INDIRA GANDHI (P.G.) MAHILA MAHAVIDYALAYA, KAITHAL

Affiliated to Kurukshetra University, Kurukshetra

Department Of Science

Lesson Plan (Session 2025-2026)

Class: B.Sc Physical Science | Semester: I
Name of the Course: Mechanics | Course Code: B23-PHY-101
Dates: 22 July, 2025 – 24 Nov., 2025

SYLLABUS

Maximum Marks: 100 | Time: 3 hours
End Term Exam Marks: 50(T) +20(P) =70 Marks | Assessment: 20(T) +10(P) =30 Marks

Note: Examiner will be required to set nine questions in all. First question will be compulsory, consisting of short type question covering the entire syllabus in addition to that eight more questions will be set, two question from each unit. Students will be required to attempt in all. In addition to the compulsory question, student will have to attempt four more questions selecting one question from each unit.

Unit	Topics	Contact Hours
Unit: I	**Fundamentals of Dynamics**: Rigid body, Moment of Inertia, Radius of Gyration, Theorems of perpendicular and parallel axis (with proof), Moment of Inertia of ring, Disc, Angular Disc, Solid cylinder, Solid sphere, Hollow sphere, Rectangular plate, Square plate, Solid cone, Triangular plate, Torque, Rotational Kinetic Energy, Angular momentum, Law of conservation of angular momentum, Rolling motion, condition for pure rolling, acceleration of body rolling down an inclined plane, Fly wheel, Moment of Inertia of an irregular body.	11
Unit: II	**Elasticity**: Deforming force, Elastic limit, stress, strain and their types, Hooke's law, Modulus of rigidity, Relation between shear angle and angle of twist, elastic energy stored/volume in an elastic body, Elongation produced in heavy rod due to its own weight and elastic potential energy stored in it, Tension in rotating rod, Poisson's ratio and its limiting value, Elastic Constants and their relations. Torque required for twisting cylinder, Hollow shaft is stiffer than solid one. Bending of beam, bending moment and its magnitude, Flexural rigidity, Geometrical moment of inertia for beam of rectangular cross-section and circular cross-section. Bending of cantilever (loaded by a weight W at its free end), weight of cantilever uniformly distributed over its entire length. Dispersion of a centrally loaded beam supported at its ends, determination of elastic constants for material of wire by Searle's method.	12
Unit: III	**Special Theory of Relativity**: Michelson's Morley experiment and its outcomes, Postulates of special theory of relativity, Lorentz Transformations, Simultaneity and order of events, Lorentz contraction, Time dilation, Relativistic transformation of velocity, relativistic addition of velocities, variation of mass-energy equivalence, relativistic Doppler effect, relativistic kinematics, transformation of energy and momentum, transformation of force, Problems of relativistic dynamics.	11
Unit: IV	**Gravitation and central force motion**: Law of gravitation, Potential and field due to spherical shell and solid sphere. Motion of a particle under central force field, Two body problem and its reduction to one body problem and its solution, compound pendulum or physical pendulum in form of elliptical lamina and expression of time period, determination of g by means of bar pendulum, Normal coordinates and normal modes, Normal modes of vibration for given spring mass system, possible angular frequencies of oscillation of two identical simple pendulums of length (l) and small bob of mass (m0 joined together with spring of spring constant (k).	11

V	**Practicum** 1. Measurement of length (or diameter) using Vernier Caliper, screw gauge and travelling microscope. 2. To study the random error in observations. 3. To determine the area of window using a sextant. 4. Moment of Inertia of a Fly Wheel 5. Moment of Inertia of irregular body using a Torsion Pendulum. 6. Young's Modulus by Bending of Beam. 7. Modulus of rigidity of material of wire by Maxwell's Needle. 8. Elastic constants by Searle's method. 9. To determine the value of 'g' by using Bar pendulum. 10. To find the Poisson ratio of rubber by Rubber tube method. 11. To compare Moment of Inertia of a solid Sphere, Hollow Sphere and solid Disc of same mass with the help of Torsion Pendulum. 12. To determine the bending moment of a cantilever beam with uniformly distributed load, uniformly varying load and point load	30

Text Books :

1. Mechanics, D.S. Mathur, S. Chand and Company Limited
2. B.Sc. Practical Physics, C.L. Arora, S. Chand Publisher,
3. Mechanics "Berkeley Physics Course Vol. I", Charles Kittel, Tata McGraw-Hill

Course Outcomes

1. Understand the dynamics of system of particles, conservation of energy and momentum application of both translational and rotational dynamics motions simultaneously in analyzing rolling with slipping.

2. Differentiate between elastic and plastic body. Elastic constants, determination and their physical significance. Torque and its significance.

3. Familiar about the special theory of relativity and its applications. Michelson's Morley experiments and its finding.

4. Analyze the two body Central Force problem and its application.

Lesson Plan

SR. No	Date	Course Content	
		Theory (2)	**Practical (2)**
1	22 July -25July 2025	Fundamentals of Dynamics: Rigid body, Moment of Inertia, Radius of Gyration, Theorems of perpendicular and parallel axis (with proof), Moment of Inertia of ring, Disc, Angular Disc,	-----
2	28 July - 2 August	Solid cylinder, Solid sphere, Hollow sphere, Rectangular plate, Square plate, Solid cone, Triangular plate, Torque, Rotational Kinetic Energy	-----
3	4 August -8 August	Angular momentum, Law of conservation of angular momentum, Rolling motion, condition for pure rolling, acceleration of body rolling down an inclined plane, Fly wheel, Moment of Inertia of an irregular body,	Measurement of length (or diameter) using Vernier Caliper, screw gauge and travelling microscope
4	11 August - 14 August	Elasticity**:** Deforming force, Elastic limit, stress, strain and their types, Hooke's law, Modulus of rigidity, Relation between shear angle and angle of twist,	Practice and viva
5	18 August - 23August	Elastic energy stored/volume in an elastic body, Elongation produced in heavy rod due to its own weight and elastic potential energy stored in it, Tension in rotating rod, Poisson's ratio and its limiting value,	Moment of Inertia of a Fly Wheel
6	25 August -30 August	Elastic Constants and their relations. Torque required for twisting cylinder, Hollow shaft is stiffer than solid one. Bending of beam, bending moment and its magnitude	Practice and viva
7	1 Sept. - 6 Sept.	Flexural rigidity, Geometrical moment of inertia for beam of rectangular cross-section and circular cross-section. Bending of cantilever (loaded by a weight W at its free end)	Moment of Inertia of irregular body using a Torsion Pendulum
8	8 Sept. - 13 Sept.	Weight of cantilever uniformly distributed over its entire length. Dispersion of a centrally loaded beam supported at its ends, determination of elastic constants for material of wire by Searle's method,	Practice and viva
9	15 Sept. - 20 Sept.	Special Theory of Relativity: Michelson's Morley experiment and its outcomes, Postulates of special theory of relativity, Lorentz Transformations	Young's Modulus by Bending of Beam
10	22 Sept. - 27 Sept.	Simultaneity and order of events, Lorentz contraction, Time dilation, Relativistic transformation of velocity, relativistic addition of velocities, variation of mass-energy equivalence.	Practice and viva
11	29 Sept.- 4 Oct.	Relativistic Doppler effect, relativistic kinematics, transformation of energy and momentum, transformation of force, Problems of relativistic dynamics.	Modulus of rigidity of material of wire by Maxwell's Needle.
12	6 Oct.- 11 Oct.	Gravitation and central force motion: Law of gravitation, Potential and field due to spherical shell and solid sphere	Practice and viva
13	13 Oct.- 18 Oct.	Motion of a particle under central force field, Two body problem and its reduction to one body problem and its solution	Practice and viva
14	27 Oct. - 1 Nov.	Compound pendulum or physical pendulum in form of elliptical lamina and expression of time period, determination of g by means of bar pendulum	Practice and viva
15	3 Nov. - 8Nov	Normal coordinates and normal modes, Normal modes of vibration for given spring mass system,	Elastic constants by Searle's method
16	10 Nov-15 Nov	Possible angular frequencies of oscillation of two identical simple pendulums of length (l) and small bob of mass (m0 joined together with spring of spring constant (k).	Practice and viva
17	17 Nov -22 Nov	Revision of unit 1^{st} and 2^{nd}.	Practice
18	24 Nov.	Revision of 3^{rd} and 4^{th}	Practice

Signature of Teacher **Head of Department**

INDIRA GANDHI (P.G.) MAHILA MAHAVIDYALAYA, KAITHAL

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Department Of Science

Lesson Plan (Session 2025-2026)

Class: B.Sc Physical Science
Semester: III
Name of the Course: Thermodynamics & Statistical Physics
Course Code: B23-PHY-301
Dates: 22 July, 2025 – 24 Nov., 2025

SYLLABUS

Maximum Marks: 100
Time: 3 hours
End Term Exam Marks: 50(T)+20(P)=70 Marks
Assessment: 20(T)+10(P)=30 Marks

Note: Examiner will be required to set nine questions in all. First question will be compulsory, consisting of short type question covering the entire syllabus in addition to that eight more questions will be set, two question from each unit. Students will be required to attempt in all. In addition to the compulsory question, student will have to attempt four more questions selecting one question from each unit.

Unit	Topics	Contact Hours
Unit: I	**THERMODYNAMICS-I** Thermodynamic-systems, variables and equation of state, thermal equilibrium, Zeroth law of thermodynamics; Concept of heat, work and its sign (work done- by the system on the system) & its path dependence, First law of thermodynamics- its significance and limitations, internal energy as a state function, different types of process-isochoric process, isobaric process, adiabatic process, isothermal process, cyclic process, Reversible and irreversible process, First law and cyclic process; Second law of thermodynamics and its significance, Carnot theorem; Absolute scale of temperature, Absolute Zero and magnitude of each division on work scale and perfect gas scale, Joule's free expansion, Joule Thomson effect, Joule-Thomson (Porous plug) experiment, conclusions and explanation, analytical treatment of Joule Thomson effect, Entropy, calculations of entropy of reversible and irreversible process, T-S diagram, entropy of a perfect gas, Nernst heat law (third law of thermodynamics); Liquefaction of gases, (oxygen, air, hydrogen and helium) solidification of helium below 4K, Cooling by adiabatic demagnetization	11
Unit: II	**THERMODYNAMICS-II** Derivation of Clausius-Clapeyron and Clausius latent heat equations and their significance, specific heat of saturated vapours, phase diagram and triple point of a substance, development of Maxwell thermodynamical relations, 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, Application of Maxwell relations: relations between two specific heats of gas, 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, derivation of Stefan's law, adiabatic compression and expansion of gas & deduction of theory of Joule Thomson effect..	11
Unit: III	**Statistical Physics-I** 12 34(592) Distribution of N (for N= 2, 3, 4) distinguishable and indistinguishable particles in two boxes of equal size, microstates and macrostates, thermodynamical probability, constraints and accessible states, statistical fluctuations, general distribution of distinguishable particles in compartments of different sizes, β-parameter, entropy and probability; Concept of phase space, division of phase space into cells, postulates of statistical mechanics; Classical and quantum statistics, basic approach to these statistics, Maxwell-Boltzmann statistics applied to an ideal gas in equilibrium-energy distribution law, Maxwell's distribution of speed & velocity (derivation required), most probable speed, average and r.m.s. speed, mean energy for Maxwellian distribution..	12
Unit: IV	**Statistical Physics-II** Dulong and Petit Law, derivation of Dulong and Petit law from classical physics; Need of Quantum statistics- classical versus quantum statistics, Bose-Einstein energy distribution Law, Application of B. E. Statistics to Planck's radiation law, degeneracy and B. E. condensation; Fermi-Dirac energy distribution Law, F. D. gas and degeneracy, Fermi energy and Fermi temperature; F. D. energy distribution Law for electron gas in metals, zero point energy, average speed (at 0 K) of electron gas	11

V	**Practicum** 1. To determine the Planck's constant using photocell. 2. To determine e/m by Thomson method. 3. To determine the ionization potential of mercury. 4. To study quantization of energy using Frank Hertz experiment. 5. To determine the wavelength of laser source using diffraction of double slits. 6. To determine diameter of wire using laser source. 7. To study the variation of resistivity with temperature of given semiconductor crystal using four probe method. 8. To find the unknown capacitance of a capacitor using De-Sauty's Bridge.	30

Text Books :

1. Thermal Physics and Statistical Mechanics, S.K. Roy, New Age International Publishers, New Delhi
2. Thermodynamics and Statistical Physics, J.K. Sharma and K.K. Sarkar, Himalaya Publishing House, Bombay
3. Thermodynamics and Its Applications, Jefferson Tester, Michael Modell, 3rd Edition

Course Outcomes

1. Understand the need for Quantum Mechanics, Heisenberg's uncertainty principle, time dependent and time independent Schrodinger equation, expectation values of position and momentum, particle confined in one dimensional box.

2. Familiar about the crystalline state, basis, crystal lattices, Reciprocal lattice to sc, bcc and fcc lattices.

3. Analyze the Hydrogen atom problem based on Sommerfeld theory, Vector Atom Model, LS&JJ coupling.

4. Familiar about various Nuclear Models, Magic Numbers, Classification of fundamental particles and Strange particles.

5. Learn to present observations, results, analysis and different concepts related to experiments of Quantum Mechanics and Solid State physics.

Lesson Plan

SR. No	Date	Course Content	
		Theory (2)	**Practical (2)**
1	22 July -25July 2025	THERMODYNAMICS-I Thermodynamic-systems, variables and equation of state, thermal equilibrium, Zeroth law of thermodynamics; Concept of heat, work and its sign (work done- by the system on the system) & its path dependence	-----
2	28 July - 2 August	First law of thermodynamics- its significance and limitations, internal energy as a state function, different types of process- isochoric process, isobaric process, adiabatic process.	-----
3	4 August -8 August	Isothermal process, cyclic process, Reversible and irreversible process, First law and cyclic process; Second law of thermodynamics and its significance, Carnot theorem; Absolute scale of temperature, Absolute Zero and magnitude of each division on work scale and perfect gas scale.	To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.
4	11 August - 14 August	Joule's free expansion, Joule Thomson effect, Joule-Thomson (Porous plug) experiment, conclusions and explanation, analytical treatment of Joule Thomson effect, Entropy.	Practice and viva
5	18 August - 23August	Calculations of entropy of reversible and irreversible process, T-S diagram, entropy of a perfect gas, Nernst heat law (third law of thermodynamics); Liquefaction of gases, (oxygen, air, hydrogen and helium) solidification of helium below 4K, Cooling by adiabatic demagnetization.	Measurement of Planck's constant using black body radiation.
6	25 August -30 August	THERMODYNAMICS-II Derivation of Clausius-Clapeyron and Clausius latent heat equations and their significance, specific heat of saturated vapours, phase diagram and triple point of a substance, development of Maxwell thermodynamical relations.	Practice and viva
7	1 Sept. - 6 Sept.	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.	To determine Stefan's Constant.
8	8 Sept. - 13 Sept.	Application of Maxwell relations: relations between two specific heats of gas, 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	Practice and viva
9	15 Sept. - 20 Sept.	Derivation of Stefan's law, adiabatic compression and expansion of gas & deduction of theory of Joule Thomson effect.	To determine the coefficient of thermal conductivity of copper by Searle's Apparatus.
10	22 Sept. - 27 Sept.	Statistical Physics-I 12 34(592) Distribution of N (for N= 2, 3, 4) distinguishable and indistinguishable particles in two boxes of equal size, microstates and macrostates, thermodynamical probability, constraints and accessible states.	Practice and viva
11	29 Sept.- 4 Oct.	Statistical fluctuations, general distribution of distinguishable particles in compartments of different sizes, β-parameter, entropy and probability; Concept of phase space.	To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.
12	6 Oct.- 11 Oct.	Division of phase space into cells, postulates of statistical mechanics; Classical and quantum statistics, basic approach to these statistics, Maxwell-Boltzmann statistics applied to an ideal gas in equilibrium- energy distribution law	Practice and viva
13	13 Oct.- 18 Oct.	Maxwell's distribution of speed & velocity (derivation required), most probable speed, average and r.m.s. speed, mean energy for Maxwellian distribution.	Practice and viva
14	27 Oct. - 1 Nov.	Statistical Physics-II Dulong and Petit Law, derivation of Dulong and Petit law from classical physics; Need of Quantum statistics- classical versus quantum statistics, Bose-Einstein energy distribution Law.	Practice and viva
15	3 Nov. - 8Nov	Application of B. E. Statistics to Planck's radiation law, degeneracy and B. E. condensation; Fermi-Dirac energy distribution Law, F. D. gas and degeneracy, Fermi energy and Fermi temperature.	To prove the law of probability by using one coin, two coins and 10 or more coins.
16	10 Nov-15 Nov	F. D. energy distribution Law for electron gas in metals, zero point energy, average speed (at 0 K) of electron gas.	Practice and viva
17	17 Nov -22 Nov	Revision of unit 1^{st} and 2^{nd} .	Practice
18	24 Nov.	Revision of 3^{rd} and 4^{th}	Practice

Signature of Teacher **Head of Department**

INDIRA GANDHI (P.G.) MAHILA MAHAVIDYALAYA, KAITHAL

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Department Of Science

Lesson Plan (Session 2025-2026)

Class: B.Sc. Physical Science Semester: V
Name of the Course: Modern Physics Course Code: B23-PHY-501
Dates: 22 July, 2025 – 24 Nov., 2025

SYLLABUS

Maximum Marks: 100 Time: 3 hours
End Term Exam Marks: 50(T)+20(P)=70 Marks Assessment: 20(T)+10(P)=30 Marks

Note: Examiner will be required to set nine questions in all. First question will be compulsory, consisting of short type question covering the entire syllabus in addition to that eight more questions will be set, two question from each unit. Students will be required to attempt in all. In addition to the compulsory question, student will have to attempt four more questions selecting one question from each unit.

Unit	Topics	Contact Hours
Unit: I	**Introductory Quantum Mechanics**: Need of Quantum Mechanics, Planck's quantum hypothesis and radiation formula, quantization of EM radiation and photoelectric effect, Compton effect, de Broglie hypothesis, de-Broglie wave, wave packet ,phase and group velocities, Time-dependent and time- independent Schrodinger equations, Properties of wave function, Probability current density, linear momentum and energy operators, commutator of position and linear momentum operator, expectation values of position and linear momentum, particle confined in a one-dimensional infinite box: energy eigen functions and eigenvalues. Heisenberg's Uncertainty Principle and its applications	11
Unit: II	**Solid State Physics:** Crystalline state, crystal lattice, basis, lattice translation vectors, primitive and non-primitive unit cells, symmetry operations, Bravais lattices in two and three dimensions, Miller Indices, crystallographic planes, interplanar spacing, simple crystal structures: NaCl, CsCl, HCP, Zinc blende, Diamond, diffraction of waves by crystals, Bragg's law, Idea of Reciprocal Lattice :Reciprocal lattice to sc, bcc and fcc lattices, non-crystalline solids (introduction only)	11
Unit: III	**Atomic and Molecular Physics:** Sommerfeld theory (qualitative), Relativistic correction, Fine structure of Hα line, Lamb shift, Larmor's theorem (qualitative), Vector Atom Model, electron spin, space quantization, spin-orbit Interaction energy, LS and JJ coupling, Spectral terms for equivalent and non-equivalent electrons, Anomalous Zeeman effect, Lande's g-factor, splitting of D1 and D2 lines in weak magnetic field, Raman effect, Stoke and Anti-stoke lines	11
Unit: IV	**Nuclear and Particle Physics:** Composition of nucleus, stability of nucleus, nuclear properties, nuclear size, spin, parity, magnetic moment, quadrupole moment, Nuclear Models, Liquid Drop Model and Semi empirical Mass formula, Nuclear shell model and magic numbers (qualitative idea only), classification of fundamental particles, Quark and Lepton quantum numbers, Hadrons, Baryons and Mesons, Different types 12 9 of interactions and their properties	12
V	**Practicum** 1. To determine the Planck's constant using photocell. 2. To determine e/m by Thomson method. 3. To determine the ionization potential of mercury. 4. To study quantization of energy using Frank Hertz experiment. 5. To determine the wavelength of laser source using diffraction of double slits. 6. To determine diameter of wire using laser source. 7. To study the variation of resistivity with temperature of given semiconductor crystal using four probe method. 8. To find the unknown capacitance of a capacitor using De-Sauty's Bridge.	30

Text Books : 1. Concepts of Modern Physics, Arthur Beiser, 2009, McGraw-Hill

2. Modern Physics, Devinder Singh , S.B Bhardwaj, and Alisha Goyal, Shikha Garg Jeevanson Publication

Course Outcomes

1. Understand the need for Quantum Mechanics, Heisenberg’s uncertainty principle, time dependent and time independent Schrodinger equation, expectation values of position and momentum, particle confined in one dimensional box.

2. Familiar about the crystalline state, basis, crystal lattices, Reciprocal lattice to sc, bcc and fcc lattices.

3. Analyze the Hydrogen atom problem based on Sommerfeld theory, Vector Atom Model, LS&JJ coupling.

4. Familiar about various Nuclear Models, Magic Numbers, Classification of fundamental particles and Strange particles.

5. Learn to present observations, results, analysis and different concepts related to experiments of Quantum Mechanics and Solid State physics

Lesson Plan

SR. No	Date	Course Content	
		Theory (2)	**Practical (2)**
1	22 July -25July 2025	Students doing their internship	-----
2	28 July - 2 August	Students doing their internship	-----
3	4 August -8 August	Introductory Quantum Mechanics: Need of Quantum Mechanics, Planck's quantum hypothesis and radiation formula, quantization of EM radiation and photoelectric effect, Compton effect, de Broglie hypothesis, de-Broglie wave,	To determine e/m by Thomson method;
4	11 August - 14 August	Wave packet ,phase and group velocities, Time-dependent and time- independent Schrodinger equations, Properties of wave function, Probability current density, linear momentum and energy operators	Practice and viva
5	18 August - 23August	Commutator of position and linear momentum operator, expectation values of position and linear momentum, particle confined in a one-dimensional infinite box: energy eigen functions and eigenvalues. Heisenberg's Uncertainty Principle and its applications	To determine the ionization potential of mercury.
6	25 August -30 August	Solid State Physics**:** Crystalline state, crystal lattice, basis, lattice translation vectors, primitive and non-primitive unit cells, symmetry operations, Bravais lattices in two and three dimensions,	Practice and viva
7	1 Sept. - 6 Sept.	Miller Indices, crystallographic planes, interplanar spacing, simple crystal structures: NaCl, CsCl, HCP, Zinc blende, Diamond, diffraction of waves by crystals,	To study quantization of energy using Frank Hertz experiment
8	8 Sept. - 13 Sept.	Bragg's law, Idea of Reciprocal Lattice :Reciprocal lattice to sc, bcc and fcc lattices, non-crystalline solids (introduction only)	Practice and viva
9	15 Sept. - 20 Sept.	Atomic and Molecular Physics**:** Sommerfeld theory (qualitative), Relativistic correction , Fine structure of Hα line, Lamb shift.	To determine the wavelength of laser source using diffraction of double slits
10	22 Sept. - 27 Sept.	Larmor's theorem (qualitative) Atom Model, electron spin, space quantization, spin-orbit Interaction energy,	Practice and viva
11	29 Sept.- 4 Oct.	LS and JJ coupling Spectral terms for equivalent and non-equivalent electrons, Anomalous Zeeman effect, Lande's g-factor.	To determine diameter of wire using laser source
12	6 Oct.- 11 Oct.	splitting of D1 and D2 lines in weak magnetic field, Raman effect, Stoke and Anti-stoke lines.	Practice and viva
13	13 Oct.- 18 Oct.	Nuclear and Particle Physics**:** Composition of nucleus, stability of nucleus, nuclear properties, nuclear size, spin, parity.	Practice and viva
14	27 Oct. - 1 Nov.	magnetic moment, quadrupole moment, Nuclear Models, Nuclear Models, Liquid Drop Model and Semi empirical Mass formula.	Practice and viva
15	3 Nov. - 8Nov	Nuclear shell model and magic numbers (qualitative idea only), classification of fundamental particles	To find the unknown capacitance of a capacitor using De-Sauty's Bridge.
16	10 Nov-15 Nov	Quark and Lepton quantum numbers, Hadrons, Baryons	Practice and viva
17	17 Nov -22 Nov	Normal coordinates and normal modes, Normal modes of vibration for given spring mass system,	Practice
18	24 Nov.	Hadrons, Baryons and Mesons, Different types 12 9 of interactions and their properties	Practice

Signature of Teacher **Head of Department**