

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester  
(February to May, 2023)

Name of the Teacher – Ms. Vandana  
Class- B.Sc.-Second Second Year (4<sup>th</sup> Semester)  
Subject- Statistical Physics  
Paper- PH- 401

February,2023 1 <sup>st</sup> Week 1Feb-4 Feb	<b>Unit –I: Statistical Physics I</b> Microscopic and Macroscopic systems, events-mutually exclusive, dependent and independent. Probability, statistical probability, A- priori Probability and relation between them, probability theorems, some probability considerations
5Feb, 2023	<b>Guru RavidasJayanti, Sunday</b>
2 <sup>nd</sup> Week 6Feb -11Feb	Combinations possessing maximum probability, combination possessing minimum probability, Tossing of 2,3 and any number of Coins, Permutations and combinations, distributions of N (for N= 2,3,4) distinguishable and indistinguishable particles in two boxes of equal size
12Feb, 2023	<b>Sunday</b>
3 <sup>rd</sup> Week 13Feb -17 Feb	Micro and Macro states, Thermodynamical probability, Constraints and Accessible states, Statistical fluctuations, general distribution of distinguishable particles in compartments of different sizes
18 Feb, 2023 19 Feb,2023	<b>MahaShivaratri Sunday</b>
4 <sup>th</sup> Week 20Feb -25 Feb	Condition of equilibrium between two systems in thermal contact-- $\beta$ parameter, Entropy and Probability (Boltzmann's relation). <b>Class Test</b>
26 Feb, 2023	<b>Sunday</b>
5 <sup>th</sup> Week 27 Feb -28 Feb	<b>Unit –II: Statistical Physics II</b> Postulates of statistical physics, Phase space, Division of Phase space into cells, three kinds of statistics, basic approach in three statistics.

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**Name of the Teacher – Ms. Vandana**  
**Class- B.Sc.-Second Second Year (4<sup>th</sup> Semester)**  
**Subject- Statistical Physics**  
**Paper- PH- 401**

<b>March, 2023</b> <b>1<sup>st</sup>Week</b> <b>1March -4 March</b>	M. B. statistics applied to an ideal gas in equilibrium, energy distribution law (including evaluation of $\sigma$ and $\beta$ ) , speed distribution law & velocity distribution law
<b>2<sup>nd</sup> Week</b> <b>5 March -12</b> <b>March, 2023</b>	<b>Holi Break</b>
<b>3<sup>rd</sup>Week</b> <b>13 March-18</b> <b>March</b>	Expression for average speed, r.m.s. speed, average velocity, r. m. s. velocity, most probable energy & mean energy for Maxwell distribution.  <b>Revision</b>
<b>19 March,2023</b>	<b>Sunday</b>
<b>4<sup>th</sup>Week</b> <b>20March-25</b> <b>March</b>	<b>Unit-III: Quantum Statistics Need for Quantum Statistics:</b> Bose-Einstein energy distribution law, Application of B.E. statistics to Planck's radiation law,
<b>23 March, 2023</b>  <b>26 March, 2023</b>	<b>ShaheediDiwas/Martyrdom Day of Bhagat Singh, Rajguru&amp;Sukhdev</b> <b>Sunday</b>
<b>30 March, 2023</b>	<b>Ram Navmi</b>
<b>5<sup>th</sup> Week</b> <b>27 March- 31</b> <b>March</b>	B.E. gas degeneracy and B.E. Condensation, Fermi Dirac energy distribution law, F.D. gas and Degeneracy

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**Name of the Teacher – Ms. Vandana**  
**Class- B.Sc.-Second Second Year (4<sup>th</sup> Semester)**  
**Subject- Statistical Physics**  
**Paper- PH- 401**

<b>April, 2023</b> <b>1<sup>st</sup> Week</b> <b>1 April, 2023</b>	Fermi energy and Fermi temperature, Fermi Dirac energy distribution law, Fermi Dirac gas and degeneracy, Fermi energy and Fermi temperature, Fermi Dirac energy distribution law for electron gas in metals, Zero point energy
<b>2 April, 2023</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>3 April -8 April</b>	Zero point pressure and average speed (at 0 K) of electron gas, Specific heat anomaly of metals and its solution. M.B. distribution as a limiting case of B.E. and F.D. distributions, Comparison of three statistics.
<b>4 April, 2023</b> <b>9 April, 2023</b>	<b>Mahavir Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>10April -</b> <b>15April</b>	<b>Unit-IV:</b> Theory of Specific Heat of Solids Dulong and Petit law. Derivation of Dulong and Petit law from classical physics. Specific heat at low temperature
<b>14 April, 2023</b> <b>16 April, 2023</b>	<b>Vaisakhi/Dr. B.R. Ambedkar Jayanti</b> <b>Sunday</b>
<b>4<sup>th</sup>Week</b> <b>17 April -21</b> <b>April</b>	<b>Sessional Exams</b>
<b>22 April, 2023</b> <b>23 April, 2023</b>	<b>Id-Ul-Fitr/Parshuram Jayanti</b> <b>Sunday</b>
<b>5<sup>th</sup>Week</b> <b>24 April -29</b> <b>April</b>	Einstein theory of specific heat  <b>Class Test</b>
<b>30 April, 2023</b>	<b>Sunday</b>

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**Name of the Teacher – Ms. Vandana**  
**Class- B.Sc.-Second Second Year (4<sup>th</sup> Semester)**  
**Subject- Statistical Physics**  
**Paper- PH- 401**

<b>May, 2023</b> <b>1<sup>st</sup> Week</b> <b>1 May -6 May</b>	Criticism of Einstein theory, Debye model of specific heat of solids, success and shortcomings of Debye theory, comparison of Einstein and Debye theories.
<b>7 May, 2023</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>8 May -13 May</b>	<b>Revision and Class Test</b>
<b>14 May, 2023</b>	<b>Sunday</b>
<b>17 May,2023</b> <b>Onwards</b>	<b>University Examinations</b>

**KVA DAV College for Women, Karnal**

**Lesson Plan for the Even Semester  
(February to May, 2023)**

**Name of the Teacher – Ms. Vandana**

**Class- B.Sc. - Third Year (6<sup>th</sup> Semester)**

**Subject- Atomic and Molecular Spectroscopy**

**Paper- PH- 602**

<b>February,2023</b> <b>1<sup>st</sup> Week</b> <b>1Feb-4 Feb</b>	<b>Unit – I: Historical background of atomic spectroscopy</b> Introduction of early observations, emission and absorption spectra, atomic spectra, wave number
<b>5Feb, 2023</b>	<b>Guru Ravidas Jayanti, Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>6Feb -11Feb</b>	spectrum of Hydrogen atom in Balmer series, Bohr atomic model(Bohr's postulates) spectra of Hydrogen atom , explanation of spectral series in Hydrogen atom
<b>12Feb, 2023</b>	<b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>13Feb -17 Feb</b>	un-quantized states and continuous spectra, spectral series in absorption spectra, effect of nuclear motion on line spectra (correction of finite nuclear mass), variation in Rydberg constant due to finite mass
<b>18 Feb, 2023</b> <b>19 Feb,2023</b>	<b>MahaShivaratri</b> <b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>20Feb -25 Feb</b>	shortcomings of Bohr's theory, Wilson sommerfeld quantization rule, de-Broglie interpretation of Bohr quantization law, Bohr's corresponding principle, Sommerfeld's extension of Bohr's model
<b>26 Feb, 2023</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>27 Feb -28 Feb</b>	Sommerfeld relativistic correction, Shortcomings of Bohr-Sommerfeld theory Vector atom model; space quantization, electron spin, coupling of orbital and spin angular momentum

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**Class- B.Sc. - Third Year (6<sup>th</sup> Semester)**

**Subject- Atomic and Molecular Spectroscopy**

**Paper- PH- 602**

<b>March, 2023</b> <b>1<sup>st</sup>Week</b> <b>1March -4 March</b>	Spectroscopic terms and their notation, quantum numbers associated with vector atom model, transition probability and selection rules. <b>Class Test</b>
<b>2<sup>nd</sup> Week</b> <b>5 March -12</b> <b>March, 2023</b>	<b>Holi Break</b>
<b>3<sup>rd</sup>Week</b> <b>13 March-18</b> <b>March</b>	<b>Unit –II: Vector Atom Model</b> (single valance electron) Orbital magnetic dipole moment (Bohr megnaton), behavior of magnetic dipole in external magnetic field; Larmors' precession and theorem.
<b>19 March,2023</b>	<b>Sunday</b>
<b>4<sup>th</sup>Week</b> <b>20March-25</b> <b>March</b>	Penetrating and Non-penetrating orbits, Penetrating orbits on the classical model; Quantum defect  <b>Class Test</b>
<b>23 March, 2023</b>	<b>ShaheediDiwas/Martyrdom Day of Bhagat</b>
<b>26 March, 2023</b>	<b>Singh, Rajguru&amp;Sukhdev</b>
<b>30 March, 2023</b>	<b>Sunday</b>
<b>30 March, 2023</b>	<b>Ram Navmi</b>
<b>5<sup>th</sup> Week</b> <b>27 March- 31</b> <b>March</b>	Spin orbit interaction energy of the single valance electron, spin orbit interaction for penetrating and non-penetrating orbits. quantum mechanical relativity correction, Hydrogen fine spectra, Main features of Alkali Spectra and their theoretical interpretation

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Class- B.Sc. - Third Year (6<sup>th</sup> Semester)

Subject- Atomic and Molecular Spectroscopy

Paper- PH- 602

April, 2023 1 <sup>st</sup> Week 1 April, 2023	Term series and limits, Rydeburg-Ritze combination principle. Absorption spectra of Alkali atoms. observed doublet fine structure in the spectra of alkali metals and its Interpretation, Intensity rules for doublets, comparison of Alkali spectra and Hydrogen spectrum
2 April, 2023	<b>Sunday</b>
2 <sup>nd</sup> Week 3 April - 8 April	<b>UNIT-III: Vector Atom model (two valance electrons) Essential features of spectra of Alkaline-earth elements, Vector model for two valance electron atom: application of spectra. Coupling Schemes;LS or Russell – Saunders Coupling Scheme</b>
4 April, 2023 9 April, 2023	<b>MahavirJayanti</b> <b>Sunday</b>
3 <sup>rd</sup> Week 10April - 15April	JJ coupling scheme, Interaction energy in L-S coupling (sp, pd configuration), Lande interval rule, Pauli principal
14 April, 2023 16 April, 2023	<b>Vaisakhi/Dr. B.R. AmbedkarJayanti</b> <b>Sunday</b>
4 <sup>th</sup> Week 17 April -21 April	<b>Sessional Exams</b>
22 April, 2023 23 April, 2023	<b>Id-UI-Fitr/ParshuramJayanti</b> <b>Sunday</b>
5 <sup>th</sup> Week 24 April -29 April	Periodic classification of the elements. Interaction energy in JJ Coupling (sp, pd configuration), equivalent and non-equivalent electrons, Two valance electron system-spectral terms of non-equivalent and equivalent electrons. Comparison of spectral terms in L-S And J-J coupling. Hyperfine structure of spectral lines and its origin; isotope effect, nuclear spin.
30 April, 2023	<b>Sunday</b>

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**Subject- Atomic and Molecular Spectroscopy**

**Paper- PH- 602**

<b>May, 2023</b> <b>1<sup>st</sup> Week</b> <b>1 May -6 May</b>	<b>Unit –IV:</b> Atom in External Field Zeeman Effect (normal and Anomalous), Experimental set-up for studying Zeeman effect, Explanation of normal Zeeman effect(classical and quantum mechanical) Explanation of anomalous Zeeman effect(Lande g-factor), Zeeman pattern of D1 and D2 lines of Na atom, Paschen-Back effect of a single valence electron system. Weak field Stark effect of Hydrogen atom.
<b>7 May, 2023</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>8 May -13 May</b>	<b>Molecular Physics:</b> General Considerations, Electronic States of Diatomic Molecules, Rotational Spectra (Far IR and Microwave Region), Vibrational Spectra (IR Region), Rotator Model of Diatomic Molecule, Raman Effect, Electronic Spectra.  <b>Revision</b>
<b>14 May, 2023</b>	<b>Sunday</b>
<b>17 May,2023</b> <b>Onwards</b>	<b>University Examinations</b>



KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester  
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Name of the Teacher – Ms. Shruti Jain

Class- B.Sc.-First Year (2<sup>nd</sup> Semester)

Subject- Properties of Matter and Kinetic Theory of Gases

Paper- PH-201

February,2023 1 <sup>st</sup> Week 1Feb-4 Feb	<b>Unit I:</b> Moment of inertia Rotation of rigid body, Moment of inertial, Torque, angular momentum, Kinetic Energy of rotation.
5Feb, 2023	<b>Guru Ravidas Jayanti, Sunday</b>
2 <sup>nd</sup> Week 6Feb -11Feb	Theorem of perpendicular and parallel axes (with proof),Moment of inertia of solid sphere ,hollow sphere, spherical shell
12Feb, 2023	<b>Sunday</b>
3 <sup>rd</sup> Week 13Feb -17 Feb	Moment of Inertia of solid cylinder, hollow cylinder and solid bar of rectangular cross–section, Fly wheel
18 Feb, 2023 19 Feb,2023	<b>MahaShivaratri Sunday</b>
4 <sup>th</sup> Week 20Feb -25 Feb	Moment of inertia of an irregular body, Acceleration of a body rolling down on an inclined plane.
26 Feb, 2023	<b>Sunday</b>
5 <sup>th</sup> Week 27 Feb -28 Feb	<b>Unit 2:</b> Elasticity, Stress and Strain, Hook’s law, Elastic constant and their relations.

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**Subject- Properties of Matter and Kinetic Theory of Gases**

**Paper- PH-201**

<b>March, 2023</b> <b>1<sup>st</sup>Week</b> <b>1March -4 March</b>	Poisson's ratio, Torsion of cylinder, twisting couple, Determination of coefficient of modulus of rigidity for the material of wire by Maxwell's needle <b>Class Test</b>
<b>2<sup>nd</sup> Week</b> <b>5 March -12</b> <b>March, 2023</b>	<b>Holi Break</b>
<b>3<sup>rd</sup>Week</b> <b>13 March-18</b> <b>March</b>	Bending of beam (Bending moment and its magnitude), Cantilever and Centrally loaded beam,
<b>19 March,2023</b>	<b>Sunday</b>
<b>4<sup>th</sup>Week</b> <b>20March-25</b> <b>March</b>	Determination of Young's modulus for the material of the beam and Elastic constants for the material of the wire by Searle's method.
<b>23 March, 2023</b>	<b>ShaheediDiwas/Martyrdom Day of Bhagat Singh, Rajguru&amp;Sukhdev</b>
<b>26 March, 2023</b>	<b>Sunday</b>
<b>30 March, 2023</b>	<b>Ram Navmi</b>
<b>5<sup>th</sup> Week</b> <b>27 March- 31</b> <b>March</b>	<b>Unit 3:</b> Kinetic theory of gases-I Assumption of Kinetic theory of gases, pressure of an ideal gas (with derivation)

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Subject- Properties of Matter and Kinetic Theory of Gases

Paper- PH-201

April, 2023 1 <sup>st</sup> Week 1 April, 2023	Kinetic interpretation of Temperature, Ideal Gas equation, Degree of freedom Law of equipartition of energy
2 April, 2023	<b>Sunday</b>
2 <sup>nd</sup> Week 3 April -8 April	application for specific heat of gases, Real gases ,Vander wall's equation, Brownian motion( Qualitative)
4 April, 2023 9 April, 2023	<b>MahavirJayanti</b> <b>Sunday</b>
3 <sup>rd</sup> Week 10April - 15April	<b>Unit 4:</b> Kinetic theory of gases-II Maxwell's distribution of speed and velocities (derivation required)
14 April, 2023 16 April, 2023	<b>Vaisakhi/Dr. B.R. AmbedkarJayanti</b> <b>Sunday</b>
4 <sup>th</sup> Week 17 April -21 April	<b>Sessional Exams</b>
22 April, 2023 23 April, 2023	<b>Id-Ul-Fitr/ParshuramJayanti</b> <b>Sunday</b>
5 <sup>th</sup> Week 24 April -29 April	Experimental verification of Maxwell's law of speed distribution: most probable speed
30 April, 2023	<b>Sunday</b>

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**Subject- Properties of Matter and Kinetic Theory of Gases**

**Paper- PH-201**

<b>May, 2023 1<sup>st</sup> Week 1 May -6 May</b>	Average and r.m.s. speed, Mean free path, Transport of energy and momentum, Diffusion of gases.
<b>7 May, 2023</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week 8 May -13 May</b>	<b>Revision and Class Test</b>
<b>14 May, 2023</b>	<b>Sunday</b>
<b>17 May,2023 Onwards</b>	<b>University Examinations</b>

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**Lesson Plan for the Even Semester  
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**Name of the Teacher – Ms. Shruti Jain**  
**Class- B.Sc.-Third Year (6th Semester)**  
**Subject- Solid State and Nano Physics**  
**Paper- PH-601**

<b>February,2023</b> <b>1<sup>st</sup> Week</b> <b>1Feb-4 Feb</b>	<b>Unit I: Crystal Structure I</b> Crystalline and glassy forms, liquid crystals, crystal structure, periodicity, lattice and basis, crystal translational vectors and axes.
<b>5Feb, 2023</b>	<b>Guru RavidasJayanti, Sunday</b>
<b>2<sup>nd</sup>Week</b> <b>6Feb -11Feb</b>	Unit cell and Primitive Cell, Winger Seitz primitive Cell, symmetry operations for a two dimensional crystal
<b>12Feb, 2023</b>	<b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>13Feb -17 Feb</b>	Bravais lattices in two and three dimensions. Crystal planes and Miller indices, Interplaner spacing,
<b>18 Feb, 2023</b> <b>19 Feb,2023</b>	<b>MahaShivaratri</b> <b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>20Feb -25 Feb</b>	Crystal structures of Zinc Sulphide, Sodium Chloride and Diamond.
<b>26 Feb, 2023</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>27 Feb -28 Feb</b>	<b>Unit II: Crystal Structure II</b> X-ray diffraction, Bragg's Law and experimental X-ray diffraction methods.

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**Class- B.Sc.-Third Year (6th Semester)**  
**Subject- Solid State and Nano Physics**  
**Paper- PH-601**

<b>March, 2023</b> <b>1<sup>st</sup>Week</b> <b>1March -4 March</b>	K-space and reciprocal lattice and its physical significance Reciprocal lattice vectors,
<b>2<sup>nd</sup> Week</b> <b>5 March -12</b> <b>March, 2023</b>	<b>Holi Break</b>
<b>3<sup>rd</sup>Week</b> <b>13 March-18</b> <b>March</b>	Reciprocal lattice to a simple cubic lattice, B.C.C and F.C.C. <b>Unit III: Super conductivity</b> Historical introduction, Survey of superconductivity,
<b>19 March,2023</b>	<b>Sunday</b>
<b>4<sup>th</sup>Week</b> <b>20March-25</b> <b>March</b>	Super conducting systems, High Tc Super conductors, Isotopic Effect, Critical Magnetic Field
<b>23 March, 2023</b>	<b>ShaheediDiwas/Martyrdom Day of Bhagat</b>
<b>26 March, 2023</b>	<b>Singh, Rajguru&amp;Sukhdev</b>
<b>30 March, 2023</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>27 March- 31</b> <b>March</b>	<b>Ram Navmi</b> Meissner Effect, London Theory and Pippards' equation, Classification of Superconductors (type I and Type II), BCS Theory of Superconductivity

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**Name of the Teacher – Ms. Shruti Jain**  
**Class- B.Sc.-Third Year (6th Semester)**  
**Subject- Solid State and Nano Physics**  
**Paper- PH-601**

<b>April, 2023</b> <b>1<sup>st</sup> Week</b> <b>1 April, 2023</b>	Flux quantization, Josephson Effect (AC and DC), Practical Applications of superconductivity and their limitations,
<b>2 April, 2023</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>3 April -8 April</b>	Power application of superconductors. <b>Class Test</b>
<b>4 April, 2023</b> <b>9 April, 2023</b>	<b>MahavirJayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>10April -</b> <b>15April</b>	<b>Unit IV: Introduction to Nano Physics</b> Definition, Length scale, Importance of Nano-scale and technology, History of Nantechnology
<b>14 April, 2023</b> <b>16 April, 2023</b>	<b>Vaisakhi/Dr. B.R. AmbedkarJayanti</b> <b>Sunday</b>
<b>4<sup>th</sup>Week</b> <b>17 April -21</b> <b>April</b>	<b>Sessional Exams</b>
<b>22 April, 2023</b> <b>23 April, 2023</b>	<b>Id-UI-Fitr/ParshuramJayanti</b> <b>Sunday</b>
<b>5<sup>th</sup>Week</b> <b>24 April -29</b> <b>April</b>	Benefits and challenges in molecular manufacturing. Molecular assembler concept,
<b>30 April, 2023</b>	<b>Sunday</b>

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**Subject- Solid State and Nano Physics**  
**Paper- PH-601**

<b>May, 2023</b> <b>1<sup>st</sup> Week</b> <b>1 May -6 May</b>	Understanding advanced capabilities. Vision and objective of Nano-technology, Nanotechnology in different field, Automobile, Electronics, Nano-biotechnology, Materials, Medicine.
<b>7 May, 2023</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>8 May -13 May</b>	<b>Revision And Class Test</b>
<b>14 May, 2023</b>	<b>Sunday</b>
<b>17 May,2023</b> <b>Onwards</b>	<b>University Examinations</b>



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**Lesson Plan for the Even Semester  
(February to May, 2023)**

**Name of the Teacher – Ms.Priya Kamboj**

**Class- B.Sc-First year (IInd SEM)**

**Subject- Semiconductor Devices**

**Paper- PH-202**

<b>February,2023</b> <b>1<sup>st</sup> Week</b> <b>1Feb-4 Feb</b>	<b>Unit I:</b> Semiconductors Energy bands in solids, Intrinsic and extrinsic semiconductors. Carrier mobility and electrical resistivity of semiconductors.
<b>5Feb, 2023</b>	<b>Guru RavidasJayanti, Sunday</b>
<b>2<sup>nd</sup>Week</b> <b>6Feb -11Feb</b>	P-n junction diode and their characteristics, Zener and Avalanche breakdown, Zener diode, Zener diode as a voltage regulator. Light emitting diodes (LED), Photoconduction in semiconductors, Photodiode.
<b>12Feb, 2023</b>	<b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>13Feb -17 Feb</b>	Solar Cell, p-n junction as a rectifier, half wave and full wave rectifiers (with derivation)
<b>18 Feb, 2023</b> <b>19 Feb,2023</b>	<b>MahaShivaratri</b> <b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>20Feb -25 Feb</b>	<b>Unit 2:</b> Transistors Junction transistors, Working of NPN and PNP transistors,
<b>26 Feb, 2023</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>27 Feb -28 Feb</b>	Three configurations of transistor (C-B, C-E, C-C modes),Common base, common emitter and common collector characteristics of transistor

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**Lesson Plan for the Even Semester  
(February to May, 2023)**

**Name of the Teacher –Ms.Priya Kamboj**

**Class-B.Sc-First Year(IIst sem)**

**Subject- Semiconductor devices**

**Paper- PH-202**

<b>March, 2023</b> <b>1<sup>st</sup>Week</b> <b>1March -4 March</b>	Constants of a transistor and their relation, Advantages and disadvantages of C-E configuration
<b>2<sup>nd</sup> Week</b> <b>5 March -12</b> <b>March, 2023</b>	<b>Holi Break</b>
<b>3<sup>rd</sup>Week</b> <b>13 March-18</b> <b>March</b>	D.C. load line .Transistor biasing; various methods of transistor biasing and stabilization
<b>19 March,2023</b>	<b>Sunday</b>
<b>4<sup>th</sup>Week</b> <b>20March-25</b> <b>March</b>	<b>Unit 3: Transistor Amplifiers Amplifiers, Classification of amplifiers</b>
<b>23 March, 2023</b>	<b>ShaheediDiwas/Martyrdom Day of Bhagat</b>
<b>26 March, 2023</b>	<b>Singh, Rajguru&amp;Sukhdev</b>
<b>30 March, 2023</b>	<b>Sunday</b>
<b>30 March, 2023</b>	<b>Ram Navmi</b>
<b>5<sup>th</sup> Week</b> <b>27 March- 31</b> <b>March</b>	common base and common emitter amplifiers, coupling of amplifiers

## KVA DAV College for Women, Karnal

### Lesson Plan for the Even Semester (February to May 2023)

Name of the Teacher – Ms.Priya Kamboj

Class- B.sc-first Year (IInd SEM)

Subject- Semiconductors devices.

Paper- PH-202

April, 2023 1 <sup>st</sup> Week 1 April, 2023	various methods of coupling, Resistance- Capacitance (RC) coupled amplifier (two stage, concept of band width, no derivation)
2 April, 2023	<b>Sunday</b>
2 <sup>nd</sup> Week 3 April -8 April	Feedback in amplifiers, advantages of negative feedback, emitter follower, distortion in amplifiers.  Class Test
4 April, 2023 9 April, 2023	<b>MahavirJayanti</b> <b>Sunday</b>
3 <sup>rd</sup> Week 10April - 15April	<b>Unit 4:</b> Oscillators Oscillators, Principle of oscillation, classification of oscillators, Condition for self sustained oscillation:
14 April, 2023 16 April, 2023	<b>Vaisakhi/Dr. B.R. AmbedkarJayanti</b> <b>Sunday</b>
4 <sup>th</sup> Week 17 April -21 April	<b>Sessional Exams</b>
22 April, 2023 23 April, 2023	<b>Id-UI-Fitr/ParshuramJayanti</b> <b>Sunday</b>
5 <sup>th</sup> Week 24 April -29 April	Barkhausen criterion for oscillation, Tuned collector common emitter oscillator
30 April, 2023	<b>Sunday</b>

**KVA DAV College for Women, Karnal**

**Lesson Plan for the Even Semester  
(February to May, 2023)**

**Name of the Teacher – Ms.Priya Kamboj**

**Class- B.sc-First year (IInd SEM)**

**Subject- Semiconductor devices**

**Paper- PH-202**

<b>May, 2023 1<sup>st</sup> Week 1 May -6 May</b>	Hartley oscillator, C.R.O. (Principle and Working).
<b>7 May, 2023</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week 8 May -13 May</b>	<b>Revision and class test</b>
<b>14 May, 2023</b>	<b>Sunday</b>
<b>17 May,2023 Onwards</b>	<b>University Examinations</b>

**KVA DAV College for Women, Karnal**

**Lesson Plan for the Even Semester  
(February to May, 2023)**

**Name of the Teacher – Ms.Priya Kamboj**

**Class- B.Sc-Second year(IVth sem)**

**Subject- Wave and optics-II**

**Paper- PH-402**

<b>February,2023</b> <b>1<sup>st</sup> Week</b> <b>1Feb-4 Feb</b>	<b>Unit-1: Polarization: Polarization(Introduction)</b>
<b>5Feb, 2023</b> <b>2<sup>nd</sup>Week</b> <b>6Feb -11Feb</b>	<b>Guru RavidasJayanti, Sunday</b> Polarization by reflection, refraction and scattering, Malus Law
<b>12Feb, 2023</b> <b>3<sup>rd</sup> Week</b> <b>13Feb -17 Feb</b>	<b>Sunday</b> Phenomenon of double refraction, Huygens's wave theory of double refraction (Normal and oblique incidence), Analysis of polarized Light
<b>18 Feb, 2023</b> <b>19 Feb,2023</b>	<b>MahaShivaratri</b> <b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>20Feb -25 Feb</b>	Nicol prism, Quarter wave plate and half wave plate, production and detection of (i) Plane polarized light (ii) Circularly polarized light and (iii) Elliptically polarized light
<b>26 Feb, 2023</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>27 Feb -28 Feb</b>	Optical activity, Fresnel's theory of optical rotation, Specific rotation, Polarimeters (half shade and Biquartz).

**KVA DAV College for Women, Karnal**

**Lesson Plan for the Even Semester  
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**Name of the Teacher –Ms.Priya Kamboj**

**Class-B.Sc-Second Year (IVth SEM)**

**Subject- Wave and Optics II**

**Paper- PH-402**

<b>March, 2023</b> <b>1<sup>st</sup>Week</b> <b>1March -4 March</b>	<b>Unit-II:</b> Fourier analysis Fourier theorem and Fourier series, evaluation of Fourier coefficient, importance and limitations of Fourier theorem, even and odd functions
<b>2<sup>nd</sup> Week</b> <b>5 March -12</b> <b>March, 2023</b>	<b>Holi Break</b>
<b>3<sup>rd</sup>Week</b> <b>13 March-18</b> <b>March</b>	Fourier series of functions $f(x)$ between (i) 0 to $2\pi$ , (ii) $-\pi$ to $\pi$ , (iii) 0 to $\pi$ , (iv) $-L$ to $L$ , complex form of Fourier series, Application of Fourier theorem for analysis of complex waves
<b>19 March,2023</b>	<b>Sunday</b>
<b>4<sup>th</sup>Week</b> <b>20March-25</b> <b>March</b>	Solution of triangular and rectangular waves, half and full wave rectifier outputs, Parseval identity for Fourier Series, Fourier integrals.
<b>23 March, 2023</b>	<b>ShaheediDiwas/Martyrdom Day of Bhagat</b>
<b>26 March, 2023</b>	<b>Singh, Rajguru&amp;Sukhdev</b>
<b>30 March, 2023</b>	<b>Sunday</b>
<b>30 March, 2023</b>	<b>Ram Navmi</b>
<b>5<sup>th</sup> Week</b> <b>27 March- 31</b> <b>March</b>	<b>Unit III:</b> Fourier transforms Fourier transforms and its properties

**KVA DAV College for Women, Karnal**

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**Name of the Teacher – Ms.Priya Kamboj**

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**Subject-Wave and Optics II.**

**Paper- PH-402**

<b>April, 2023</b> <b>1<sup>st</sup> Week</b> <b>1 April, 2023</b>	Application of Fourier transform (i) for evaluation of integrals, (ii) for solution of ordinary differential equations, (iii) to the following functions: 1. $f(x) = e^{-x^2/2} \cos  x a$
<b>2 April, 2023</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>3 April -8 April</b>	Geometrical Optics I Matrix methods in paraxial optics, effects of translation and refraction.
<b>4 April, 2023</b> <b>9 April, 2023</b>	<b>MahavirJayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>10April -</b> <b>15April</b>	Derivation of thin lens and thick lens formulae, unit plane, nodal planes, system of thin lenses.  <b>Class Test</b>
<b>14 April, 2023</b> <b>16 April, 2023</b>	<b>Vaisakhi/Dr. B.R. AmbedkarJayanti</b> <b>Sunday</b>
<b>4<sup>th</sup>Week</b> <b>17 April -21</b> <b>April</b>	<b>Sessional Exams</b>
<b>22 April, 2023</b> <b>23 April, 2023</b>	<b>Id-Ul-Fitr/ParshuramJayanti</b> <b>Sunday</b>
<b>5<sup>th</sup>Week</b> <b>24 April -29</b> <b>April</b>	<b>Unit-IV:</b> Geometrical Optics II Chromatic, spherical, coma, astigmatism and distortion aberrations and their remedies.
<b>30 April, 2023</b>	<b>Sunday</b>

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**Subject- Wave and Optics II**

**Paper- PH-402**

<b>May, 2023</b> <b>1<sup>st</sup> Week</b> <b>1 May -6 May</b>	Fiber Optics Optical fiber, Critical angle of propagation, Mode of Propagation, Acceptance angle, Fractional refractive index change
<b>7 May, 2023</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>8 May -13 May</b>	Numerical aperture, Types of optics fiber, Normalized frequency, Pulse dispersion, Attenuation, Applications  Fiber optic Communication, Advantages.  <b>Revision and class test</b>
<b>14 May, 2023</b>	<b>Sunday</b>
<b>17 May,2023</b> <b>Onwards</b>	<b>University Examinations</b>