Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher –Ms. Meenu Sharma Class- B.Sc-First Year (1st SEM) Subject- Classical Mechanics and Theory of Relativity Paper- PH-101

September, 2022	Unit 1: Basic concepts of Classical mechanics
1 st Week	Machanics of single and system of norticles. Conversion law of linear
1 Sept-3 Sept	Mechanics of single and system of particles, Conversion law of linear
4.54. 2022	momentum Served and
4 Sept, 2022	Sunday
2 nd Week	Conversion law of Angular momentum and mechanical energy for a
5 Sept- 10 Sept	particle and a system of particles,
11 Sept, 2022	Sunday
3 rd Week	Centre of Mass and equation of motion
12 Sept-17 Sept	Constrained Mation Numerical making and Devicing
	Constrained Motion, Numerical problems and Revision
18 Sept, 2022	Sunday
4 th Week	Unit2: Generalized Notations
19 Sept-24 Sept	Degrees of freedom and Generalized coordinates, Transformation
	e ,
	equations, Generalized Displacement
	e ,
23 Sept,2022	equations, Generalized Displacement
23 Sept,2022 25 Sept, 2022	e ,
	equations, Generalized Displacement Shaheedi Divas/ Haryana War Heroes' Martyrdom Day
25 Sept, 2022 26 Sept, 2022	equations, Generalized Displacement Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
25 Sept, 2022 26 Sept, 2022 5 th Week	equations, Generalized Displacement Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti Generalized Velocity, Acceleration, Momentum, Force and Potential,
25 Sept, 2022 26 Sept, 2022	equations, Generalized Displacement Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
25 Sept, 2022 26 Sept, 2022 5 th Week	equations, Generalized Displacement Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti Generalized Velocity, Acceleration, Momentum, Force and Potential,
25 Sept, 2022 26 Sept, 2022 5 th Week	equations, Generalized Displacement Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti Generalized Velocity, Acceleration, Momentum, Force and Potential,
25 Sept, 2022 26 Sept, 2022 5 th Week	equations, Generalized Displacement Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti Generalized Velocity, Acceleration, Momentum, Force and Potential,

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher –Ms. Meenu Sharma Class- B.Sc-First Year (1st SEM) Subject- Classical Mechanics and Theory of Relativity Paper- PH-101

October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Lagrange's equation of motion from Hamilton's principle, Linear Harmonic oscillator, Simple pendulum, Atwood's machine. Numerical problems and Revision.
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Unit 3: Theory of relativityFrame of reference, limitation of Newton's law of motion, Inertial frame of reference,Galilean transformation, Frame of reference with linear acceleration
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Classical relativity-Galilean invariance, Transformation equation for a frame of reference- inclined to an inertial frame and Rotating frame of reference,
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Non-inertial frames-The accelerated frame of reference and Rotating frame of reference, Numerical and short Answers
30 Oct, 2022	Sunday

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher –Ms. Meenu Sharma Class- B.Sc-First Year (1st SEM) Subject- Classical Mechanics and Theory of Relativity Paper- PH-101

November, 2022 1 st Week 1 Nov, 2022	Haryana Day Effect of centrifugal and coriolis forces due to Earth's rotation,
2 Nov - 5 Nov	Fundamental frame of reference, Michelson- Morley's experiment, concept of Einstein's relativity.
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Unit 4: Applications of theory of relativity
7 1107 - 12 1107	Special theory of relativity, Lorentz co-ordinate and physical significance of Lorentz invariance
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week	Length Contraction, Time Dilation, Twin Paradox, Velocity addition
14 Nov - 19 Nov	theorem,
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Variation of mass with velocity, Mass energy equivalence, Transformation of relativistic momentum and energy, relation between relativistic momentum and energy,
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Sessional Exams
4 Dec, 2022	Sunday
2 nd Week	Mass, velocity, momentum and energy of zero rest mass.
5 Dec - 10 Dec	Numerical problems and Revision.
3 rd Week	University Examination
15 Dec,2022 Onwards	

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Meenu Sharma Class- B.Sc. Second Year (3rd SEM) Subject- Wave and Optics Paper- PH-302

September, 2022 1 st Week 1 Sept-3 Sept	Unit 1: Interference I Interference by Division of wave front, Young's double slit experiment,
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Coherence, conditions of Interference.
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Fresnel's biprism and its applications to determination of wavelength of sodium light and thickness of a mica sheet
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Lloyd's mirror Difference between Bi-prism and Lloyd's mirror fringes, phase change on reflection Class Test
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Unit 2: Interference II Interference by division of Amplitude, thin films, plane parallel film
30 Sept, 2022	Talent show

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Meenu Sharma Class- B.Sc. Second Year (3rd SEM) Subject- Wave and Optics Paper- PH-302

October, 2022	
1 st Week	Talent Show Holiday
1 Oct,2022	
2 Oct, 2022	Sunday
, ,	
1 st Week	Revision of Unit 1
3 Oct - 8 Oct	
	Interference due to transmitted light, wedge shaped film
5.0.4.2022	
5 Oct,2022	Dussehra
9 Oct,2022	Sunday
2 nd Week	Neutenie
^{2nd} Week 10 Oct - 15 Oct	Newton's rings,
10 001 - 15 001	Interferometers; Michelson interferometer and its applications to
	1)standardization of a meter 2)determination of wavelength
13 Oct, 2022	Karwa Chauth
16 Oct,2022	Sunday
and TTI I	
3 rd Week	Revision of unit 2
17 Oct - 21 Oct	Unit- 3: Diffraction I
	Onit- 5. Dimaction i
	Huygens's Fresnel's diffraction: Fresnel's assumptions and half period
	zones, rectilinear propagation of light
	zones, recumear propagation of right
22 Oct - 26 Oct	Diwali Break
Ath XX/a ala	
4 th Week	zone plate, diffraction at a straight edge, rectangular slit and circular
4 th Week 27 Oct - 31 Oct	zone plate, diffraction at a straight edge, rectangular slit and circular aperture
27 Oct - 31 Oct	aperture

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Meenu Sharma Class- B.Sc. Second Year (3rd SEM) Subject- Wave and Optics Paper- PH-302

N	
November, 2022	
1 st Week	U D
1 Nov, 2022	Haryana Day
1 st Week	diffraction due to a narrow slit and wire
2 Nov - 5 Nov	
	Revision of Unit 3
6 Nov, 2022	Sunday
2 nd Week	Unit -4: Diffraction II
7 Nov – 12 Nov	Fraunhoffer diffraction: single-slit diffraction
8 Nov,2022	Sh. Guru Nanak Dev jayanti
13 Nov, 2022	Sunday
3 rd Week	Fraunhoffer diffraction :double-slit diffraction-slit diffraction,
5 Week 14 Nov - 19 Nov	
14 1100 - 17 1100	plane transmission granting spectrum,
	plane transmission granting spectrum,
20 Nov, 2022	Sunday
4 th Week	dispersive power of grating, limit of resolution,
21 Nov - 26 Nov	
	Rayleigh's criterion
27 Nov, 2022	Sunday
5 th Week	Sessional Exams
28 Nov – 3 Dec	
4 Dec, 2022	Sunday
2 nd Week	resolving power of telescope and a grating. Differences between Prism
5 Dec - 10 Dec	and grating spectra.
	Revision of unit 4
3 rd Week	University Examination
15 Dec,2022	
Onwards	

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Vandana Class- B.Sc-First Year (1st SEM) Subject- Electricity, Magnetism and EMT Paper- PH-102

September, 2022 1 st Week	Unit I: Vector background and Electric field
1 Sept-3 Sept	Introduction of vector and scalar fields
	Gradient of a scalar and its physical significance
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Line, Surface and Volume integrals of a vector and their physical significance, Flux of a vector field,
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Divergence and curl of a vector and their physical significance, Gauss's divergence theorem,
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Stokes theorem, Derivation of electric field E from potential as gradient
23 Sept,2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day
25 Sept, 2022 26 Sept, 2022	Sunday Maharana Agrasen Jayanti
	Ŭ Î
5 th Week 27 Sept - 29 Sept	Derivation of Laplace and Poisson equations, Electric flux Gauss's Law
30 Sept, 2022	Talent show

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Vandana Class- B.Sc-First Year (1st SEM) Subject- Electricity, Magnetism and EMT Paper- PH-102

October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Mechanical force of charged surface, Energy per unit volume. Revision
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Magnetic induction, Magnetic flux, Solenoidal nature of vector field of induction, properties of B (i) Div (B)=0 (ii) Curl (B)=µJ
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Electronic theory of dia and paramagnetism, Domain theory of ferromagnetism (Langevin's theory)
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Cycle of magnetization- hysteresis loop (Energy dissipation, Hysteresis loss and importance of Hysteresis Curve)
30 Oct, 2022	Sunday

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Vandana Class- B.Sc-First Year (1st SEM) Subject- Electricity, Magnetism and EMT Paper- PH-102

November, 2022	
1 st Week	
1 Nov, 2022	Haryana Day
,	
1 st Week	Unit 3: Electromagnetism
2 Nov - 5 Nov	Unit 5. Electromagnetism
2 INUV - 5 INUV	Maxwell equations and their derivations,
	•
	Displacement current, Vector and Scalar potentials
6 Nov, 2022	Sunday
2 nd Week	Boundary conditions at interface between two different media,
2 VVCCK 7 Nov – 12 Nov	
7 100 - 12 100	Propagation of electromagnetic wave (Basic idea, no derivation), Poynting
	vector and Poynting theorem.
8 Nov,2022	Sh. Guru Nanak Dev jayanti
13 Nov, 2022	Sunday
3 rd Week	Unit 4: A. C. Analysis
14 Nov - 19 Nov	- · · · · · · · · · · · · · · · · · · ·
	A.C. circuit analysis using complex variable with (a) Capacitance and
	Resistance (CR)
	Resistance (CR)
	(b) Resistance and Inductance (LR)
	(b) Resistance and inductance (ER)
20 Nov, 2022	Sunday
4 th Week	(c) Capacitance and Inductance (LC) and
21 Nov - 26 Nov	(c) Capacitance and inductance (LC) and
21 1100 - 20 1100	(d) Capacitance, Inductance and Resistance (LCR),
	(d) Supustance, inductance and resistance (EST);
27 Nov, 2022	Sunday
5 th Week	Sessional Exams
28 Nov – 3 Dec	
20 MOV = 3 Dec	
4.D. 2022	
4 Dec, 2022	Sunday
2 nd Week	Quality factor (sharpness of resonance).
5 Dec - 10 Dec	
	Series and parallel resonance circuit,
	· · ·
3 rd Week	University Examination
15 Dec,2022	
Onwards	

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Vandana Class- B.Sc. Third Year (5th SEM) Subject- Quantum and Laser Physics Paper- PH-501

September, 2022	Unit I: Origin quantum physics (Experimental basis)
1 st Week 1 Sept-3 Sept	Overview, scale of quantum physics, boundary between classical and quantum phenomena, Photon, Photoelectric effect, Compton effect (theory and result), Frank-Hertz experiment, de-Broglie hypothesis.
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Davisson and Germer experiment, G.P.Thomson experiment. Phase velocity, group velocity and their relation. Heisenberg's uncertainty principle.
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Time energy and angular momentum, position uncertainty. Uncertainty principle from de Broglie wave. (Wave-particle duality). Gamma Ray Microscope, Electron diffraction from a slit.
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Time-independent Schrodinger wave equation, Eigen values, Eigen functions, wave functions and its Significance.
	Derivation of 1-D time-dependent Schrodinger wave equation (subject to force, free particle).
23 Sept,2022 25 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday
26 Sept, 2022	Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Orthogonality and Normalization of function, concept of observer and Operator. Expectation values of dynamical quantities, probability current density.
30 Sept, 2022	Talent show

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Vandana Class- B.Sc. Third Year (5th SEM) Subject- Quantum and Laser Physics Paper- PH-501

October, 2022	
· · · · · · · · · · · · · · · · · · ·	
1 st Week	Talent Show Holiday
1 Oct,2022	
2 Oct, 2022	Sunday
1 st Week	Revision and Class Test
3 Oct - 8 Oct	Revision and Class 1 est
5 000 - 0 000	Unit II: Application of Schrodinger wave equation:
	Free particle in one-dimensional box (solution of Schrodinger wave
	equation, Eigen functions, Eigen values, quantization of energy and
	momentum, nodes and anti nodes, zero point energy).
5 Oct,2022	Dussehra
9 Oct,2022	Sunday
2 nd Week	ii) One dimensional step potential $E > Vo$ (Reflection and Transmission
10 Oct - 15 Oct	
	coefficient)
	(iii) One dimensional standarticl \mathbf{F} ($\mathbf{V}_{\mathbf{r}}$ (monotonic) doubt
	(iii) One dimensional step potential $E < Vo$ (penetration depth
	calculation).
12 Oct 2022	Karwa Chauth
13 Oct, 2022	
16 Oct,2022	Sunday
3 rd Week	(iv) One dimensional potential barrier, $E > Vo$ (Reflection and
17 Oct - 21 Oct	
17 001 - 21 001	Transmission
	coefficient)
	(v) One-dimensional potential barrier, $E < Vo$ (penetration or tunneling
	coefficient).
22 Oct - 26 Oct	Diwali Break
22 OU - 20 OU	
4 th Week	(vi) Solution of Schrodinger equation for harmonic oscillator (quantization
27 Oct - 31 Oct	of energy, Zero-point energy, wave equation for ground state and excited
	states).
30 Oct, 2022	Sunday
	Summy

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Vandana
Class- B.Sc. Third Year (5th SEM)
Subject- Quantum and Laser Physics
Paper- PH-501

November, 2022	
1 st Week	
1 Nov, 2022	Haryana Day
1 st Week	Revision and Class Test
2 Nov - 5 Nov	
	Unit III: Laser Physics – I Absorption and emission of radiation, Main
	features of a laser: Directionality, high intensity, high degree of coherence,
	spatial and temporal coherence,
6 Nov, 2022	Sunday
2 nd Week	kinetics of optical absorption ((two and three level rate equation,
7 Nov – 12 Nov	Fuchbauer landerburg formula). Einstein's coefficients and possibility of
	amplification, momentum transfer, life time of a level, population
	inversion: A necessary condition for light amplification, resonance
8 Nov,2022	Sh. Guru Nanak Dev jayanti
13 Nov, 2022	Sunday
3 rd Week	cavity, laser pumping, Threshold condition for laser emission, line
14 Nov - 19 Nov	broadening mechanism homogeneous and inhomogeneous line broadening
	(natural, collision and Doppler broadening).
20 Nov, 2022	Sunday
4 th Week	Revision
21 Nov - 26 Nov	
211100 - 201100	Unit IV. Laser Physics – II He-Ne laser and RUBY laser (Principle
21 1107 - 20 1107	Unit IV: Laser Physics – II He-Ne laser and RUBY laser (Principle, Construction and working)
	Construction and working),
27 Nov, 2022	Construction and working), Sunday
27 Nov, 2022 5 th Week	Construction and working),
27 Nov, 2022	Construction and working), Sunday
27 Nov, 2022 5 th Week 28 Nov – 3 Dec	Construction and working), Sunday Sessional Exams
27 Nov, 2022 5 th Week	Construction and working), Sunday
27 Nov, 2022 5 th Week 28 Nov – 3 Dec	Construction and working), Sunday Sessional Exams Sunday
27 Nov, 2022 5 th Week 28 Nov – 3 Dec 4 Dec, 2022	Construction and working), Sunday Sessional Exams Sunday Optical properties of semiconductor, Semiconductor laser (Principle,
27 Nov, 2022 5 th Week 28 Nov – 3 Dec 4 Dec, 2022 2 nd Week	Construction and working), Sunday Sessional Exams Sunday
27 Nov, 2022 5 th Week 28 Nov – 3 Dec 4 Dec, 2022 2 nd Week	Construction and working), Sunday Sessional Exams Sunday Optical properties of semiconductor, Semiconductor laser (Principle, Construction and working), Applications of lasers in the field of medicine
27 Nov, 2022 5 th Week 28 Nov – 3 Dec 4 Dec, 2022 2 nd Week	Construction and working), Sunday Sessional Exams Sunday Optical properties of semiconductor, Semiconductor laser (Principle, Construction and working), Applications of lasers in the field of medicine and industry.
27 Nov, 2022 5 th Week 28 Nov – 3 Dec 4 Dec, 2022 2 nd Week 5 Dec - 10 Dec	Construction and working), Sunday Sessional Exams Sunday Optical properties of semiconductor, Semiconductor laser (Principle, Construction and working), Applications of lasers in the field of medicine and industry. Revision

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher –Ms. Shruti Jain Class- B.Sc.-Second Year (3rd SEM) Subject- Computer Programming and Thermodynamics Paper- PH-301

September, 2022	UNIT-1: Computer Programming
1 st Week 1 Sept-3 Sept	Computer organization, binary representation, algorithm development,
	Flow-chart and their interpretation. FORTRAN preliminaries: integer and floating points arithmetic expression
4 Sept, 2022	Sunday
2 nd Week	built-in-function, executable and non-executable statement , input and output
5 Sept- 10 Sept	statements Formats, IF, Do and Go To statements, dimension arrays, statements function and function subprogram
11 Sept, 2022	Sunday
3 rd Week	UNIT –2: Applications of FORTRAN programming
12 Sept-17 Sept	Algorithm, Flow Chart and Programming for Print out of natural numbers, Range of the set of given numbers
18 Sept, 2022	Sunday
4 th Week	Ascending and descending order, Mean and standard deviation, Least square
19 Sept-24 Sept	fitting of curve, Roots of quadratic equation
23 Sept,2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day
25 Sept, 2022	Sunday
26 Sept, 2022	Maharana Agrasen Jayanti
5 th Week	Revision and class test
27 Sept - 29 Sept	
	Product of two matrices, Numerical integration (Trapezoidal rule and Simpson 1/3 rule).
30 Sept, 2022	Talent show

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher –Ms. Shruti Jain Class- B.Sc.-Second Year (3rd SEM) Subject- Computer Programming and Thermodynamics Paper- PH-301

October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	UNIT-3: Thermodynamics-I Thermodynamic system and Zeroth law of thermodynamics .first law of thermodynamics and its limitations, reversible and irreversible process.
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	second law of thermodynamics and its significance ,Carnot theorem , Absolute scale of temperature ,Absolute scale and magnitude of each division on work scale and perfect gas scale ,
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Joule free expansion, joule Thomson effect, joule Thomson experiment , conclusions and explanation, analytical treatment of Joule Thomson effect. Entropy ,calculations of entropy of reversible and irreversible process, T-S diagram, entropy of perfect gas, Nernst heat law
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Liquefaction of gases (oxygen , air, hydrogen and helium) , solidification of He below 4K ,cooling by adiabatic demagnetization
30 Oct, 2022	Sunday

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher –Ms. Shruti Jain Class- B.Sc.-Second Year (3rd SEM) Subject- Computer Programming and Thermodynamics Paper- PH-301

November, 2022	
1 st Week	
1 Nov, 2022	Haryana Day
1 st Week	Class Test
2 Nov - 5 Nov	UNIT-4: Thermodynamics-II Derivation of Clausius-Clapeyron and Clausius latent heat equation and their significance, specific heat of saturated vapours,
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Phase diagram and triple point of a substance, development of Maxwell thermodynamical relations.
8 Nov,2022	Sh. Guru Nanak Dev jayanti
13 Nov, 2022	Sunday
3 rd Week	Thermodynamical functions: Internal energy (U), Helmholtz function (F),
14 Nov - 19 Nov	Enthalpy (H), Gibbs function (G) and the relations between them, derivation of Maxwell thermodynamical relations from thermodynamical functions,
20 Nov, 2022	Sunday
4 th Week	Derivation of Clausius-Clapeyron and Clausius equation, variation of intrinsic
21 Nov - 26 Nov	energy with volume for (i) perfect gas (ii)Vander wall gas (iii)solids and liquids
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Sessional Exams
4 Dec, 2022	Sunday
2 nd Week	Derivation of Stefan's law, adiabatic compression and expansion of gas &
5 Dec - 10 Dec	deduction of theory of Joule Thomson effect.
3 rd Week	University Examination
15 Dec,2022	
Onwards	

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher –Ms. Shruti Jain Class- B.Sc. Third Year (5th SEM) Subject- Nuclear Physics Paper- PH-502

September, 2022	Unit I: Nuclear Structure and Properties of Nuclei
1 st Week	-
1 Sept-3 Sept	Nuclear composition (p-e and p-n hypotheses), Nuclear properties; Nuclear size, spin, parity, Statistics, magnetic dipole moment, quadruple moment (shape concept).
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Determination of mass by Bain-Bridge, Bain-Bridge and Jordan mass spectrograph.Determination of charge by Mosley Law.
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Determination of size of nuclei by Rutherford
	Back Scattering. mass and binding energy, systematic of nuclear binding
	energy, nuclear stability
	Revision and Class Test
18 Sept, 2022	Sunday
4 th Week	Unit II: Nuclear Radiation decay Processes
19 Sept-24 Sept	Alpha-disintegration and its theory. Energetics of alpha-decay, Origin of continuous beta Spectrum (neutrino hypothesis), types of beta-decay and energetics of beta-decay. Nature Of gamma rays, Energetics of gamma rays.
23 Sept,2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day
25 Sept, 2022	Sunday
26 Sept, 2022	Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Radiation interactionInteraction of heavy charged particles (Alpha particles); Energy loss of heavy charged particle (idea of Bethe formula, no derivation), Range and straggling of alpha particles, Geiger-Nuttal law
30 Sept, 2022	Talent show

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher –Ms. Shruti Jain Class- B.Sc. Third Year (5th SEM) Subject- Nuclear Physics Paper- PH-502

October, 2022 1 st Week	Talent Show Holiday
1 Oct,2022	
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Interaction of light charged particle (Beta-particle), Energy loss of Beta-particles (ionization), Range of electrons, absorption of beta- particles. Interaction of Gamma Ray;
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Passage of Gamma radiations through matter (Photoelectric, Compton and pair production effect) electron-positron annihilation. Absorption of Gamma rays (Mass Attenuation coefficient) and its application.
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Revision and Class Test Unit III: Nuclear Accelerators Linear accelerator, Tandem accelerator, Cyclotron and Betatron accelerators.
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Nuclear Radiation Detectors.
	Gas filled counters; Ionization chamber,
30 Oct, 2022	Sunday

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher –Ms. Shruti Jain Class- B.Sc. Third Year (5th SEM) Subject- Nuclear Physics Paper- PH-502

November, 2022	
1 st Week	
	Herriene Dev
1 Nov, 2022	Haryana Day
1 st Week	proportional counter, G.M. Counter (detailed study), Scintillation counter
2 Nov - 5 Nov	and semiconductor detector
6 Nov, 2022	Sunday
2 nd Week	Revision and Class Test
7 Nov – 12 Nov	Unit IV: Nuclear reactions.
	Nuclear reactions, Elastic scattering, Inelastic scattering, Nuclear
	disintegration,
8 Nov,2022	Sh. Guru Nanak Dev jayanti
13 Nov, 2022	Sunday
3 rd Week	Photonuclear reaction, Radiative capture, Direct reaction, Heavy ion
14 Nov - 19 Nov	reactions and Spallation Reactions.
20 Nov, 2022	Sunday
4 th Week	Conservation laws, Q-value and reaction threshold.
21 Nov - 26 Nov	Conservation laws, Q-value and reaction uneshold.
211107 - 201107	Nuclear Reactors: Nuclear Reactors, General aspects of Reactor Design.
27 Nov, 2022	Sunday
5 th Week	Sessional Exams
28 Nov – 3 Dec	
4 Dec, 2022	Sunday
,	
2 nd Week	Nuclear fission and fusion reactors, (Principle, construction, working and
5 Dec - 10 Dec	use).
	Revision
3 rd Week	University Examination
15 Dec,2022	
Onwards	