2-26	"
20-2-26	
21-2-26	
WEEK 8	
23-2-26	Electrical Pumping and pumping efficiency.
24-2-26	Passive optical Resonator.
25-2-26	Stability diagram.
26-2-26	"
27-2-26	
28-2-26	
WEEK 9	
9-3-26	Different types of losses
10-3-26	optical Resonator
11-3-26	Type of Resonator
12-3-26	"
13-3-26	
14-3-26	
WEEK 10	
16-3-26	Stability diagram
17-3-26	Different types of loss in optical Resonator.
18-3-26	Rate Equation
19-3-26	Four level laser
20-3-26	
21-3-26	
WEEK 11	

24-3-26	Three level laser
25-3-26	Q-switching Method of Q-switching
27-3-26	Electro optical shutter
28-3-26	
WEEK 12	
30-3-26	Kerr effect
31-3-26	Pockel effect in KDP Crystal
1-4-26	Mechanical shutter.
2-4-26	Mode - locking
3-4-26	Method of Mode - locking.

4-4-26	
WEEK 13	
6-4-26	solid - state laser.
7-4-26	Ruby laser
8-4-26	Gas laser
9-4-26	Helium - Neon laser
10-4-26	
11-4-26	
WEEK 14	
13-4-26	Nitrogen laser, Dye - laser.
15-4-26	Gas laser, semi-conductor laser.
16-4-26	Multiphoton - effect, Two-photon
17-4-26	
18-4-26	
WEEK 15	
20-4-26	Multiphoton - process
21-4-26	Raman scattering
22-4-26	Simulated Raman - effect.
23-4-26	Application of laser
24-4-26	
25-4-26	
WEEK 16	
27-4-26	Thermonuclear fusion
28-4-26	Holography
29-4-26	Military
30-4-26	
1-5-26	
2-5-26	

WEEK 17

4-5-26	Doubt lecture
5-5-26	Revision.
6-5-26	

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR: Dr. Seema Saroha

CLASS AND SECTION: M.Sc (F)

SUBJECT: Electronics - II

WEEK 1	DESCRIPTION
5-1-26	
6-1-26	
7-1-26	
8-1-26	Binary Numbers
9-1-26	Octal Numbers
10-1-26	Hexadecimal Numbers
WEEK 2	
12-1-26	Binary addition
13-1-26	subtraction.
14-1-26	Inter conversion of numbers.
15-1-26	
16-1-26	
17-1-26	
WEEK 3	
19-1-26	1's compliment
20-1-26	2's compliment
21-1-26	BCD code
22-1-26	
24-1-26	
WEEK 4	
27-1-26	BCD code and arithmatics.
28-1-26	Gray code
29-1-26	excess - 3 code
30-1-26	Gate
31-1-26	
WEEK 5	
2-2-26	Boolean algebra
3-2-26	XOR Gate
4-2-26	Boolean expression
5-2-26	De - morgan - law
6-2-26	
7-2-26	
WEEK 6	

9-2-26	SOP and POS
10-2-26	Minterms and Maxterm
11-2-26	K-map.
13-2-26	
14-2-26	
WEEK 7	
16-2-26	Combinational digital circuits
17-2-26	Binary adders (, Half addess
18-2-26	Decoder
19-2-26	Multiplexer.
20-2-26	
21-2-26	
WEEK 8	
23-2-26	Encoders
24-2-26	ROM and its applicatim.
25-2-26	Digital Comparator
26-2-26	Parity checkers and generator.
27-2-26	
28-2-26	
WEEK 9	
9-3-26	Flip-flop.
10-3-26	R-S-flip-flop.
11-3-26	JK
12-3-26	Master-slave
13-3-26	
14-3-26	
WEEK 10	
16-3-26	T-type and D-type flip-flop.
17-3-26	Shift Register
18-3-26	Asynchronous counter.
19-3-26	Synchronous counter.
20-3-26	
21-3-26	
WEEK 11	

24-3-26	Metal-oxide semiconductor fillet.
25-3-26	Mode-transistor
27-3-26	depletion mode-transistor
28-3-26	
WEEK 12	
30-3-26	P-channel & n-channel device
31-3-26	MOS-inverters
1-4-26	Static Inverters
2-4-26	Dynamic inveters
3-4-26	

4-4-26	
WEEK 13	
6-4-26	MOSFET
7-4-26	CMOS Inverters
8-4-26	CMOS NOR Gates
9-4-26	
10-4-26	
11-4-26	
WEEK 14	
13-4-26	NAND Gates
15-4-26	MOS - shift Register and RAM.
16-4-26	Modulation
17-4-26	
18-4-26	
WEEK 15	
20-4-26	AM Modulation
21-4-26	Frequency conversion
22-4-26	SSB System
23-4-26	Balanced Modulation.
24-4-26	
25-4-26	
WEEK 16	
27-4-26	Pulse Modulation
28-4-26	Microwave Devices
29-4-26	Resonant Cavity, Magnetron.
30-4-26	Klystrons.
1-5-26	
2-5-26	

WEEK 17

4-5-26	Sessional
5-5-26	
6-5-26	

TIKA RAM GIRLS COLLEGE SONEPAT

Lesson Plan Format

NAME OF ASSISTANT/ASSOCIATE PROFESSOR ...Mrs. Anjali.....

CLASS AND SECTION .....M.Sc (P).....

SUBJECT .....Nano Materials & Particle Phy.

WEEK 1	DESCRIPTION
5-1-26	
6-1-26	
7-1-26	→ Free e theory (Qualitative, Ideal) & features
8-1-26	→ Idea of Band structure.
9-1-26	→ Metals, Insulators, & Semiconductors.
10-1-26	→ concept of Effective mass.
WEEK 2	
12-1-26	
13-1-26	
14-1-26	→ Derivation of Density of states in 3D, 2D, 1D & 0D
15-1-26	→ Density of States in Bands.
16-1-26	→ Variation of D.O.S. with energy.
17-1-26	→ Variation of D.O.S. & Band gap effect.
WEEK 3	
19-1-26	
20-1-26	
21-1-26	→ Electronic structure from Bulk to Qu dot.
22-1-26	→ Excitons – Frenkel & Wannier Excitons.
24-1-26	→ Quantum Confinement.
WEEK 4	
27-1-26	
28-1-26	→ Electron confinement in 1D, 2D & 3D infinite well.
29-1-26	→ Various low dia. system.
30-1-26	→ Quantum well structure.
31-1-26	→ Electron wave fct & Quantum well struct.
WEEK 5	
2-2-26	
3-2-26	
4-2-26	→ D.O.S. & optical absorption of Quantum Well.
5-2-26	→ Quantum Wires – wave fct & Energy.
6-2-26	→ D.O.S, Quantum Dots – Wave fct & Energy.
7-2-26	→ Unit – I Test.
WEEK 6	

9-2-26	
10-2-26	
11-2-26	→ Idea of Photo Junct LED.
13-2-26	→ Quantum Well Lasers & Quantum Dot lasers
14-2-26	→ Coulomb blockade & Single Electron transistor
WEEK 7	
16-2-26	
17-2-26	
18-2-26	→ Synthesis of Nanomaterial Introduction.
19-2-26	→ Bottom & Up down app. for synthesis
20-2-26	→ Synthesis of 1-D nanostructured.
21-2-26	→ Sol-Gel Process.
WEEK 8	
23-2-26	
24-2-26	
25-2-26	→ Epitaxial, core-shell nanoparticles
26-2-26	→ Ball milling.
27-2-26	→ 1-D nanostructures.
28-2-26	→ Electrochemical deposition - Lithography.
WEEK 9	
9-3-26	
10-3-26	
11-3-26	→ Two-Dimensional nanostructure.
12-3-26	→ Molecular Beam Epitaxy. (MBE)
13-3-26	→ MOCVD.
14-3-26	→ Unit-II Test.
WEEK 10	
16-3-26	
17-3-26	
18-3-26	→ Cluster Beam Evaporation.
19-3-26	→ Ion Beam Deposition.
20-3-26	→ Chemical Bath Deposition tech.
21-3-26	→ Characterization of Nanomaterials & Analysis.
WEEK 11	

24-3-26	
25-3-26	→ Effect of particle size & Strain on width of
27-3-26	→ XRD Peaks of nanomaterials
28-3-26	→ Determination of crystalline Particle size
WEEK 12	
30-3-26	
31-3-26	
1-4-26	→ Strain in nanomaterials using Debye-Scherrer's
2-4-26	→ formula & Williamson-Hall plot
3-4-26	→ Transmission e⁻ microscopy.

4-4-26	→ Unit – 3 Test.
WEEK 13	
6-4-26	
7-4-26	
8-4-26	– Basic Principle & Idea of Instrumentation.
9-4-26	– PL spectroscopy.
10-4-26	– Shift in PL spectroscopy
11-4-26	– Alloy composition in thin films. S.C.
WEEK 14	
13-4-26	
15-4-26	– Estimation for width of Quatum wells.
16-4-26	– Raman spectroscopy.
17-4-26	– Basic Principle & Idea of Instrumentation
18-4-26	– Variations in Raman spectra of nanosize.
WEEK 15	
20-4-26	
21-4-26	
22-4-26	– Study of Raman Spectra of carbon
23-4-26	nanotubes & graphite.
24-4-26	– Test Unit – 4.
25-4-26	– Revision & Discussion.
WEEK 16	
27-4-26	
28-4-26	
29-4-26	– P.V.Q. of U-N.I.
30-4-26	– P.V.Q. of U-2.
1-5-26	– P.V.Q of U-3.
2-5-26	– P.V.Q of U-4.

WEEK 17

4-5-26	
5-5-26	
6-5-26	→ Unit-4-Test.