KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

October, 2021 2nd Week **11 Oct-16 Oct**	**Unit 1: Basic concepts of Classical mechanics** Mechanics of single and system of particles, Conversion law of linear momentum,
15 Oct, 2021 **17 Oct, 2021**	**(Dussehra)** **Sunday**
3rd Week **18 Oct-23 Oct**	Conversion law of Angular momentum and mechanical energy for a particle and a system of particles,
20 Oct, 2021 **24 Oct, 2021**	**Maharishi Valmiki Jayanti** **Sunday**
May, 2021 4th Week **25 Oct-30 Oct**	Centre of Mass and equation of motion Constrained Motion, Numerical problems and Revision
31 Oct, 2021	**Sunday**
November, 2021 1st Week **1 Nov-7 Nov**	**(Haryana Day)** **Diwali Holidays**
2nd Week **8 Nov-13 Nov**	**Unit2: Generalized Notations** Degrees of freedom and Generalized coordinates, Transformation equations, Generalized Displacement
14 Nov, 2021	**Sunday**
3rdWeek **15 Nov-20 Nov**	Generalized Velocity, Acceleration, Momentum, Force and Potential, Hamilton's variational principle
19 Nov,2021 **21 Nov, 2021**	**Sh. Guru Nanak jayanti** **Sunday**
4thWeek **22 Nov-27**	Lagrange's equation of motion from Hamilton's principle, Linear Harmonic oscillator, Simple pendulum, Atwood's machine.

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

28 Nov, 2021	**Sunday**
Dec, 2021 1ˢᵗ Week **29 Nov-04 Dec**	Numerical problems and Revision.
05 Dec, 2021	**Sunday**
2ⁿᵈ Week **06 Dec -11 Dec**	**Unit 3: Theory of relativity** Frame of reference, limitation of Newton's law of motion, Inertial frame of reference, Galilean transformation, Frame of reference with linear acceleration
12 Dec,2021	**Sunday**
3ʳᵈ week **13 Dec -18 Dec**	Classical relativity-Galilean invariance, Transformation equation for a frame of reference- inclined to an inertial frame and Rotating frame of reference,
19 Dec,2021	**Sunday**
4ᵗʰ Week **20 Dec-24 Dec**	Non-inertial frames-The accelerated frame of reference and Rotating frame of reference,
25 Dec,2021 **26 Dec,2021**	**Christmas** **Sunday**
5ᵗʰ Week **27 Dec -01 Jan**	Numerical and short Answers **Sessionals**
2 Jan ,2022	**Sunday**
Jan ,2022 1ˢᵗ week **3 Jan – 8 Jan**	Effect of centrifugal and coriolis forces due to Earth's rotation, Fundamental frame of reference, Michelson- Morley's experiment, concept of Einstein's relativity.
9 Jan ,2022	**Sunday(Sh. Guru Gobind Singh's Birthday)**
2ⁿᵈ Week **10 Jan – 15 Jan**	**Unit 4: Applications of theory of relativity** Special theory of relativity, Lorentz co-ordinate and physical significance of Lorentz invariance
13 Jan,2022 **16 Jan ,2022**	**Lohri** **Sunday**

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

3ʳᵈ week **17 Jan – 22 Jan**	Length Contraction, Time Dilation, Twin Paradox, Velocity addition theorem,
23 Jan ,2022	**Sunday**
4ᵗʰ Week **24 Jan – 29 Jan**	Variation of mass with velocity, Mass energy equivalence
26 Jan, 2022 **30 Jan ,2022**	**Republic Day** **Sunday**
Feb, 2022 **1ˢᵗ week** **31 Feb-4 Feb**	Transformation of relativistic momentum and energy, relation between relativistic momentum and energy,
5 Feb, 2022 **6 Feb ,2022**	**Vasant Panchmi** **Sunday**
2ⁿᵈ week **7 Feb- 12 Feb**	Mass, velocity, momentum and energy of zero rest mass.
13 Feb ,2022	**Sunday**
3ʳᵈ week **14 Feb- 17 Feb**	Numerical problems and Revision.

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

October, 2021 2nd Week **11 Oct-16 Oct**	**Unit I: Vector background and Electric field** Introduction of vector and scalar fields Gradient of a scalar and its physical significance
15 Oct, 2021 **17 Oct, 2021**	**(Dussehra)** **Sunday**
3ʳᵈ Week **18 Oct-23 Oct**	Line, Surface and Volume integrals of a vector and their physical significance, Flux of a vector field,
20 Oct, 2021 **24 Oct, 2021**	**Maharishi Valmiki Jayanti** **Sunday**
May, 2021 4ᵗʰ Week **25 Oct-30 Oct**	Divergence and curl of a vector and their physical significance, Gauss's divergence theorem,
31 Oct, 2021	**Sunday**
November, 2021 1ˢᵗ Week **1 Nov-7 Nov**	**(Haryana Day)** **Diwali Holidays**
2nd Week **8 Nov-13 Nov**	Stokes theorem, Derivation of electric field E from potential as gradient
14 Nov, 2021	**Sunday**
3ʳᵈWeek **15 Nov-20 Nov**	Derivation of Laplace and Poisson equations, Electric flux Gauss's Law
19 Nov,2021 **21 Nov, 2021**	**Sh. Guru Nanak jayanti** **Sunday**
4ᵗʰWeek **22 Nov-27**	Mechanical force of charged surface, Energy per unit volume. **Revision**

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

28 Nov, 2021	**Sunday**
Dec, 2021 1ˢᵗ Week **29 Nov-04 Dec**	Magnetic induction, Magnetic flux, Solenoidal nature of vector field of induction, properties of B (i) Div (B)=0 (ii) Curl (B)=μJ
05 Dec, 2021	**Sunday**
2ⁿᵈ Week **06 Dec -11 Dec**	Electronic theory of dia and paramagnetism, Domain theory of ferromagnetism (Langevin's theory)
12 Dec,2021	**Sunday**
3ʳᵈ week **13 Dec -18 Dec**	Cycle of magnetization- hysteresis loop (Energy dissipation, Hysteresis loss and importance of Hysteresis Curve)
19 Dec,2021	**Sunday**
4ᵗʰ Week **20 Dec-24 Dec**	**Unit 3: Electromagnetism** Maxwell equations and their derivations,
25 Dec,2021 **26 Dec,2021**	**Christmas** **Sunday**
5ᵗʰ Week **27 Dec -01 Jan**	Displacement current, Vector and Scalar potentials
2 Jan ,2022	**Sunday**
Jan ,2022 1ˢᵗ week **3 Jan – 8 Jan**	Boundary conditions at interface between two different media, Propagation of electromagnetic wave (Basic idea, no derivation),
9 Jan ,2022	**Sunday(Sh. Guru Gobind Singh's Birthday)**
2ⁿᵈ Week **10 Jan – 15 Jan**	Poynting vector and Poynting theorem.
13 Jan,2022 **16 Jan ,2022**	**Lohri** **Sunday**

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

3rd week 17 Jan – 22 Jan	**Revision And Class Test**
23 Jan ,2022	**Sunday**
4th Week 24 Jan – 29 Jan	**Unit 4: A. C. Analysis** A.C. circuit analysis using complex variable with (a) Capacitance and Resistance (CR) (b) Resistance and Inductance (LR)
26 Jan, 2022 30 Jan ,2022	**Republic Day** **Sunday**
Feb, 2022 1st week 31 Feb-4 Feb	(c) Capacitance and Inductance (LC) and (d) Capacitance, Inductance and Resistance (LCR),
5 Feb, 2022 6 Feb ,2022	**VasantPanchmi** **Sunday**
2nd week 7 Feb- 12 Feb	Series and parallel resonance circuit, **Sessional**
13 Feb ,2022	**Sunday**
3rd week 14 Feb- 17 Feb	Quality factor (sharpness of resonance). Revision

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

October, 2021 2nd Week **11 Oct-16 Oct**	**UNIT-1: Computer Programming** Computer organization, binary representation, algorithm development
15 Oct, 2021 **17 Oct, 2021**	**(Dussehra)** **Sunday**
3rd Week **18 Oct-23 Oct**	Flow-chart and their interpretation. FORTRAN preliminaries: integer and floating points arithmetic expression
20 Oct, 2021 **24 Oct, 2021**	**Maharishi Valmiki Jayanti** **Sunday**
May, 2021 4th Week **25 Oct-30 Oct**	built-in-function, executable and non-executable statement , input and output statements
31 Oct, 2021	**Sunday**
November, 2021 1st Week **1 Nov-7 Nov**	**(Haryana Day)** **Diwali Holidays**
2nd Week **8 Nov-13 Nov**	Formats, IF, Do and Go To statements, dimension arrays, statements function and function subprogram
14 Nov, 2021	**Sunday**
3rdWeek **15 Nov-20 Nov**	**UNIT –2: Applications of FORTRAN programming** Algorithm, Flow Chart and Programming for Print out of natural numbers, Range of the set of given numbers
19 Nov,2021 **21 Nov, 2021**	**Sh. Guru Nanak jayanti** **Sunday**
4thWeek **22 Nov-27**	Ascending and descending order, Mean and standard deviation,

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

28 Nov, 2021	**Sunday**
Dec, 2021 **1ˢᵗ Week** **29 Nov-04 Dec**	Least square fitting of curve, Roots of quadratic equation
05 Dec, 2021	**Sunday**
2ⁿᵈ Week **06 Dec -11 Dec**	Product of two matrices, Numerical integration (Trapezoidal rule and Simpson 1/3 rule) .
12 Dec,2021	**Sunday**
3ʳᵈ week **13 Dec -18 Dec**	Revision class problems and class test
19 Dec,2021	**Sunday**
4ᵗʰ Week **20 Dec-24 Dec**	**UNIT-3: Thermodynamics-I** Thermodynamic system and Zeroth law of thermodynamics .first law of thermodynamics and its limitations, reversible and irreversible process.
25 Dec,2021 **26 Dec,2021**	**Christmas** **Sunday**
5ᵗʰ Week **27 Dec -01 Jan**	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 ,
2 Jan ,2022	**Sunday**
Jan ,2022 **1ˢᵗ week** **3 Jan – 8 Jan**	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
9 Jan ,2022	**Sunday(Sh. Guru Gobind Singh's Birthday)**
2ⁿᵈ Week **10 Jan – 15 Jan**	Liquefaction of gases (oxygen , air, hydrogen and helium) , solidification of He below 4K ,cooling by adiabatic demagnetization
13 Jan,2022 **16 Jan ,2022**	**Lohri** **Sunday**

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

3ʳᵈ week **17 Jan – 22 Jan**	**Sessionals Revision** **Class Test** UNIT-4: Thermodynamics-II Derivation of Clausius-Clapeyron and Clausius latent heat equation and their significance, specific heat of saturated vapours,
23 Jan ,2022	**Sunday**
4ᵗʰ Week **24 Jan – 29 Jan**	Phase diagram and triple point of a substance, development of Maxwell thermodynamical relations.
26 Jan, 2022 **30 Jan ,2022**	**Republic Day** **Sunday**
Feb, 2022 1ˢᵗ week **31 Feb-4 Feb**	Thermodynamical functions: Internal energy (U), Helmholtz function (F), Enthalpy (H), Gibbs function (G) and the relations between them, derivation of Maxwell thermodynamical relations from thermodynamical functions,
5 Feb, 2022 **6 Feb ,2022**	**Vasant Panchmi** **Sunday**
2ⁿᵈ week **7 Feb- 12 Feb**	Derivation of Clausius-Clapeyron and Clausius equation, variation of intrinsic energy with volume for (i) perfect gas (ii)Vander wall gas (iii)solids and liquids
13 Feb ,2022	**Sunday**
3ʳᵈ week **14 Feb- 17 Feb**	Derivation of Stefan's law, adiabatic compression and expansion of gas & deduction of theory of Joule Thomson effect.

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

October, 2021 2nd Week **11 Oct-16 Oct**	**Unit 1: Interference I** Interference by Division of wave front, Young's double slit experiment,
15 Oct, 2021 **17 Oct, 2021**	**(Dussehra)** **Sunday**
3ʳᵈ Week **18 Oct-23 Oct**	Coherence, conditions of Interference.
20 Oct, 2021 **24 Oct, 2021**	**Maharishi Valmiki Jayanti** **Sunday**
May, 2021 4ᵗʰ Week **25 Oct-30 Oct**	Fresnel's biprism and its applications to determination of wavelength of sodium light and thickness of a mica sheet
31 Oct, 2021	**Sunday**
November, 2021 1ˢᵗ Week **1 Nov-7 Nov**	**(Haryana Day)** **Diwali Holidays**
2nd Week **8 Nov-13 Nov**	Lloyd's mirror **Class Test**
14 Nov, 2021	**Sunday**
3ʳᵈWeek **15 Nov-20 Nov**	Difference between Bi-prism and Lloyd's mirror fringes, phase change on reflection
19 Nov,2021 **21 Nov, 2021**	**Sh. Guru Nanak jayanti** **Sunday**
4ᵗʰWeek **22 Nov-27**	**Unit 2: Interference II** Interference by division of Amplitude, thin films, plane parallel film

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

28 Nov, 2021	**Sunday**
Dec, 2021 **1st Week** **29 Nov-04 Dec**	Revision of Unit 1
05 Dec, 2021	**Sunday**
2nd Week **06 Dec -11 Dec**	Interference due to transmitted light, wedge shaped film
12 Dec,2021	**Sunday**
3rd week **13 Dec -18 Dec**	Newton's rings
19 Dec,2021	**Sunday**
4th Week **20 Dec-24 Dec**	Interferometers; Michelson interferometer and its applications to 1)standardization of a meter 2)determination of wavelength
25 Dec,2021 **26 Dec,2021**	**Christmas** **Sunday**
5th Week **27 Dec -01 Jan**	Revision of unit 2
2 Jan ,2022	**Sunday**
Jan ,2022 **1st week** **3 Jan – 8 Jan**	**Unit- 3: Diffraction I** Huygens's Fresnel's diffraction: Fresnel's assumptions and half period zones, rectilinear propagation of light
9 Jan ,2022	**Sunday(Sh. Guru Gobind Singh's Birthday)**
2nd Week **10 Jan – 15 Jan**	zone plate, diffraction at a straight edge, rectangular slit and circular aperture,
13 Jan,2022 **16 Jan ,2022**	**Lohri** **Sunday**

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

3rd week **17 Jan – 22 Jan**	diffraction due to a narrow slit and wire Revision of Unit 3 **Sessionals**
23 Jan ,2022	**Sunday**
4th Week **24 Jan – 29 Jan**	**Unit -4: Diffraction II** Fraunhoffer diffraction: single-slit diffraction
26 Jan, 2022 **30 Jan ,2022**	**Republic Day** **Sunday**
Feb, 2022 **1st week** **31 Feb-4 Feb**	Fraunhoffer diffraction :double-slit diffraction-slit diffraction, plane transmission granting spectrum,
5 Feb, 2022 **6 Feb ,2022**	**Vasant Panchmi** **Sunday**
2nd week **7 Feb- 12 Feb**	dispersive power of grating, limit of resolution, Rayleigh's criterion
13 Feb ,2022	**Sunday**
3rd week **14 Feb- 17 Feb**	resolving power of telescope and a grating. Differences between Prism and grating spectra. Revision of unit 4

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

October, 2021 2nd Week **11 Oct-16 Oct**	**Unit I: Origin quantum physics (Experimental basis)** 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.
15 Oct, 2021 **17 Oct, 2021**	**(Dussehra)** **Sunday**
3rd Week **18 Oct-23 Oct**	Davisson and Germer experiment, G.P.Thomson experiment. Phase velocity, group velocity and their relation. Heisenberg's uncertainty principle.
20 Oct, 2021 **24 Oct, 2021**	**Maharishi Valmiki Jayanti** **Sunday**
May, 2021 4th Week **25 Oct-30 Oct**	Time energy and angular momentum, position uncertainty. Uncertainty principle from de Broglie wave. (Wave-particle duality). Gamma Ray Microscope, Electron diffraction from a slit.
31 Oct, 2021	**Sunday**
November, 2021 1st Week **1 Nov-7 Nov**	**(Haryana Day)** **Diwali Holidays**
2nd Week **8 Nov-13 Nov**	Derivation of 1-D time-dependent Schrodinger wave equation (subject to force, free particle).
14 Nov, 2021	**Sunday**
3rdWeek **15 Nov-20 Nov**	Time-independent Schrodinger wave equation, Eigen values, Eigen functions, wave functions and its Significance.
19 Nov,2021 **21 Nov, 2021**	**Sh. Guru Nanak jayanti** **Sunday**
4thWeek **22 Nov-27**	Orthogonality and Normalization of function, concept of observer and Operator. Expectation values of dynamical quantities, probability current density.

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

28 Nov, 2021	**Sunday**
Dec, 2021 1ˢᵗ Week **29 Nov-04 Dec**	**Revision and Class Test** **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).
05 Dec, 2021	**Sunday**
2ⁿᵈ Week **06 Dec -11 Dec**	ii) One dimensional step potential $E > V_o$ (Reflection and Transmission coefficient) (iii) One dimensional step potential $E < V_o$ (penetration depth calculation).
12 Dec,2021	**Sunday**
3ʳᵈ week **13 Dec -18 Dec**	(iv) One dimensional potential barrier, $E > V_o$ (Reflection and Transmission coefficient) (v) One-dimensional potential barrier, $E < V_o$ (penetration or tunneling coefficient).
19 Dec,2021	**Sunday**
4ᵗʰ Week **20 Dec-24 Dec**	(vi) Solution of Schrodinger equation for harmonic oscillator (quantization of energy, Zero-point energy, wave equation for ground state and excited states).
25 Dec,2021 **26 Dec,2021**	**Christmas** **Sunday**
5ᵗʰ Week **27 Dec -01 Jan**	**Revision and Class Test** **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,
2 Jan ,2022	**Sunday**
Jan ,2022 1ˢᵗ week **3 Jan – 8 Jan**	Einstein's coefficients and possibility of amplification, momentum transfer, life time of a level,
9 Jan ,2022	**Sunday(Sh. Guru Gobind Singh's Birthday)**
2ⁿᵈ Week **10 Jan – 15 Jan**	kinetics of optical absorption ((two and three level rate equation, Fuchbauer landerburg formula)
13 Jan,2022 **16 Jan ,2022**	**Lohri** **Sunday**

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

3rd week **17 Jan – 22 Jan**	population inversion: A necessary condition for light amplification, resonance
23 Jan ,2022	**Sunday**
4th Week **24 Jan – 29 Jan**	cavity, laser pumping, Threshold condition for laser emission, line broadening mechanism homogeneous and inhomogeneous line broadening (natural, collision and Doppler broadening).
26 Jan, 2022 **30 Jan ,2022**	**Republic Day** **Sunday**
Feb, 2022 **1st week** **31 Feb-4 Feb**	**Revision** **Unit IV: Laser Physics – II** He-Ne laser and RUBY laser (Principle, Construction and working),
5 Feb, 2022 **6 Feb ,2022**	**Vasant Panchmi** **Sunday**
2nd week **7 Feb- 12 Feb**	Optical properties of semiconductor, Semiconductor laser (Principle, Construction and working),Applications of lasers in the field of medicine and industry.
13 Feb ,2022	**Sunday**
3rd week **14 Feb- 17 Feb**	**Sessional & Revision**

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

October, 2021 2nd Week **11 Oct-16 Oct**	**Unit I: Nuclear Structure and Properties of Nuclei** Nuclear composition (p-e and p-n hypotheses), Nuclear properties; Nuclear size, spin, parity
15 Oct, 2021 **17 Oct, 2021**	**(Dussehra)** **Sunday**
3rd Week **18 Oct-23 Oct**	Statistics, magnetic dipole moment, quadruple moment (shape concept).
20 Oct, 2021 **24 Oct, 2021**	**Maharishi Valmiki Jayanti** **Sunday**
May, 2021 4th Week **25 Oct-30 Oct**	Determination of mass by Bain-Bridge, Bain-Bridge and Jordan mass spectrograph. Determination of charge by Mosley Law.
31 Oct, 2021	**Sunday**
November, 2021 1st Week **1 Nov-7 Nov**	**(Haryana Day)** **Diwali Holidays**
2nd Week **8 Nov-13 Nov**	Determination of size of nuclei by Rutherford Back Scattering. mass and binding energy, systematic of nuclear binding energy, nuclear stability
14 Nov, 2021	**Sunday**
3rdWeek **15 Nov-20 Nov**	**Revision and Class Test**
19 Nov,2021 **21 Nov, 2021**	**Sh. Guru Nanak jayanti** **Sunday**
4thWeek **22 Nov-27**	**Unit II: Nuclear Radiation decay Processes** 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.

KVA DAV College for Women, Karnal

Lesson plan for the odd semester
(October, 2021 to February, 2022)

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

28 Nov, 2021	**Sunday**
Dec, 2021 1ˢᵗ Week **29 Nov-04 Dec**	**Radiation interaction** Interaction of heavy charged particles (Alpha particles); Energy loss of heavy charged particle (idea of Bethe formula, no derivation),
05 Dec, 2021	**Sunday**
2ⁿᵈ Week **06 Dec -11 Dec**	Range and straggling of alpha particles,Geiger-Nuttal law.
12 Dec,2021	**Sunday**
3ʳᵈ week **13 Dec -18 Dec**	Interaction of light charged particle (Beta-particle), Energy loss of Beta-particles (ionization), Range of electrons, absorption of beta-particles. Interaction of Gamma Ray;
19 Dec,2021	**Sunday**
4ᵗʰ Week **20 Dec-24 Dec**	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.
25 Dec,2021 **26 Dec,2021**	**Christmas** **Sunday**
5ᵗʰ Week **27 Dec -01 Jan**	**Revision and Class Test** **Unit III: Nuclear Accelerators** Linear accelerator, Tandem accelerator,
2 Jan ,2022	**Sunday**
Jan ,2022 1ˢᵗ week **3 Jan – 8 Jan**	Cyclotron and Betatron accelerators.
9 Jan ,2022	**Sunday(Sh. Guru Gobind Singh's Birthday)**
2ⁿᵈ Week **10 Jan – 15 Jan**	**Nuclear Radiation Detectors.** Gas filled counters; Ionization chamber,
13 Jan,2022 **16 Jan ,2022**	**Lohri** **Sunday**

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

3rd week **17 Jan – 22 Jan**	proportional counter, G.M. Counter (detailed study), Scintillation counter and semiconductor detector
23 Jan ,2022	**Sunday**
4th Week **24 Jan – 29 Jan**	**Revision and Class Test**
26 Jan, 2022 **30 Jan ,2022**	**Republic Day** **Sunday**
Feb, 2022 1st week **31 Feb-4 Feb**	**Unit IV:** **Nuclear reactions.** Nuclear reactions, Elastic scattering, Inelastic scattering, Nuclear disintegration, Photonuclear reaction, Radiative capture, Direct reaction, Heavy ion reactions and Spallation Reactions.
5 Feb, 2022 **6 Feb ,2022**	**Vasant Panchmi** **Sunday**
2nd week **7 Feb- 12 Feb**	Conservation laws, Q-value and reaction threshold**.** **Nuclear Reactors.** Nuclear Reactors, General aspects of Reactor Design.
13 Feb ,2022	**Sunday**
3rd week **14 Feb- 17 Feb**	Nuclear fission and fusion reactors,(Principle, construction, working and use). **Revision**