K. L. MEHTA DAYANAND COLLEGE FOR WOMEN
Lesson Plan for the Session 2024-25 (Even Semester)

Name of the Assistant Professor: Dr. Meenu Dua **Class And Section: B.Sc N.M 6th Semester** **Subject: Physical Chemistry(602)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week	**Topics to be Covered**
Week 1	Introduction to Electronic Spectrum; Molecular Orbitals – Bonding and Antibonding
Week 2	Potential Energy Curves, Selection Rules, Franck-Condon Principle
Week 3	Sigma and Pi Molecular Orbitals; Energy Levels and Transitions
Week 4	Revision of Spectroscopy-III and Practice Questions
Week 5	Introduction to Photochemistry; Thermal vs. Photochemical Processes
Week 6	Grothuss-Draper and Stark-Einstein Laws; Quantum Yield
Week 7	Jablonski Diagram; Fluorescence and Phosphorescence
Week 8	Internal Conversion, Intersystem Crossing; Photosensitized Reactions
Week 9	Energy Transfer Processes; Revision of Photochemistry
Week 10	Ideal and Non-Ideal Solutions; Concentration Expressions, Activity
Week 11	Colligative Properties – Raoult's Law, Relative Lowering of Vapor Pressure
Week 12	**MOCK TEST**: Covering All Units
Week 13	Molecular Weight from Osmotic Pressure; Boiling Point Elevation & Freezing Point Depression
Week 14	Thermodynamic Derivations; Experimental Methods for Colligative Properties
Week 15	**REVISION**: Full Syllabus Recap and Doubt Clearing

K. L. MEHTA DAYANAND COLLEGE FOR WOMEN
Lesson Plan for the Session 2024-25 (Even Semester)

Name of the Assistant Professor: Dr. Meenu Dua **Class And Section: B.Sc. M 6th Semester** **Subject: Physical Chemistry(602)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
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Week 15	**REVISION**: Full Syllabus Recap and Doubt Clearing

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Beena Sethi **Class And Section: B.Sc. M 4th Semester** **Subject: Inorganic Chemistry** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Chemistry of f – block elements Lanthanides Electronic structure, occurrence and isolation, lanthanide compounds.
Week 2	Oxidation states and ionic radii and lanthanide contraction, complex formation
Week 3	Occurrence and isolation, lanthanide compounds. Assignment
Week 4	Doubt Class and Test
Week 5	Actinides General features and chemistry of actinides, Comparison of properties of Lanthanides and Actinides and with trans ition elements .
Week 6	Chemistry of separation of Np, Pu and Am from U
Week 7	Comparison of properties of Lanthanides and Actinides and with trans ition elements .
Week 8	Test **Theory of Qualitative and Quantitative Inorganic Analysis**-I Chemistry of analysis of various acidic radicals,
Week 9	Chemistry of identification of acid radicals in typical combinations
Week 10	Chemistry of interference of acid radicals including their removal in the analysis of basic radicals.

Week 11	Chemistry of analysis of various groups of basic radicals, Theory of precipitation, co-precipitation, Post- precipitation, purification of precipitates.
Week 12	**MOCK TEST**
Week 13	Theory of precipitation, co- precipitation, Post- precipitation, purification of precipitates.
Week 14	Doubt Class and Test
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Beena Sethi **Class And Section: B.Sc.(NM) VI Semester** **Subject: Inorganic Chemistry**	
Week 1	Organometalliv Chemistry(basics), Definition, Nomenclature, Classification of organometallic compounds
Week 2	Preparation, Properties and Bonding of Alkyls of Li, Al
Week 3	Preparation, Properties and Bonding of Alkyls of Hg, Sn
Week 4	A brief account of metal-ethylenic complexes
Week 5	Mononuclear carbonyls and the nature of bonding in metal carbonyls TEST & ASSIGNMENT
Week 6	Arrhenius concept of acid and base, Bronsted- lowry concept of acid and base, the Lux Flood concept of acid and base
Week 7	Solvent system concept of acid and base and lewis concept of acid and base
Week 8	Relative strength of acid and base, concept of hard and soft acids and bases
Week 9	Symbiosis, electronegativity and hardness and softness TEST & ASSIGNMENT
Week 10	Essentials and trace elements in biological processes, Nitrogen fixation
Week 11	Metalloporphyrins with special reference to haemoglobin and myoglobin, Biological role of alkali and alkaline earth metal ions with special reference to calcium
Week 12	**MOCK TEST**
Week 13	Preparation, properties, structures and uses of silicones
Week 14	Preparation, properties, structures and uses of Phosphazenes TEST & ASSIGNMENT
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Shveta Arya **Class And Section: B.Sc.(Medical) 6th sem** **Subject: Zoology (Developmental Biology) (6.2)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Spermatogenesis : Site & stages of spermatogenesis Stages of spermatogenesis& Generalized structure of mammalian sperm Stages of Oogenesis
Week 2	Vitellogenesis & Generalized structure of mammalian ovum Hormonal Control of Spermatogenesis & Oogenesis Test of Historical perspectives, aims and scope of developmental biology
Week 3	Types & significance of Fertilization Process of Fertilization
Week 4	Parthenogenesis :Types & Significance Process of blastulation in invertebrates Process of blastulation in vertebrates
Week 5	Process of blastulation in invertebrates Process of blastulation in vertebrates
Week 6	Fate-map construction in frog Fate-map construction in chick
Week 7	Gastrulation in invertebrates **Class Test** of Fertilization and different types of eggs
Week 8	**Assignment** Gastrulation in vertebrates
Week 9	Gastrulation & formation of three germinal layers in frog Gastrulation & formation of three germinal layers in chick
Week 10	Extra embryonic membranes: structure & significance in birds Extra embryonic membranes: structure & significance in mammals
Week 11	Elementary knowledge of primary organizers **Class Test**
Week 12	**MOCK TEST**
Week 13	Concepts of competence, determination and differentiation
Week 14	Concept of regeneration
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr Shveta Arya **Class And Section: B.Sc. (Medical) 6th semester** **Subject: Entomology** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction to the syllabus and discussion about books, Study of important insect pests, Study of sugarcane pest (sugarcane leaf - hoper)
Week 2	Study of sugarcane leaf-hopper systematic position, habits and nature of damage caused, Study of life cycle and control of pyrilla perpusilla
Week 3	Study of sugarcane whitefly pest, Study of sugarcane top borer pest **Assignment**
Week 4	Study of sugarcane root borer, Study of Gurdaspur borer **Class Test**
Week 5	Study of Cotton grey weevil, Study of Cotton jassid, Study of wheat stem borer with its systematics position, habits, nature of damage caused and life cycle and control
Week 6	Study of Rice Hispa, Study of vegetable pest The Red pumpkin beetle With their systematic position, habits and nature of damage caused, Life cycle and control
Week 7	Study of The pumpkin fruit fly, Study of paddy pest Gandhi bug with their systematic position, habits and nature of damage caused and life cycle and control, Study of Rice grasshopper, Study of Rice stem borer
Week 8	Study of The vegetable mite, Study of Stored grain pest pulse beetle with their systematic position, habits and nature of damage caused. Life cycle and control
Week 9	Study of Rice weevil, Study of wheat weevil **Class Test**
Week 10	Study of Rust Red Flour beetles
Week 11	Study of Lesser grain borer, Study of The Hadda beetle
Week 12	**MOCK TEST**
Week 13	Study of Grain & Flour moth and integrated pest management, Study of insect control (biological control) it's history, requirement and precautions and feasibility of biological agents for control and chemical control
Week 14	Important Bird and rodent pests of agriculture & their management
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Renu Pandey **Class And Section: B.Sc. Biotechnology 2nd sem** **Subject: Basics of Microbiology (DSC03)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	History and Evolution of Microbiology, understanding of microbial growth
Week 2	Assignment, the criteria used included molecular approaches,
Week 3	Distribution and characterization of Prokaryotic and Eukaryotic cells, Morphology and cell structure.
Week 4	Assignment ,Current classification of bacteria, Major groups of microorganisms: bacteria, algae, fungi
Week 5	algae, fungi, Nutritional categories of micro-organisms, Microbial growth: Growth curve, **Class Test**
Week 6	Microbial Metabolism: Metabolic pathways, Microbial Metabolism: amphi-catabolic, Nutrional requrirements, **Assignment**
Week 7	Control of Microorganisms: By Physical Agents, Preservation of Microorganisms, microbial growth, measurements of growth factors,
Week 8	Spore and fram staing negative staining,
Week 9	Membrane transport, model membrane, viral reproduction, cell cycle system,
Week 10	**Class Test**, Cell division, Apoptosis cell death programme
Week 11	Component of cell cycle and cell cycle regulation
Week 12	**MOCK TEST**
Week 13	Microbial taxonomhy, Different criteria of classification, Classification of Bacteria
Week 14	Contribution of Scientist in Microbilogy, Louis Pasteur, Robert Koch, Edward jenner
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Renu Pandey **Class And Section: B.Sc. Biotechnology** **IInd year(4thsem)** **Subject: Animal Diversity II (BT 401)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Proto-chordates: Outline, General features and characters of Herdmania
Week 2	General features and important characters of Branchiostoma,
Week 3	Origin of Chordates, Migration in Pisces, Amphibia: Classification, Parental care
Week 4	Amphibia: Paedogenesis, Reptelia: Classification

Week 5	Reptilia: Origin, Aves: Classification, Aves: flight-adaptations
Week 6	**Class Test** Aves: migration, Mammalia: Classification
Week 7	Mammalia: dentition, Comparative anatomy of vertebrates: Integumentary system
Week 8	Comparative anatomy -Digestive system,
Week 9	Comparative anatomy of vertebrates: Respiratory system
Week 10	**Assignment**, Comparative Anatomy of Vertebrates –Heart,
Week 11	Comparative Anatomy of vertebrates' Aortic arches,
Week 12	**MOCK TEST**
Week 13	Comparative Anatomy of vertebrates –Ear, Eye, **Class Test**
Week 14	Autonomic nervous system, Comparative Anatomy of vertebrates –Brain
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: MS. Renu **Class And Section: B.Sc. Biotechnology** **IIIrd year (6th Sem)** **Subject: IPR Entrepreneurship, Bioethics & Biosafety (BT 601)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	World Trade Organization, WIPO, Trade Mark, Trade Design
Week 2	Assignment, Industrial Property Right, WTO and related intellectual property provisions**,**
Week 3	Patenting in Biotechnology, Entrepreneurship, Introduction, selection of a product, **Assignment**
Week 4	Release of product, Basic regulation of excise, Demand for a given product
Week 5	**Class Test**, Feasibility of its production under constraints of raw material, Energy input and financial situation,
Week 6	Export potential, Bioethics-necessity, Bioethics- paradigms, Health hazards concerning biotechnology,
Week 7	Bioethical Issues, Introduction to contaminant levels, Biosafety Levels,
Week 8	Introduction to GLP, Biosafety Levels,
Week 9	Energy constraints, Introduction to GMP
Week 10	Ethical Issues molecular biology and genetic engineering issues
Week 11	Physical constraints, Biosafety level issues, **Class Test**

Week 12	**MOCK TEST**
Week 13	Good laboratory practices and Good Manufacturing Practices
Week 14	Legal protection in research, , ethical and depository considerations
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. VANDANA KUMARI **Class And Section: B.Sc. /B.A 6th SEMESTER** **Subject: DYNAMICS** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Syllabus and examination scheme discussed, Preliminary concepts
Week 2	Simple Harmonic Motion (SHM) - Articles, Examples, and Exercises
Week 3	SHM continued - Exercises and Doubt sessions, Elastic String - Articles
Week 4	Elastic String - Examples and Exercises, Test on SHM and Elastic String
Week 5	Newton's Laws of Motion - Articles and Examples (Ex 5.1, 5.2)
Week 6	Newton's Laws of Motion - Exercises and Doubts, Work Done - Articles and Examples (Ex 6.1)
Week 7	Work Done, Power, and Energy - Articles, Examples, and Exercises (Ex 6.2, 6.3)
Week 8	Test on Work, Power, and Energy, Projectile Motion - Articles and Examples (Ex 8.1, 8.2)
Week 9	Projectile Motion - Exercises, Doubts, and Examples (Ex 8.3, 8.4)
Week 10	Central Orbits - Articles and Examples (Ch 9: Ex 9.1, 9.2), Test on Ch 9
Week 11	Kepler’s Laws of Planetary Motion - Articles and Examples (Ch 10), Exercises and Doubts
Week 12	Motion along a Plane Curve - Articles and Examples (Ch 1), Relative Motion - Articles and Examples (Ch 2)
Week 13	Motion of a Particle in Three Dimensions - Articles and Exercises (Ch 11), Motion on Smooth and Rough Plane Curves - Articles and Exercises (Ch 7)
Week 14	Mock Tests
Week 15	Doubts and Revisions of Ch 1 to 11

K.L MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25 (EVEN SEMESTER)

Name of the Assistant Professor: Ms. VANDANA KUMARI **Class And Section: M.Sc. Mathematics** **Subject: Python Programming** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week	**Topics Covered**
Week 1	Introduction to Python: Overview of Python, Python Interpreter, Python Shell. Writing and executing Python scripts.
Week 2	Data Types and Variables: Numeric types, Strings, Lists, Tuples, Sets, Dictionaries. Basic Operators and Expressions.
Week 3	Control Flow Statements: If-else, Loops (for, while), Break, Continue, Pass statements.
Week 4	Functions: Defining and calling functions, Arguments, Recursion, Keyword arguments. Built-in functions and Lambda functions.
Week 5	File Handling: Reading and writing files, Opening and closing files. File modes and operations.
Week 6	Exception Handling: Try-except blocks, Handling multiple exceptions. Debugging and Error Handling techniques.
Week 7	Python Graphics: Implementing visualization using graphical objects like point, line, histogram, sine and cosine curves.
Week 8	Strings and Lists: String manipulation, String functions, List operations. List comprehension and advanced list operations.
Week 9	Tuples, Dictionaries, and Sets: Creating and manipulating collections. Practical applications of dictionaries and sets.
Week 10	Advanced Function Concepts: Higher-order functions, Map, Filter, Reduce. Working with modules and packages.
Week 11	Practice Programs: Solving problems on number operations, string manipulations. Writing efficient Python code.
Week 12	**MOCK TEST**: Covering all topics taught so far.
Week 13	Implementing Python programs for file handling, exception handling, and data visualization.
Week 14	Hands-on session for problem-solving.
Week 15	**REVISION**: Discussion of key concepts, doubts, and final preparation for exams.

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of Assistant Professor: Ms. Vandana Kumari **Class:** MDC Mathematics) 2nd Sem **Subject: Mathematical Reasoning** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week	**Topics Covered**
Week 1	Introduction to Mathematical Reasoning Course Overview, Logical Thinking, Analogy, Classification

Week 2	Series Completion & Coding-Decoding Number and Letter Series, Coding-Decoding Techniques
Week 3	Blood Relation & Puzzle Test Family Tree, Relationship-based Questions, Puzzle Solving
Week 4	Sequential Output Tracing & Logical Venn Diagrams
Week 5	Alphabet Test & Number Ranking Alphabet Order, Ranking and Time Sequence Problems
Week 6	Mathematical Operations & Logical Sequences Arithmetic Operations, Logical Sequences, Word-based Puzzles
Week 7	Data Interpretation (Tabulation & Graphs) Data Representation, Tables, Bar Graphs, Line Graphs
Week 8	Pie Charts & Venn Diagrams Understanding Pie Charts, Complex Venn Diagram Applications
Week 9	Analytical Reasoning & Mirror Images Concept of Analytical Reasoning, Mirror Image Problems
Week 10	Problem-Solving Strategies Mixed Topic Practice, Time Management
Week 11	Advanced Logical Reasoning Higher-Level Logical and Analytical Reasoning Problems, Past Year Questions
Week 12	**Mock Test**
Week 13	**Doubt Clearing & Review Sessions** Addressing Common Mistakes, Topic-wise Problem Solving
Week 14	**Exam Preparation Strategies** Revision of Key Concepts, Solving Sample Papers
Week 15	**Final Revision** Quick Recap of Important Topics, Last-Minute Practice

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Reeta Kumari **Class And Section: B.Sc.(Non-Med.)4th sem** **Subject: Statistical Mechanics(Physics1)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction about syllabus. Probability, some probability considerations, combination possessing maximum and minimum probability.
Week 2	Distribution of molecules in two boxes. Case with weightage. Phase space, microstate and macrostates.
Week 3	Statistical fluctuations. Constraints and accessible states. Thermo dynamical probability.
Week 4	Assignment and test, postulates of statistical physics. Division of phase space into cells.
Week 5	Condition of equilibrium between two system in thermal contact, beta parameter.
Week 6	Entropy and probability, Boltzmann's distribution law, test
Week 7	Evolution of A and beta. Bose-Einstein statistics. Application of B-E statistics to plank's radiation law.
Week 8	B-E gas. Fermi Dirac statistics, M.B. Law as limiting case of B-E.

Week 9	Degeneracy and B.E. Condensation.
Week 10	Fermi-Dirac gas, electron gas in metals
Week 11	Zero point energy and revision
Week 12	**MOCK TEST**
Week 13	Specific heat of metals and its solution
Week 14	Specific heat of metals and its solution
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Ms. Reeta Kumari **Class And Section: B.Sc.(Non-Med.) 2nd sem** **Subject: Electricity and magnetism(Major Physics)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction about syllabus, electric field and electric potential: scalars and vectors, dot and cross product, triple vector product, scalar and vector fields.
Week 2	Differentiation of vector, Gradient of a scalar and its physical signification, integration of vector, Gauss Divergence theorem and stock's theorem.
Week 3	Derivation of field E from potential as gradient, Laplace and Poisson equations. Electric flux. Gauss's law
Week 4	Application of gauss law, mechanical force of charged surface, energy per unit volume. test
Week 5	Assignment. Biot-Savart's law and its applications. Ampere's circuital law and its application. Properties of B , Vector potential.
Week 6	Force on a dipole in an external field, electric current in an atom, electron spin and magnetic moment.
Week 7	Magnetic materials. Various magnetic terms. Electronic theory of diamagnetism, Para magnetism, domain theory of ferromagnetism, B-H loop and energy lose
Week 8	Test,Faraday;slaw of induction and lenz's law, self-inductance, mutual inductance energy stored in magnetic field
Week 9	Maxwell equations and their derivation, displacement current. Vector and scalar potentials, boundary conditions at interface between different media,pointing vector and theorem .
Week 10	Electric current and current density, ohms law growth and decay of current in LC and LR circuits
Week 11	Growth and decay of current in LCR circuit. Resonance circuit
Week 12	**MOCK TEST**
Week 13	Analysis of RL, RC and LCR circuits, test

Week 14	Series and parallel resonance circuits
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Annu Kalra
Class And Section: M.Sc (F)Chemistry
Subject: Inorganic Special-IV (Organotransition metal Chemistry), 17CHE24GA1

Week 1	Introduction and Classification of organometallic compounds, Covalent organometallic compounds, Ionic organometallic compounds, Electron deficient organometallic compounds, Cluster organometallic compounds, Alkyls and Aryls of Transition Metals and their types
Week 2	Alkyls and Aryls of Transition Metals, routes of synthesis, stability and decomposition pathways, organo copper in organic synthesis
Week 3	Transition metal π–complexes with alkenes, Transition metal π–complexes with alkynes, Transition metal π–complexes with allyls
Week 4	Transition metal π–complexes with allyls, Transition metal π–complexes with dienyls (metallocenes), Preparation of Transition metal π–complexes
Week 5	Properties of Transition metal π–complexes, Nature of bonding and structural features, Important reactions related to nucleophilic attack on ligands
Week 6	Important reactions related to organic synthesis, Introduction to Transition metal- carbene complexes: Fischer type and Schrock type carbene complexes, Synthesis of Fischer type carbene complexes, Reactions of Fischer type carbene complexes, Structure and Bonding of Fischer type carbene complexes
Week 7	Synthesis of Schrock type carbene complexes, Reactions of Schrock type carbene complexes, Structure and Bonding of Schrock type carbene complexes , Transition metal-carbyne complexes and their synthesis
Week 8	Transition metal-carbyne complexes and their synthesis, Transition metal-carbyne complexes and their reactions , Transition metal-carbyne complexes: structural features
Week 9	Fluxionality & dynamic equilibria in compounds such as acyclic alkenes, Fluxionality & dynamic equilibria in compounds such as σ-bonded alkenes, Fluxionality & dynamic equilibria in compounds such as π–bonded cyclic alkenes
Week 10	Rotation of ligands on metals, Ligand scrambling on metals, Zeigler-Natta polymerization ; homogeneous catalytic hydrogenation
Week 11	Alkene hydrogenation-Wilkinson Catalyst, Oxidation of olefins-Wacker's process, Hydroformylation of olefins – the oxo process
Week 12	**MOCK TEST**
Week 13	Revision of Unit 1 and 2

Week 14	Revision of Unit 3 and 4
Week 15	**Revision (**Full syllabus**)**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Annu Kalra **Class And Section:** B.Sc Physical Sciences/Life Sciences **Subject:** Skill Enhancement Course (Fuel Chemistry), 24CHE402SE01	
Week 1	Solid Fuels Coal- origin, composition, calorific value and classification
Week 2	Characteristics and distribution of Indian Coal, storage and spontaneous combustion of coal, coal washing and blending
Week 3	Petrographic constituents of coal, carbonization of coal, manufacture and properties of metallurgical coke and recovery of by-products
Week 4	Liquid Fuels Origin and composition of crude oil, crude oil distillation
Week 5	Special reference to distillation products- gasoline, kerosene and diesel oil, cracking and reforming
Week 6	Coal tar distillation products, shale oil
Week 7	Gaseous Fuels Natural gas, coal gas, coke oven and blast furnace gas
Week 8	Manufacture of water gas and producer gas, carbureted water gas
Week 9	Synthetic fuels: hydrogenation of coal, Fischer Tropsch synthesis
Week 10	Nuclear Fuels Introduction to nuclear fuels and nuclear reactors, moderators and structural materials, introduction to renewable energy sources
Week 11	Combustion: combustion of solid fuels, calculation of volume and weight of air necessary for combustion of fuels, gas analysis
Week 12	**MOCK TEST**
Week 13	Revision of Unit 1 and 2
Week 14	Revision of Unit 3 and 4
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Reeta Kumari **Class And Section: B.Sc.(Non-Med.) 6th semester** **Subject: Atomic, Molecular And Laser Physics** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction about syllabus, Vector atom model, quantum numbers associated with vector atom model, penetrating and non-penetrating orbits.
Week 2	Spectral lines in different series off alkali spectra, assignment and test
Week 3	Spin orbit interaction and doublet term separation, LS or Russel-Saunder Coupling.
Week 4	JJ coupling, Interaction energy for LS and JJ coupling
Week 5	Zeeman effect(normal and anomalous), Zeeman pattern of D1 and D2 lines in Na-atom
Week 6	Paschen- back effect of single valance electron system. Weak field Stark Effect of Hydrogen atom. test
Week 7	Discrete set of electronic energies of molecules. Quantization of vibrational and rotational energies.
Week 8	Raman effect (Stoke's and anti Stoke's lines. Features of laser: directionality.
Week 9	Features of laser: High intensity, high degree of coherence, Einstein's coefficients and possibility of amplification.
Week 10	Momentum transfer, life time of level, kinetics of optical absorption.
Week 11	Threshold condition for laser emission, laser pumping.
Week 12	**MOCK TEST**
Week 13	He-Ne laser and Ruby laser(principle, construction and working), test
Week 14	Application of laser in the field of medicine and industry.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Sonam Ahuja **Class And Section:** B.Sc(Physical Science) Sem 6th **Subject:** Linear Algebra **Teaching Term:** 7th January to 5th May 2025 (Excluding Holi Break)	
Week 1	Unit1: vector Spaces , Subspaces , Sun of Subspaces, Linear Span, Linear independent and dependent subsets of a vector spaces
Week 2	Finitely generated vector space, Existence theorem for basis of a finitely generated vector space, Finite dimensional vector spaces

Week 3	Invariance of the number of elements of basis sets, Dimensions Quotient space and it's dimension
Week 4	Unit2: Homomorphism & isomorphism of vector spaces linear transformations and linear forms on vector spaces, vector space of all the linear transformations
Week 5	Dual spaces, Bidual spaces annihilator of subspaces of finite dimensional vector spaces
Week 6	Null Space , Range space of a linear transformation, Rank & Nullity Theorem.
Week 7	Applications of unit 1 & unit 2 Doubt Sessions of both units Test of both units
Week 8	Unit 3: Algebra of Linear transformation , minimal polynomial of linear transformation, singular and non-singularly transformations
Week 9	Matrix of a linear transformation, Change of basis, Eigenvalues & Eugene vectors of Linear Transformations.
Week 10	Applications of unit 3 Doubts & Test of unit 3
Week 11	Unit 4: nner product spaces, Cauchy-Schwarz inequality, orthogonal vectors, orthogonal complements, orthogonal sets and Basis
Week 12	**MOCK TEST**
Week 13	Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt orthogonalization process Adjoint of a linear transformation and it's properties, unitary linear transformations.
Week 14	Assignments & Test of unit 3 , unit 4
Week 15	**REVISION**

K.L. MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25 (EVEN SEMESTER)

Name of the Assistant Professor: Dr. Sonam Ahuja **Class and Section:** M.Sc. Mathematics, Semester II **Subject:** Theory of Field Extensions **Teaching Term:** 7th January to 5th May 2025 (Excluding Holi Break)	
Week	**Topics to be Covered**
Week 1	Introduction to Field Extensions: Definitions and elementary properties; Simple Extensions: Algebraic and transcendental extensions
Week 2	Factorization of polynomials in extensions; Minimal polynomials and their properties
Week 3	Splitting fields and their existence; Algebraically closed fields
Week 4	Separable and inseparable extensions; Perfect fields
Week 5	Introduction to Galois Theory; Galois extensions and examples

Week 6	Automorphism groups of fields; The fundamental theorem of Galois Theory
Week 7	Fixed fields and the connection with field extensions; Monomorphisms and their linear independence
Week 8	Normal extensions and their characterizations; Cyclotomic extensions
Week 9	Applications of Galois Theory in solving polynomials; Radical solutions of polynomials
Week 10	Solvability of polynomial equations using radicals; Fundamental theorem of algebra and its proof using field extensions
Week 11	Constructible numbers and classical Greek problems; Examples and problem-solving
Week 12	**MOCK TEST** covering all sections
Week 13	Review of key concepts; Discussion on advanced problems and applications
Week 14	Advanced problem-solving sessions; Additional applications of field extensions
Week 15	**REVISION** and doubt-clearing session

K.L. MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25 (EVEN SEMESTER)

Name of the Assistant Professor: Dr. Sonam Ahuja
Class and Section: M.Sc. Mathematics 4th Semester
Subject: Algebraic Number Theory
Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)

Week	**Topics to be Covered**
Week 1	Introduction to Algebraic Number Theory, Gaussian integers and their properties
Week 2	Primes and fundamental theorem in the ring of Gaussian integers, Examples
Week 3	Integers and fundamental theorem in $Q(\omega)$, where $\omega^3 = 1$, Algebraic fields
Week 4	Primitive polynomials, Quadratic field $Q(\sqrt{m})$, Sections of $Q(\sqrt{2})$
Week 5	Fields where the fundamental theorem is false, Euclidean fields
Week 6	Fermat's theorem in the ring of Gaussian integers, Primes in $Q(\sqrt{2})$ and $Q(\sqrt{5})$
Week 7	Countability of set of algebraic numbers, Liouville theorem and its generalizations
Week 8	Transcendental numbers, Algebraic number fields, Theorem of primitive elements
Week 9	Ring of algebraic integers, Norm and trace of an algebraic number, Bilinear pairing
Week 10	Integral basis, Discriminant of an algebraic number field, Ideals in algebraic integers
Week 11	Explicit construction of integral basis, Cyclotomic fields, Quadratic and cubic cases
Week 12	**MOCK TEST** (Covering Weeks 1–11 topics)

Week 13	Integral closure, Noetherian ring, Dedekind domains, Fractional ideals
Week 14	Unique factorization, GCD and LCM of ideals, Chinese Remainder Theorem, Dedekind theorem Ramified and unramified extensions, Different of an algebraic number field, Factorization in the ring of algebraic integers,
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor : Ms.Shivani Gandhi **Class : B.sc.2nd yr.(4th Sem)** **Subject : programming in C and Numerical Method** **Teaching Term: 7th January 2025 to 5th May 2025(Excluding Holi Break)**	
Week 1	Programmers model of a computer, algorithms, flow charts, data type, operators and expressions , input /output functions.
Week 2	Test and Assignment, decision statements, logical and conditioner statements, implementation of loops
Week 3	Switch statement and case control structures. Functions, Proprocessors and Arrays.
Week 4	Character data type, standard string handling functions, arithmetic operations on characters, test and assignment.
Week 5	Definition of structures, using structures, use of structures in array and Arrays in structures
Week 6	Pointers pointers data type, pointers and Arrays, pointers and functions.
Week 7	Solution of algebraic and Transcendental equations, bisection method, test and assignment.
Week 8	Application of Boolean Algebra to switching theory (using AND,ORand NOTgates) The Karnaugh method .
Week 9	Regula- falsi method, secant method, assignment
Week 10	Newton rephson's method, Newton's iterative method for finding pth root of a number, order of convergence of above methods
Week 11	Simultaneous linear algebraic equations: gauss elimination method, Gauss Jordan method
Week 12	Mock Test
Week 13	Triangularization method(LU decomposition method) , crout's method, Choleski decomposition method,
Week 14	Itreative method, jacobi's method, Gauss seidel's method, Relaxation method.
Week 15	**Revision.**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms.Shivani Gandhi **Class And Section: B.Sc. 1st year (2nd sem)** **Subject : Elements of Mathematical Reasoning (Skill)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Analogy, Classification and Series Completion
Week 2	Coding And Decoding, Blood Relation and Puzzle Test
Week 3	Sequential Output Tracing and Logical Venn Diagram
Week 4	Test of unit -1 and Alphabet Test
Week 5	Number,Ranking and Time Sequence Test
Week 6	Mathematical Operations And Logical Sequence of Words
Week 7	Arithmetical Reasoning and Test of Unit - 2
Week 8	Data Interpretation (Tabulation)
Week 9	Bar Graphs and Line Graphs
Week 10	Pie Chart and Test of Data Interpretation
Week 11	Venn Diagrams
Week 12	**MOCK TEST**
Week 13	Analytical Reasoning and Mirror Images
Week 14	Test of Unit - 3
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

NameoftheAssistant Professor:Ms. Sonia **ClassAnd Section:B.Sc. Final year** **Subject:Real & Complex Analysis** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Jacobians
Week 2	Beta & Gamma Function
Week 3	Gamma Function Introduction of Double & Triple integrals
Week 4	Double & Triple integrals, Class test & Assignment
Week 5	Change of order of integration in double integrals Introduction of fourier series
Week 6	Properties of fourier series, fourier coefficients, drichlet's conditions, parseval's s identity
Week 7	Fourier series for even & odd functions, half range series, change of intervals
Week 8	Extended complex plan, Stereographic projection of complex numbers
Week 9	Continuity, differentiability of complex functions, analytic function
Week 10	Cauchy-Riemann equations, Harmonic functions
Week 11	Mapping by elementary functions: Translation, Rotation , Magnification & Inversion
Week 12	**MOCK TEST**
Week 13	Conformal Mapping, Mobius transformations, fixed point
Week 14	Cross Ratio, Inverse points & Critical Mappings
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

NameoftheAssistant Professor:Ms. Sonia **ClassAnd Section:B.Sc. 2nd year** **Subject:Sequence & Series** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Topology of real numbers

Week 2	Topology of real numbers & introduction of sequences
Week 3	Cauchy's first & second theorem ,Cauchy's sequence
Week 4	Cauchy's general principal of convergence, subsequences
Week 5	Infinite series convergence & divergence
Week 6	Infinite series continue Hyper harmonic series Class test & Assignment
Week 7	D'Alembert's ratio test Raabes test, Logrithmic test
Week 8	De Morgan and Bertrand's test, cauchy's nth root test
Week 9	Cauchy's integrals test, Gauss test, cauchy's condensation test
Week 10	Class test & Assignment Introduction of Alternating series
Week 11	Leibnitz's test ,absolute &conditional convergence
Week 12	**MOCK TEST**
Week 13	Arbitrary series,able's lemma,able's test, continue
Week 14	Convergence & absolute convergence
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Dr.Nupur Srivastava **Class And Section: BA (4th semester)** **Subject: Special function and Integral Transformation(BM-242)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of subject. Laplace transform, existence theorem,
Week 2	Linearity of Laplace transform, shifting theorem
Week 3	Laplace transform of derivatives and integrals
Week 4	Differentiation and integration of Laplace transform
Week 5	Test, doubt class, convolution theorem
Week 6	Inverse Laplace transform

Week 7	Solution of ordinary differential equation
Week 8	Fourier transforms, test
Week 9	Linearity property, shifting modulation
Week 10	Convolution theorem, Fourier transform of derivatives
Week 11	Relation between Fourier and Laplace transform
Week 12	**MOCK TEST**
Week 13	Parseval's identity for Fourier transform, test
Week 14	Solution of differential equation using Fourier Transform
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Dr.Nupur Srivastava **Class And Section: BA (4th semester)** **Subject: sequence and series (BM-241)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of subject, Boundedness of the set of real numbers., least upper bound, greatest lower bound
Week 2	Neighborhood, interior points, isolated points, limit points, open sets
Week 3	Closed set, test, interior of set closure of set and their properties
Week 4	Test, Bolzano -Weier strass theorem, doubt class
Week 5	Real sequences and their convergence, theorems on limit, open covers, Compact sets, Hein Borel theorem
Week 6	Test, Monotone sequence, Cauchy sequence, general principal convergence, infinite series convergence and divergence, comparison test
Week 7	General principal of convergence, test convergence and divergence of geometrical series, p series and test
Week 8	Infinite series D' Alembert test, Rabbe's test, Logarithm test, De Morgon test Cauchy root test
Week 9	Gauss test, Cauchy integral test Cauchy condensation test, test
Week 10	Leibnitz test, absolute and convergence Arbitrary series ABEL' s lemma, insertion and removal of parenthesis
Week 11	Multiplication of series, Cauchy product of series

Week 12	**MOCK TEST**
Week 13	Convergence, doubt class and numerical
Week 14	Divergence, doubt class and test
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Nupur Srivastava
Class And Section: M.Sc. (4th semester)
Subject: Viscous fluid Dynamics(17MM24H3)
Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)

Week 1	Introduction of subject, Vortices in two dimensions, vortex doublet
Week 2	Image, motion due to vortices, single and double rows vortices
Week 3	Karman vortex street, wave equation, speed of sound in gas, subsonic, sonic and supersonic flow
Week 4	Equation of motion of gas, flow through nozel, stress components, Translation motion of fluid elements, rate of strain,
Week 5	Relation between stress and rate of strain, coefficient of viscosity and laminar flow
Week 6	Newtonian and non-Newtonian fluid, Navier Stoke equation, equation of motion in cylindrical and polar co-ordinates
Week 7	Equation of energy, diffusion of viscosity, Energy dissipation due to viscosity, equation of state
Week 8	Plane priscilla and country flow between two parallel plates, theory of lubricant, steady flow between co axial circular cylinder
Week 9	Flow through tubes of uniform elliptic and equilateral triangle, unsteady flow over plate, steady flow through a sphere
Week 10	Flow in convergent and divergent channels, Dynamical symmetry,
Week 11	Inspection method and discussion on dimensional number, dimensional analysis ,
Week 12	**MOCK TEST**
Week 13	Pie theorem, Karman integral, boundary layer on flat plate
Week 14	Group discission and presentation
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Nupur Srivastava **Class And Section: M.Sc. (2nd semester)** **Subject: Measure and Integration Theory (24MAT202DS02)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of subject, Set Function, elementary operation on set
Week 2	Measurable sets, Fundamental properties of measurable sets, Lebesgue measure
Week 3	Algebra of measurable sets, Borel Sets, equivalent formulation of measurable sets, Closed sets,
Week 4	Non measurable sets, measurable function, properties of function, Approximation of measurable function
Week 5	Convergence in measure function, short coming of Riemann integral, Test
Week 6	Lebesgue integral, bounded convergence theorem, fetal lemma, vitali convergence theorem
Week 7	Differentiation of monotonic function, function of bounded variation, test, presentation
Week 8	Test, doubt class, difference of indefinite integral, presentation, absolute continuous function
Week 9	Properties of function, theorem, presentation
Week 10	Comparison of Riemann and a Lebesgue integral
Week 11	Numerical problems, doubt class
Week 12	**MOCK TEST**
Week 13	Test, doubt class
Week 14	Presentation, doubt class, test
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Nupur Srivastava **Class And Section: M.Sc. (4th semester)** **Subject: Graph Theory(17MM24SC2)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of subject and syllabus, Definition and types of graphs, Walk
Week 2	Paths and circuit, Problems on topic, Connected graph
Week 3	Disconnect graph, Application of graph, operation on graph
Week 4	Graph representation, Isomorphism of graph, revision

Week 5	Elureian path, Hamilton path,
Week 6	Shortest path in weighted graph, test, Travelling sales man problems, planner graph
Week 7	Problems on topic, revision, Presentation
Week 8	Detection of planarity, Krakowski theorem, graph coloring
Week 9	Problems on topic, directed graph, tree
Week 10	Tree terminology, Rooted labelled trees, revision
Week 11	Prefix code, revision, presentation, Spanning tree, Cut set
Week 12	**MOCK TEST**
Week 13	Binary search tree, Tree traversal, doubt class, Sorting method
Week 14	Spanning trees, assignment discussion,
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Ms.Garima Mehta **Class And Section:B.Sc (MDC Statistics) 2nd Semester** **Subject:Statistics in Everyday Life** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Data and Types of data ,Scales of Measurement.
Week 2	Discrete and Continuous Random variables.
Week 3	Mathematical Expectations and Variance , Skewness and Kurtosis.
Week 4	Discrete Probability Distribution : Bernoulli, Binomial.
Week 5	Discrete Probability Distribution : Poisson, Geometric
Week 6	Discrete Probability Distribution : Negative Binomial ,Hyper -Geometric Distribution
Week 7	Continuous Probability Distribution:Uniform, Normal .
Week 8	Continuous Probability Distribution: Exponential,Rayleigh .
Week 9	Continuous Probability Distribution: Weibull ,Laplace .
Week 10	Test of Hypothesis: Concept of Hypothesis,Degree of freedom, Level of Significance.
Week 11	Critical Region, Types of errors, One sample tests for Mean ,Variance and Population Proportion.
Week 12	**MOCK TEST**

Week 13	Paired t -test, Two Independent Sample test for Means, Variances and Proportions.
Week 14	Correlation Test and Chi -square test.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Ms.Garima Mehta **Class And Section:B.Sc (MDC Statistics) 2nd Semester** **Subject:Statistics in Everyday Life** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Data and Types of data ,Scales of Measurement.
Week 2	Discrete and Continuous Random variables.
Week 3	Mathematical Expectations and Variance , Skewness and Kurtosis.
Week 4	Discrete Probability Distribution : Bernoulli, Binomial.
Week 5	Discrete Probability Distribution : Poisson, Geometric
Week 6	Discrete Probability Distribution : Negative Binomial ,Hyper -Geometric Distribution
Week 7	Continuous Probability Distribution:Uniform, Normal .
Week 8	Continuous Probability Distribution: Exponential,Rayleigh .
Week 9	Continuous Probability Distribution: Weibull ,Laplace .
Week 10	Test of Hypothesis: Concept of Hypothesis,Degree of freedom, Level of Significance.
Week 11	Critical Region, Types of errors, One sample tests for Mean ,Variance and Population Proportion.
Week 12	**MOCK TEST**
Week 13	Paired t -test, Two Independent Sample test for Means, Variances and Proportions.
Week 14	Correlation Test and Chi -square test.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Ms.Garima Mehta **Class And Section:Minor(Mathematics) 2nd Semester** **Subject:Business Mathematics** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Linear Progamming-Formulation of LPP: Graphical method of solution.
Week 2	Problems relating to two variables including the case of mixed constraints.
Week 3	Cases having no solution ,multiple solution , unbounded solution and redundant solution.
Week 4	Simplex Method -Solution of problem upto three variables , including cases of mixed constraints.
Week 5	Duality and its applications.
Week 6	Transportation problems.
Week 7	Simple interest and its applications .
Week 8	Compound interest :Certain different types of interest rates.
Week 9	Compound interest :Concept of present value and amount of sum.
Week 10	Annuities ;Types of annuities ,Present value and amount of annuity.
Week 11	Annuities: Case of continuous compounding.
Week 12	**MOCK TEST**
Week 13	Annuities:Valuation of simple loans and debentures.
Week 14	Annuities :Problem relation to sinking funds.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Ms.Garima Mehta **Class And Section:B.Sc (Physical Science) 2nd Sem** **Subject:Calculus** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Limits and Continuity,Discontinuity and its types.
Week 2	Differentiablity of the function, Successive differentiation, Lebnitz rule and its applications.
Week 3	L'Hospital's rule : Indeterminate form, Taylor's theorm with Langrange's forms of remainder.
Week 4	Taylor's theorm with Cauchy's forms of remainder , Maclaurin's and Taylor's series expansions.
Week 5	Tangent and Normal, Asymptotes of curves in Cartesian and Polar coordinates,Curvature.

Week 6	Radius of curvature for Cartesian curves, parametric ,polar and pedal form of curves.
Week 7	Circle of Curvature , Chord of Curvature, Concavity, Convexity and Inflexion points.
Week 8	Tracing of curves in Cartesian coordinates of standard curves (Cubic curves, Semicubical Parabola ,Folium of Descartes,Cardioid , Lemniscate of Bernoulli , Astroid , Rose curve, Logarithmic Spiral, Lpsispiral, Cycloid,Catenary).
Week 9	Tracing of curves in Parametric coordinates of standard curves (Cubic curves, Semicubical Parabola ,Folium of Descartes,Cardioid , Lemniscate of Bernoulli , Astroid , Rose curve, Logarithmic Spiral, Lpsispiral, Cycloid,Catenary).
Week 10	Tracing of curves in Polar coordinates of standard curves (Cubic curves, Semicubical Parabola ,Folium of Descartes,Cardioid , Lemniscate of Bernoulli , Astroid , Rose curve, Logarithmic Spiral, Lpsispiral, Cycloid,Catenary).
Week 11	Function of Several variables, Limits and Continuity.
Week 12	**MOCK TEST**
Week 13	Partial Differentiation and Euler's theorm on homogenous functions , Chain rule.
Week 14	Directional Derivatives,Gradient vector and tangent plane.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Sonia Bisht **Class And Section: B.Sc. Physical Science 2nd Semester** **Subject: Office Automation (MDC) Computer** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	**Unit – I** MS-Windows: Operating system-Definition & functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar
Week 2	Activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders, Control panel – display properties
Week 3	Adding and removing software and hardware, setting date and time, screensaver and appearance. Using windows accessories, **ASSIGNMENT-I & TEST**
Week 4	**Unit – II** Documentation Using MS-Word: Introduction to word processing interface, Toolbars Creating & Editing Document, Formatting Document
Week 5	Finding and replacing text, Format painter, Header and footer, Drop cap, Auto-text, Autocorrect, Spelling and Grammar Tool Document Dictionary,
Week 6	Page Formatting, Bookmark, Previewing and printing document, Advance Features of MS-Word-Mail Merge, Macros and Tables **ASSIGNMENT-II & TEST**
Week 7	**Unit – III** Electronic Spread Sheet using MS-Excel: Introduction to MS-Excel, Cell, cell address, Creating & Editing Worksheet, Formatting and Essential Operations

Week 8	Moving and copying data in excel, Header and footer, Formulas and Functions, Charts, Cell referencing, Page setup, Macros, Advance features of MS-Excel-Pivot table & Pivot Chart,
Week 9	Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Validation, What if analysis with Goal Seek.
Week 10	Filtering, Validation, What if analysis with Goal Seek. **ASSIGNMENT-III & TEST**
Week 11	**Unit – IV** Presentation using MS-PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides,
Week 12	**MOCK TEST**
Week 13	Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, **REVISION**
Week 14	Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Manisha **Class And Section: M.Sc. Chemistry** **Subject: Digital and Technological Solutions**	
Week 1	Introduction & Evolution of Digital Systems: Role & Significance of Digital Technology, Information and Communication Technology (ICT) & Tools
Week 2	Computer system and its working , software and its types
Week 3	Operating systems: Types and Functions, Problem solving: Algorithms and Flowcharts
Week 4	Communication Systems: Principles, model & Transmission Media, Computer Networks and internet: Concepts & Applications
Week 5	www, web Browsers, Search Engines, Messaging, Email, Social Networking, Computer based information system: Significance & Challenges
Week 6	Digital India &e-Governance: Initiatives, Infrastructure, Services and Empowerment, digital financial tools: Unified payment interface
Week 7	Unified Payment Interface, Aadhar enabled Payment System, USSD, Credit/debit cards, e-wallets, Internet banking
Week 8	NEFT/RTGS and IMPS, OnlineBill Payment and POS.Cyber Security:Threats,significance, Challenges, Precautions
Week 9	Test Precautions, safety Measures and Tools,Emerging Technologiesand their applications: Overview of Artificial intelligence
Week 10	Machine Learning: Big Data, Data Science and Big Data Analytics; Internet of Things(IoT)
Week 11	Industrial Internet of Things (IIoT), Robotics and 3D Printig

Week 12	**MOCK TEST**
Week 13	Block chain Technology Test
Week 14	Quantum Computing; Cloud computing and its service models
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Rajni
Class And Section: M.Sc. Chemistry II Semester
Subject: Organic Spectroscopy and Advanced Organic Chemistry (24CHE202DS03)

Week 1	Ultraviolet and Visible Spectroscopy: Principle, electronic energy levels and transitions, chromophores and auxochromes, bathochromic and hypsochromic shift, hypochromic and hyperchromic effect.
Week 2	Infrared Spectroscopy: Principle, functional group and fingerprint regions, absorption of infrared radiation and molecular vibrations (stretching and bending), fundamental vibrations and overtones. NMR Spectroscopy: Spin active nuclei, chemical shift, shielding and deshielding, internal standards
Week 3	NMR Spectroscopy: spin spin coupling, equivalent and non-equivalent protons, effect of changing solvents and hydrogen bonding on chemical shifts, anisotropic effect. Applications of UV, IR, and NMR spectra in the structural elucidation of organic compounds. TEST
Week 4	Aliphatic Nucleophilic Substitution: SN1, SN2, mixed SN1 and SN2, SNi, SN1', SN2', SNi' and SET mechanisms. Effects of substrate structure, attacking nucleophile, leaving group and reaction medium on reactivity. Neighbouring group mechanism, neighbouring group participation by σ- and π-bonds, anchimeric assistance. Ambident nucleophiles, regioselectivity and chemoselectivity. And Assignment.
Week 5	Aromatic Nucleophilic Substitution: ArSN1, ArSN2, Benzyne and SRN1 mechanisms. Effect of substrate structure, leaving group and attacking nucleophile on reactivity. Von Richter and Smiles rearrangements.
Week 6	Aliphatic Electrophilic Substitution: SE1, SE2 and SEi mechanism. Effect of substrates, leaving group and solvent polarity on the reactivity. Aromatic Electrophilic Substitution: Reactivity in substrates and electrophiles, Vilsmeier reaction, Gattermann-Koch reaction.
Week 7	Pericyclic Reactions: Molecular orbital symmetry, Frontier orbitals of ethylene, 1,3-butadiene, 1,3,5hexatriene and allyl system. Classification of pericyclic reactions, Woodward Hoffmann correlation diagrams. TEST
Week 8	Electrocyclic reactions - conrotatory and disrotatory motions, 4n, 4n+2, and allyl systems. Cycloadditions - antarafacial and suprafacial additions, 4n and 4n+2 systems.
Week 9	Sigmatropic rearrangements - suprafacial and antarafacial shifts of H , sigmatropic shifts involving carbon moieties, 3,3- and 5,5sigmatropic rearrangements, Claisen and Cope rearrangements.
Week 10	Addition to Carbon-Hetero Multiple Bonds: Mechanism of metal hydride reduction of saturated and unsaturated carbonyl compounds.Addition of Grignard reagents, organozinc and organolithium reagents to carbonyl and unsaturated carbonyl compounds, Wittig reaction. And Assignment.
Week 11	Mechanism of condensation reactions involving enolates: Aldol, Knoevenagel, Claisen, Mannich reaction.

Week 12	**MOCK TEST**
Week 13	Mechanism of condensation reactions involving enolates:, Benzoin, Perkin and Stobbe reactions. Hydrolysis of esters and amides, ammonolysis of esters.
Week 14	Test, Revision and Doubts.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Rajni **Class And Section: B.Sc. Biotech, BCA, B.Sc. Home Science II Semester** **Subject: Chemistry of Metals & Non-Metals, Hydrocarbons and Solutions (24CHE402MI01)**	
Week 1	Metal and Non-Metals: Occurrence of elements in nature, physical and chemical properties of metals and non-metals, minerals and Ores. metallurgical processes (benefaction, roasting, calcination and reduction of metal oxides processes), refining of metals, metallurgy of Fe, Zn, Al and Cu.
Week 2	metallurgical processes (benefaction, roasting, calcination and reduction of metal oxides processes),
Week 3	Refining of metals and Metallurgy of Fe, Zn, Al and Cu. Alkanes: General methods of preparation and Reactions: free radical substitution. Assignment
Week 4	Hydrocarbons: Alkenes: General methods of preparation and Reactions: cis-addition (alk. KMnO4) and trans-addition (bromine) And TEST
Week 5	Addition of HX (Markownikoff's and anti-Markownikoff's addition), hydration, ozonolysis, oxymecuration-demercuration, hydroboration oxidation. Alkynes: General methods of preparation
Week 6	Alkynes: Reactions: formation of metal acetylides and acidity of alkynes, addition of bromine and alkaline KMnO4, ozonolysis and oxidation with hot alk. KMnO4, hydration to form carbonyl compounds.
Week 7	Aromatic Hydrocarbons: Structure of benzene (Kekule, hybrid and resonance), preparation of benzene. Reactions: electrophilic substitution reactions in benzene And Assignment
Week 8	Electrophilic substitution reactions in benzene citing examples of nitration, halogenation, sulphonation and Friedel-Craft's alkylation
Week 9	Friedel-Craft's acylation with special emphasis on carbocationic rearrangement, side chain oxidation of alkyl benzene. And TEST

Week 10	Solution: Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law
Week 11	Colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression in freezing point
Week 12	**MOCK TEST**
Week 13	Colligative properties : osmotic pressure, Determination of molecular masses using Colligative properties, abnormal molecular mass, Van't Hoff factor.
Week 14	Test , Revision and Doubts
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Manisha
Class And Section: M.Sc. Chemistry
Subject: Physical Spectroscopy and Advanced Physical Chemistry (24CHE202DS02)

Week 1	Introduction to spectroscopy: Electromagnetic radiations, interaction of electromagnetic radiation with matter, regions of spectrum , width and intensity of spectral transitions
Week 2	Resolving power, transition probability, Rotational spectra: Rotational spectra of diatomic molecules (rigid rotator) Test Spectrum of non –rigid rotator, effect of isotopic substitution, rotational spectra of linear and asymmetric top polyatomic molecules
Week 3	Vibrational and Vibrational- Rotational Spectra : Vibrating diatomic molecule(simple harmonic vibrator),anharmonicity, diatomic vibrating rotator,interaction of rotations and vibrations, vibrationalspectra of polyatomic molecules, analysis by infrared technique
Week 4	Test Electronics Spectra: Electronic spectra of diatomic molecules,vibrational course structure and rotational fine structure of electronic band, Frank-Condon principle(intensity of vibrational-electronic band, dissociation energy), Fortrat diagram
Week 5	Photochemistry: Basic concepts of photochemistry, rate constant & life time of excited electronic states of atoms and molecules, charge transfer transitions test
Week 6	Frank-Condon principle, emission spectra, environmenteffect on aabsorption and emission spectra, Wigner’s spin conservation rule, Modes of decay of excited states, quenching of fluorescence, delayed fluorescence, kinetics of collisional quenching
Week 7	Test Stern- Volmer equation, Excimer and Exciplex formation and delay,Techniques for the study of transient species in photochemical reactions, Application of Lasers in photochemical kinetics
Week 8	Electro-Analytical & Potentiometric Methods: Polarization Phenomenon and its theories, effect ofconcentration on cell potential,Concept of liquid junction potential

Week 9	Test Reference electrodes (Calomel, Ag/AgCl, Tl/TiCl),Metallic redox indicator electrode: Membrane and ion-selective electrodes, electricalproperties of the membrane, glass electrode with special reference to H^+,Na^+,K^+ ions, operation of solid membrane electrode in determination of some toxic metals and some anions(F^-,Cl^-,Br^-, I^-,NO_3^-)
Week 10	Symmetry and Group Theory in Chemistry: Symetry elements and symmetry operation
Week 11	Point group and its properties, group multiplication table, Schonflies symbol, representation of groups by matrices (representation for Cn, Cnv, Cnh, Cs, Dnh etc groups to be worked out explicityand
Week 12	**MOCK TEST**
Week 13	Point group of Following molecules: H_2O,NH_3,CH_4,SF_6,$CHCl_3$,BF_3,C_6H_6,C_5H_5,NSF_3,C_2H_2,HCl,HCN,CO_2 etc. Irreducible representation of groups
Week 14	The Great orthogonality theorem (without proof) and its importance,Character tables and its applications in specrroscopy
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Manisha **Class And Section: B.Sc. Chemistry(Medical) 4th Semester** **Subject: Physical Chemistry (CH-402)**	
Week 1	Second law of thermodynamics , need for the law, different statements of the law, Carnot's cycle and its efficiency
Week 2	Carnot's theorem, Thermodynamic scale of temperature, Concept of entropy-Entropy as a state function, entropy as a function of V and T
Week 3	entropy as a function of P and T , entropy change in physical change, entropy as a criteria of spontaneity and equilibrium , Entropy change in ideal gases and mixing of gases
Week 4	Test Third law of thermodynamics: Nernst heat theorem, Statement of concept of residual entropy
Week 5	evaluation of absolute entropy from heat capacity data, Gibbs and Helmholtz function (G) and Helmholtz function (A) as thermodynamic Quantities
Week 6	A and G as criteria for thermodynamics equilibrium and spontaneity, their advantage over entropy change.
Week 7	Test Variation of G and A with P,V and T, Electrolytic and Galvanic cells- reversible and irreversible cells
Week 8	Conventional representation of electrochemical cells, EMF of cells and its measurement, Weston standard cell, Activity and activity coefficients

Week 9	Calculation of thermodynamic quantities of cell reaction (Delta G, Delta H and K), types of reversible electrodes: metal- metal ion, gas electrode, metal-insoluble salt-anion and redox electrodes
Week 10	Electrode reactions, Nernst equations, derivation of cell EMF and single electrode potential, Standard Hydrogen electrode, reference electrodes, standard electrodes potential, sign conventions, electrochemical series and its applications
Week 11	Concentration cells with and without transference, Liquid junction potential
Week 12	**MOCK TEST**
Week 13	Application of EMF measurement i.e. valancy of ions, solubilty product, activity coefficient, potentiometric titration (acid-base and redox)
Week 14	Determination of pH using Hydrogen electrode, Quinhydrone electrode and glass electrode by potentiometric methods
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Manisha
Class And Section: B.Sc.(Life Science) 2nd Semester
Subject: Digital and Technological Solutions (23CSAX01VA01)

Week 1	Introduction & Evolution of Digital Systems: Role & Significance of Digital Technology, Information and Communication Technology (ICT) & Tools
Week 2	Computer system and its working , software and its types
Week 3	Operating systems: Types and Functions, Problem solving: Algorithms and Flowcharts
Week 4	Communication Systems: Principles, model & Transmission Media, Computer Networks and internet: Concepts & Applications
Week 5	www, web Browsers, Search Engines, Messaging, Email, Social Networking, Computer based information system: Significance & Challenges
Week 6	Digital India &e-Governance: Initiatives, Infrastructure, Services and Empowerment, digital financial tools: Unified payment interface
Week 7	Unified Payment Interface, Aadhar enabled Payment System, USSD, Credit/debit cards, e-wallets, Internet banking
Week 8	NEFT/RTGS and IMPS, OnlineBill Payment and POS.Cyber Security:Threats,significance, Challenges, Precautions
Week 9	Test Precautions, safety Measures and Tools,Emerging Technologiesand their applications: Overview of Artificial intelligence
Week 10	Machine Learning: Big Data, Data Science and Big Data Analytics; Internet of Things(IoT)
Week 11	Industrial Internet of Things (IIoT), Robotics and 3D Printig
Week 12	**MOCK TEST**
Week 13	Block chain Technology Test

Week 14	Quantum Computing; Cloud computing and its service models
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Manisha
Class And Section: B.Sc. (Home Science) IInd Semester
Subject: Digital and Technological Solutions (23CSAX01VA01)

Week 1	Introduction & Evolution of Digital Systems: Role & Significance of Digital Technology, Information and Communication Technology (ICT) & Tools
Week 2	Computer system and its working , software and its types
Week 3	Operating systems: Types and Functions, Problem solving: Algorithms and Flowcharts
Week 4	Communication Systems: Principles, model & Transmission Media, Computer Networks and internet: Concepts & Applications
Week 5	www, web Browsers, Search Engines, Messaging, Email, Social Networking, Computer based information system: Significance & Challenges
Week 6	Digital India &e-Governance: Initiatives, Infrastructure, Services and Empowerment, digital financial tools: Unified payment interface
Week 7	Unified Payment Interface, Aadhar enabled Payment System, USSD, Credit/debit cards, e-wallets, Internet banking
Week 8	NEFT/RTGS and IMPS, OnlineBill Payment and POS.Cyber Security:Threats,significance, Challenges, Precautions
Week 9	Test Precautions, safety Measures and Tools,Emerging Technologiesand their applications: Overview of Artificial intelligence
Week 10	Machine Learning: Big Data, Data Science and Big Data Analytics; Internet of Things(IoT)
Week 11	Industrial Internet of Things (IIoT), Robotics and 3D Printig
Week 12	**MOCK TEST**
Week 13	Block chain Technology Test
Week 14	Quantum Computing; Cloud computing and its service models
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: :Ms.Pooja Khatana **Class And Section: M.Sc.(F) Chemistry** **Subject: Inorganic Special-V (Electro Analytical Chemistry), 17CHE24GA2**	
Week 1	Introduction of Electroanalytical Chemistry, Electrons at and across interfaces Electro-Chemical And Chemical Reactions
Week 2	Residual Current, Migration Current, Diffusion Current, Limiting Current Saturated Calomel Electrode(SCE)
Week 3	Dropping Mercury Electrode(DME), Ilkovic Equation, Koutecky Equation for Diffusion Current, Polarographic Waves TEST & ASSIGNMENT
Week 4	Half Wave Potentials, Oxygen Interference, Function Of Supporting Electrolyte, maxima
Week 5	Determination of stability constants of complexes (reversible systems only) by D.C.Polarography, Catalytic hydrogen wave, Principles of Amperometric titrations
Week 6	Types of titration curves, apparatus and techniques, Hanging mercury drop electrode, Rotating droping mercury electrode , Platinum Electrodes(RPE), Gold electrode
Week 7	Carbon paste electrode, Glassy carbon electrode, Graphite electrode TEST & ASSIGNMENT
Week 8	A.C. Polarography, D.C. Polarography, Super imposed a.c. Polarography, Voltametry in quiet and stirred solution with electrode other than mercury, Square-wave polarography
Week 9	Normal pulse polarography, Differential pulse polarography, Chronopotentiometry, Coulometry
Week 10	Stripping voltammetry, Theory of anodic stripping voltammetry, Concentration process, Rest period, Stripping process
Week 11	Cathodic stripping voltammetry, Anodic and cathodic deposition TEST & ASSIGNMENT
Week 12	**MOCK TEST**
Week 13	Ion selective electrodes, Principle of ion selective electrodes, Types of ion selective electrode, Liquid membrane electrode, Gas membrane electrode, Solid state electrode, Gas sensing electrode
Week 14	Ion selective electrodes, Principle of ion selective electrodes, Types of ion selective electrode, Liquid membrane electrode, Gas membrane electrode, Solid state electrode, Gas sensing electrode
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms.Pooja Khatana **Class And Section: B.Sc.(med) III year, VI Semester** **Subject: Inorganic Chemistry**	
Week 1	Organometalliv Chemistry(basics), Definition, Nomenclature, Classification of organometallic compounds
Week 2	Preparation, Properties and Bonding of Alkyls of Li, Al
Week 3	Preparation, Properties and Bonding of Alkyls of Hg, Sn
Week 4	A brief account of metal-ethylenic complexes
Week 5	Mononuclear carbonyls and the nature of bonding in metal carbonyls TEST & ASSIGNMENT
Week 6	Arrhenius concept of acid and base, Bronsted- lowry concept of acid and base, the Lux Flood concept of acid and base
Week 7	Solvent system concept of acid and base and lewis concept of acid and base
Week 8	Relative strength of acid and base, concept of hard and soft acids and bases
Week 9	Symbiosis, electronegativity and hardness and softness TEST & ASSIGNMENT
Week 10	Essentials and trace elements in biological processes, Nitrogen fixation
Week 11	Metalloporphyrins with special reference to haemoglobin and myoglobin, Biological role of alkali and alkaline earth metal ions with special reference to calcium
Week 12	**MOCK TEST**
Week 13	Preparation, properties, structures and uses of silicones
Week 14	Preparation, properties, structures and uses of Phosphazenes TEST & ASSIGNMENT
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Sonia Bisht **Class And Section: B.Sc. (Life Science) 2nd Semester ,Section-A & B** **Subject: Fundamental Chemistry-II** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	**Unit–I** Non-aqueous Solvents , Physical properties of a solvent, types of solvents and their general characteristics, solvent system concept, reactions in non-aqueous solvents with reference to liquid NH3 and liquid SO2.
Week 2	Hard and soft acids and bases (HSAB concept), applications of HSAB principle. Noble Gases Occurrence and uses, rationalization of inertness of noble gases, clathrates, preparation and properties, chemical properties of the noble gases.
Week 3	Chemistry of xenon: structure and bonding in xenon fluorides, oxides and oxyfluorides (XeF2, XeF4, XeF6, XeO3, XeO4, XeOF2, XeO2F2, XeOF4, XeF5+, XeF5-), nature of bonding in noble gas compounds (valence bond treatment and MO treatment for XeF2 and XeF4), molecular shapes of noble gas compounds (VSEPR theory) **ASSIGNMENT-I ,TEST**
Week 4	**Unit–II** Thermodynamics Brief discussion upto first law of thermodynamics, heat capacity, heat capacities at constant volume and pressure and their relationship. Joule's law, Joule–Thomson coefficient for ideal gases and real gases and inversion temperature
Week 5	Calculation of work and heat, dU & dH for the expansion of ideal gases and real gases under isothermal and adiabatic conditions for reversible and irreversible processes, enthalpy and internal energy change at constant P, V &T, Kirchhoff's equation. Second law of thermodynamics and its limitations, different statements of the law, Carnot's cycle and its efficiency, Carnot's theorem, thermodynamics scale of temperature.
Week 6	Enthalpy and internal energy change at constant P, V &T, Kirchhoff's equation. Second law of thermodynamics and its limitations, different statements of the law, Carnot's cycle and its efficiency, Carnot's theorem, **TEST**
Week 7	Concept of entropy– entropy as a state function ,entropy change in ideal gases, entropy as a function of V & T, entropy as a function of P & T, entropy as a function of P & V, entropy as a criterion of spontaneity and equilibrium.
Week 8	**Unit–III** Hydrocarbons Alkanes: Physical and chemical properties of alkanes, free radical substitutions, halogenation, concept of relative reactivity v/s selectivity, **ASSIGNMENT-II**
Week 9	Alkenes: Structure and isomerism, general methods of preparation, physical and chemical properties. Mechanism of E1, E2, E1cb reactions, Saytzeff and Hoffmann elimination, electrophilic addition (mechanism with suitable examples),
Week 10	Markownikoff rule, syn and anti-addition, addition of H2, X2 oxymercuration-demercuration, hydroboration- oxidation, ozonolysis, hydroxylation. Alkynes: General methods of preparation, reactions of alkynes: acidity, electrophilic and nucleophilic additions, hydration to form carbonyl compounds, alkylation of terminal alkynes, **TEST**
Week 11	**Unit–IV** Aromatic Hydrocarbons and Dienes Concept of aromaticity, Huckel's rule, aromatic character of arenes, cyclic carbocations and carbanions with suitable examples and heterocyclic compounds with suitable examples, electrophilic aromatic substitution: halogenation, nitration, sulphonation,
Week 12	**MOCK TEST**
Week 13	Friedel Crafts alkylation/ acylation with their mechanism, directing effects of groups in electrophilic substitution, **REVISION**

Week 14	Nomenclature and classification of dienes: isolated, conjugated and cumulated dienes. Structure of butadiene, chemical reactions- 1, 2 and 1, 4 additions (electrophilic and free radical mechanism), Diels – Alder reaction, **ASSIGNMENT-III**
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Sonia Bisht **Class And Section: B.Sc. Physical Science 2nd Semester** **Subject: Office Automation (MDC) Computer** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	**Unit – I** MS-Windows: Operating system-Definition & functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar
Week 2	Activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders, Control panel – display properties
Week 3	Adding and removing software and hardware, setting date and time, screensaver and appearance. Using windows accessories, **ASSIGNMENT-I & TEST**
Week 4	**Unit – II** Documentation Using MS-Word: Introduction to word processing interface, Toolbars Creating & Editing Document, Formatting Document
Week 5	Finding and replacing text, Format painter, Header and footer, Drop cap, Auto-text, Autocorrect, Spelling and Grammar Tool Document Dictionary,
Week 6	Page Formatting, Bookmark, Previewing and printing document, Advance Features of MS-Word-Mail Merge, Macros and Tables **ASSIGNMENT-II & TEST**
Week 7	**Unit – III** Electronic Spread Sheet using MS-Excel: Introduction to MS-Excel, Cell, cell address, Creating & Editing Worksheet, Formatting and Essential Operations
Week 8	Moving and copying data in excel, Header and footer, Formulas and Functions, Charts, Cell referencing, Page setup, Macros, Advance features of MS-Excel-Pivot table & Pivot Chart,
Week 9	Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Validation, What if analysis with Goal Seek.
Week 10	Filtering, Validation, What if analysis with Goal Seek. **ASSIGNMENT-III & TEST**
Week 11	**Unit – IV** Presentation using MS-PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides,
Week 12	**MOCK TEST**
Week 13	Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, **REVISION**
Week 14	Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Sonia Bisht **Class And Section: M.Sc. Chemistry 4th Semester** **Subject: Inorganic Special-VI (Medicinal Aspects of Inorganic Chemistry)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	**Section-A** Metals in Medicine: Biochemical bases of essential metal deficient diseases; Iron, copper and zinc deficiencies and their therapies, carcinogens
Week 2	Carcinostatic agents, zinc in tumour growth and inhibition, anticancer activity and mechanism of platinum complexes
Week 3	Anticancer activity of Rhodium, copper and Gold complexes, anti cancer activity of Selenium, antibacterial and antiviral properties of metal complexes, **ASSIGNMENT-I & TEST**
Week 4	Polyamino carboxylic acids and polyethylene amines as chelating drugs. **Section-B** Miscellaneous applications of Inorganic compounds as medicines: Drugs in hypo and hyper activity of thyroids
Week 5	Inorganic drugs in dental carries, clinical disorders of alkali and alkaline earth metals and their remedies, lithium drugs in psychiatry.
Week 6	Heavy metals in Biological systems: Toxicity of heavy metals – and their detoxification, role of Selenium in Biological systems with reference to its essentiality and toxicity
Week 7	Mechanism of metal ion induced toxicity, interaction between orally administered drugs and metal ions in gut, **ASSIGNMENT-II & TEST**
Week 8	**Section-C** Ligand Therapy: Ligand induced toxicity, interference with haemoglobin in oxygen transport system, intefererence with metallo-enzymes,
Week 9	Beneficial effects of ligand chelation; carcinogenic ligands, carcinostatic ligands, alkylating agents as anticancer drugs, Thiosemicarbazones as anticancer drugs
Week 10	Macrocyclic antibiotic ligands and prodable mechanism of the drug, antiviral activity of chelating agents, aspirin chelation , **TEST**
Week 11	Drugs where chelation and therapeutic activity are unrelated. **Section-D** Vitamins and their functions in general, recommended dietary allowances , deficiencies and supplementations
Week 12	**MOCK TEST**
Week 13	Dietary miners, calcium and vitamin D, antioxidants and their health effects, biomineralisation Radiopharmacology, nuclear medicines , **ASSIGNMENT-III**
Week 14	Radioiodine -1 31, technetium – 99m, gallium and indium scan, **REVISION**
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25 (EVEN SEMESTER)

Name of the Assistant Professor: Dr. Purnima Verma **Class And Section: M.sc Chemistry 2nd Sem** **Subject: Inorganic Chemistry** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	**UNIT-1** Electronic Absorption Spectroscopy: Energy levels in diatomic molecules, introduction to electronic transition, assignment of transitions, selection rules for EAS, p-d intermixing. Nuclear Magnetic Resonance: Quantum concept of NMR, larmor frequency, coupling constant, applications of spin-spin coupling in structure determination of inorganic compounds, population excess and types of relaxation,
Week 2	Standard references for inorganic compounds, calculation of rates from NMR spectrum, determination of order by NMR, double resonance technique for inorganic compounds like B2H6, Al(BH4)3 etc. Characterization of metal hydrides complexes (counting signals), inorganic applications of NMR like 1HNMR, 11B NMR, 19F NMR, 31P NMR (dynamic and frozen spectra), fluxional behaviour of inorganic molecules. Finger print regions of IR spectroscopy, Hooke's law & its applications for determination of stretching frequency.
Week 3	Application of infrared spectroscopy in the determination of inorganic compounds: Determination of coordination site, identification of cis and trans isomers, structure elucidation of covalent molecules, H-bonding etc. **TEST OF UNIT -1, ASSIGNMENT**
Week 4	**UNIT-II** Organometallic: 18-electron rule, counting methods and ligand contributions, haptoligands with hapticity from two to eight. Clusters: Multi-nuclear carbonyl clusters: Low nuclearity carbonyl clusters (LNCC), High nuclearity carbonyl clusters (HNCC),
Week 5	Clusters having interstitial atoms, electron counting schemes for high nuclearity clusters, polyhedral skeletal electron pair approach/Mingo's rules, structure and bonding in higher boranes, Wade's rules, carboranes,
Week 6	Applications of Wade's rules, zintl-ions, isolobal analogy, dinuclear clusters (metal clusters containing M-M multiple bonds). **TEST OF UNIT -II, ASSIGNMENT**
Week 7	**UNIT –III** Magnetic Properties of transition metal complexes: Elementary theory of magneto-chemistry, dia, para, ferro and antiferro magnetism, concept of magnetic susceptibility, methods for determination of magnetic susceptibility, Curie and Curie-Weiss law for temperature dependence of magnetic susceptibility,
Week 8	Temperature independent paramagnetic, calculation of magnetic moments of metal ions Cr3+, Co3+, Mn2+ and Fe2+, Linde factor, μJ and μeff, orbital contribution to the magnetic moment, quenching of magnetic moment by crystal-field,
Week 9	Application of magneto-chemistry in structure determination, magnetic exchange coupling and spin state crossover in coordination compounds. **TEST OF UNIT -III, ASSIGNMENT**
Week 10	Electronic Spectra of Transition Metal Complexes: Spectroscopic ground states, spin-orbit coupling in free metal ions for 3d- series of transition metals, ground state terms for transition metals/ions,
Week 11	Racah parameters and nephalauxetic effect, orgel diagrams (d1 to d10) and Tanabe-Sugano diagrams for transition metal complexes (d1&d2states), elementary concept of Dq, B and β parameters
Week 12	**MOCK TEST**

Week 13	effect of Jahn-Teller distortion on electronic spectra of 3d-series metal complexes, charge transfer spectra, electronic spectra of molecular addition compounds of iodine **TEST OF UNIT -III, ASSIGNMENT**
Week 14	**REVISION UNIT I & UNIT II**
Week 15	**REVISION UNIT III & UNIT IV**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25 (EVEN SEMESTER)

Name of the Assistant Professor: Dr. Purnima Verma **Class And Section: B.Sc NM 2nd Sem** **Subject: Value added (Digital Technology Tool)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	**UNIT-I** Introduction & Evolution of Digital Systems: Role & Significance of Digital Technology; Information and Communication Technology (ICT) & Tools;
Week 2	Computer System &its working, Software and its types. Operating Systems: Types and Functions. Problem Solving: Algorithms and Flowcharts **TEST UNIT-I & ASSIGNMENT**
Week 3	**UNIT-II** Communication Systems: Principles, Model & Transmission Media. Computer Networks & Internet: Concepts & Applications,
Week 4	WWW, Web Browsers, Search Engines, Messaging, Email, Social Networking. Computer Bosed information System: Significance & Types.
Week 5	E-commerce & Digital Marketing: Basic Concepts, Benefits & Challenges **TEST UNIT-II & ASSIGNMENT**
Week 6	**UNIT-III** Emerging Technologiesand their applications:Overview of Artificial Intelligence, Machine Learning,
Week 7	Deep Learning; Big Data, Data Science and Big Data Analytics; Internet of Things (IoT) and Industrial Internet of Things (IIoT),
Week 8	Robotics and 3D Printing; Blockchain Technology; Quantum Computing; Cloud computing and its service models.
Week 9	**TEST UNIT-III & ASSIGNMENT**
Week 10	**UNIT-IV** Digital India & e-Governance: Initiatives, Infrastructure, Services and Empowerment. Digital Financial Tools: Unified Payment Interface,
Week 11	AadharEnabled Payment System, USSD, Credit / Debit Cards, e-Wallets, Internet Banking, NEFT/RTGS and IMPS, Online Bill Payment and POS.
Week 12	**MOCK TEST**
Week 13	Cyber Security: Threats, Significance, Challenges, Precautions, Safety Measures and Tools.
Week 14	**REVISION UNIT I & UNIT II**
Week 15	**REVISION UNIT III & UNIT IV**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN, FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25 (EVEN SEMESTER)

Name of the Assistant Professor: Dr. Annu Kalra (UNIT 1 & II) **Dr. Purnima Verma (UNIT III &IV)** **Class And Section: MA ECONOMICS 2nd Sem** **Subject: RESEARCH METHODOLOGY** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	**UNIT-1** Introduction to research in social sciences: Objectives & Significance
Week 2	Limitations of Research in Social science, The interplay between theory & research , Types of Research
Week 3	Ethical consideration in social science research. **TEST & ASSIGNMENT (UNIT-1)**
Week 4	**UNIT-II** Review of literature: need & purpose for reviewing literature,
Week 5	Sources of literature: Hypothesis meaning , types & characteristics of a good hypothesis . sampling : census vs. sampling,
Week 6	Techniques & methods of sampling. Sampling & non- sampling errors **TEST & ASSIGNMENT (UNIT-II)**
Week 7	**UNIT-III** Data collection: meaning, types, sources and methods of collecting data.
Week 8	Paper writing: introduction, types of manuscript, general information for authors,
Week 9	Selection of journal, Submission of manuscript, parts of paper. **TEST UNIT-III & ASSIGNMENT**
Week 10	**UNIT-IV** Data processing: editing, coding, classification tabulation and analysis of data. Report writing: meaning,
Week 11	Purpose and types of reports: steps, format and final presentation of research report.
Week 12	**MOCK TEST**
Week 13	Documentation: footnotes, references and bibliography.
Week 14	**REVISION UNIT I & UNIT II**
Week 15	**REVISION UNIT III & UNIT IV**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Priyanka Bhatia **Class And Section: B.Sc. NM 6th Sem** **Subject: Organic Chemistry** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	**Heterocyclic Compounds-I** Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine..
Week 2	Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution
Week 3	Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole
Week 4	**Test** **Heterocyclic Compounds-II** Introduction to condensed five and six- membered heterocycles. Prepration and reactions of indole, quinoline and isoquinoline with special reference to Fisher indole synthesis
Week 5	Skraup synthesis and Bischler-Napieralski synthesis. Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline **Organosulphur Compounds** Nomenclature, structural features
Week 6	Methods of formation and chemical reactions of thiols, thioethers, sulphonic acids, sulphonamides and sulphaguanidine. Synthetic detergents alkyl and aryl sulphonates. **Test**
Week 7	**Organic Synthesis via Enolates** Acidity of -hydrogens, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.
Week 8	**Synthetic Polymers** Addition or chain-growth polymerization. Condensat ion or step growth polymerization. Polyeste rs ,polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy re sins and polyurethanes. Natural and synthetic rubbers.
Week 9	Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers. **Assignment**
Week 10	Amino Acids, Peptides& Proteins Classification, of amino acids. Acid-base behavior, isoelectric point and electrophoresis.
Week 11	Preparation of -amino acids.Structure and nomenclature of peptides and proteins. Classification of proteins
Week 12	**MOCK TEST**
Week 13	Peptide structure determination, end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid– phase peptide synthesis. Structures of peptides and proteins: Primary & Secondary structure
Week 14	**Doubt Class and Test**
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms.Pooja Khatana **Class And Section: B.Sc.(med) III year, VI Semester** **Subject: Inorganic Chemistry**	
Week 1	Organometalliv Chemistry(basics), Definition, Nomenclature, Classification of organometallic compounds
Week 2	Preparation, Properties and Bonding of Alkyls of Li, Al
Week 3	Preparation, Properties and Bonding of Alkyls of Hg, Sn
Week 4	A brief account of metal-ethylenic complexes
Week 5	Mononuclear carbonyls and the nature of bonding in metal carbonyls TEST & ASSIGNMENT
Week 6	Arrhenius concept of acid and base, Bronsted- lowry concept of acid and base, the Lux Flood concept of acid and base
Week 7	Solvent system concept of acid and base and lewis concept of acid and base
Week 8	Relative strength of acid and base, concept of hard and soft acids and bases
Week 9	Symbiosis, electronegativity and hardness and softness TEST & ASSIGNMENT
Week 10	Essentials and trace elements in biological processes, Nitrogen fixation
Week 11	Metalloporphyrins with special reference to haemoglobin and myoglobin, Biological role of alkali and alkaline earth metal ions with special reference to calcium
Week 12	**MOCK TEST**
Week 13	Preparation, properties, structures and uses of silicones
Week 14	Preparation, properties, structures and uses of Phosphazenes TEST & ASSIGNMENT
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Anita Yadav **Class And Section: B.Sc. Physical Science 2nd Sem** **Subject: Chemistry** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	**Unit 1**-Non-aqueous Solvents Physical properties of a solvent, types of solvents and their general characteristics, Solvent system concept, reactions in non-aqueous solvents with reference to liquid NH3 and liquid SO2. Hard and soft acids and bases (HSAB concept), applications of HSAB principle.
Week 2	Noble Gases Occurrence and uses, rationalization of inertness of noble gases, clathrates, preparation and properties, chemical properties of the noble gases
Week 3	, chemistry of xenon: structure and bonding in xenon fluorides, oxides and oxyfluorides (XeF2, XeF4, XeF6, XeO3, XeO4, XeOF2, XeO2F2, XeOF4, XeF5 + , XeF5 -), nature of bonding in noble gas compounds (valence bond treatment and MO treatment for XeF2 and XeF4), molecular shapes of noble gas compounds (VSEPR theory).
Week 4	**Unit 2**-Thermodynamics Brief discussion upto first law of thermodynamics, heat capacity, heat capacities at constant volume and pressure and their relationship. Joule's law, Joule–Thomson coefficient for ideal gases and real gases and inversion temperature,.
Week 5	calculation of work and heat, dU & dH for the expansion of ideal gases and real gases under isothermal and adiabatic conditions for reversible and irreversible processes, enthalpy and internal energy change at constant P, V &T, Kirchhoff's equation
Week 6	Second law of thermodynamics and its limitations, different statements of the law, Carnot's cycle and its efficiency, Carnot's theorem, entropy change in ideal gases, entropy as a function of V & T, entropy as a function of P & T, entropy as a function of P & V, entropy as a criterion of spontaneity and equilibrium.
Week 7	Doubt Class and Class Test
Week 8	**Unit 3 -** Hydrocarbons Alkanes: Physical and chemical properties of alkanes, free radical substitutions, halogenation, concept of relative reactivity v/s selectivity.
Week 9	Alkenes: Structure and isomerism, general methods of preparation, physical and chemical properties. Mechanism of E1, E2, E1cb reactions, Saytzeff and Hoffmann elimination, electrophilic addition (mechanism with suitable examples), Markownikoff rule, syn and anti-addition, addition of H2, X2 oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, hydroxylation.
Week 10	Alkynes: General methods of preparation, reactions of alkynes: acidity, electrophilic and nucleophilic additions, hydration to form carbonyl compounds, alkylation of terminal alkynes.
Week 11	**Unit 4-**Aromatic Hydrocarbons and Dienes Concept of aromaticity, Huckel's rule, aromatic character of arenes, cyclic carbocations and carbanions with suitable examples and heterocyclic compounds with suitable examples,
Week 12	**MOCK TEST**
Week 13	Electrophilic aromatic substitution: halogenation, nitration, sulphonation, Friedel Crafts alkylation/ acylation with their mechanism, directing effects of groups in electrophilic substitution,
Week 14	Nomenclature and classification of dienes: isolated, conjugated and cumulated dienes. Structure of butadiene, chemical reactions- 1, 2 and 1, 4 additions (electrophilic and free radical mechanism), Diels – Alder reaction.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Manisha
Class And Section: B.Sc. Chemistry Medical
Subject: Physical Chemistry

Week 1	Second law of thermodynamics , need for the law,different statements of the law,Carnot's cycle and its efficiency
Week 2	Carnot's theorem, Thermodynamic scale of temperature, Concept of entropy-Entropy as a state function, entropy as a function of V and T
Week 3	entropy as a function of P and T , entropy change in physical change, entropy as a criteria of spontaneity and equilibrium , Entropy change in ideal gases and mixing of gases
Week 4	Test Third law of thermodynamics: Nernst heat theorem, Statement of concept of residual entropy
Week 5	evaluation of absolute entropy from heat capacity data,Gibbs and Helmholtz function (G) and Helmholtz function (A) as thermodynamic Quantities
Week 6	A and G as criteria for thermodynamics equilibrium and spontaneity, their advantage over entropy change.
Week 7	Test Variation of G and A with P,V and T,Electrolytic and Galvanic cells- reversible and irreversible cells
Week 8	Conventional representation of electrochemical cells,EMF of cells amnd its measurement, Weston standard cell,Activity and activity coefficients
Week 9	Calculation of thermodynamic quantities of cell reaction (Delta G, DeltaH and K), types of reversible electrodes: metal-metai ion, gas electrode, metal-insoluble salt-anion and redox electrodes
Week 10	Electrode reactions, Nernst equations,derviation of cell EMF and single electrode potential, Standard Hydrogen electrode, reference electrodes,standard electrodes potential, sign conventions,electrochemical series and its applications
Week 11	Concentration cells with and without transference,Liquid junction potential
Week 12	**MOCK TEST**
Week 13	Application of EMF measurement i.e. valancy of ions, solubilty product, activity coefficient, potentiometric titration (acid-base and redox)
Week 14	Determination of pH using Hydrogen electrode, Quinhydrone electrode and glass electrode by potentiometric methods
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Sonia Bisht **Class And Section: B.Sc. (Life Science) 2nd Semester ,Section-A & B** **Subject: Fundamental Chemistry-II** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	**Unit–I** Non-aqueous Solvents , Physical properties of a solvent, types of solvents and their general characteristics, solvent system concept, reactions in non-aqueous solvents with reference to liquid NH3 and liquid SO2.
Week 2	Hard and soft acids and bases (HSAB concept), applications of HSAB principle. Noble Gases Occurrence and uses, rationalization of inertness of noble gases, clathrates, preparation and properties, chemical properties of the noble gases.
Week 3	Chemistry of xenon: structure and bonding in xenon fluorides, oxides and oxyfluorides (XeF2, XeF4, XeF6, XeO3, XeO4, XeOF2, XeO2F2, XeOF4, XeF5+, XeF5-), nature of bonding in noble gas compounds (valence bond treatment and MO treatment for XeF2 and XeF4), molecular shapes of noble gas compounds (VSEPR theory) **ASSIGNMENT-I ,TEST**
Week 4	**Unit–II** Thermodynamics Brief discussion upto first law of thermodynamics, heat capacity, heat capacities at constant volume and pressure and their relationship. Joule's law, Joule–Thomson coefficient for ideal gases and real gases and inversion temperature
Week 5	Calculation of work and heat, dU & dH for the expansion of ideal gases and real gases under isothermal and adiabatic conditions for reversible and irreversible processes, enthalpy and internal energy change at constant P, V &T, Kirchhoff's equation. Second law of thermodynamics and its limitations, different statements of the law, Carnot's cycle and its efficiency, Carnot's theorem, thermodynamics scale of temperature.
Week 6	Enthalpy and internal energy change at constant P, V &T, Kirchhoff's equation. Second law of thermodynamics and its limitations, different statements of the law, Carnot's cycle and its efficiency, Carnot's theorem, **TEST**
Week 7	Concept of entropy– entropy as a state function ,entropy change in ideal gases, entropy as a function of V & T, entropy as a function of P & T, entropy as a function of P & V, entropy as a criterion of spontaneity and equilibrium.
Week 8	**Unit–III** Hydrocarbons Alkanes: Physical and chemical properties of alkanes, free radical substitutions, halogenation, concept of relative reactivity v/s selectivity, **ASSIGNMENT-II**
Week 9	Alkenes: Structure and isomerism, general methods of preparation, physical and chemical properties. Mechanism of E1, E2, E1cb reactions, Saytzeff and Hoffmann elimination, electrophilic addition (mechanism with suitable examples),
Week 10	Markownikoff rule, syn and anti-addition, addition of H2, X2 oxymercuration-demercuration, hydroboration- oxidation, ozonolysis, hydroxylation. Alkynes: General methods of preparation, reactions of alkynes: acidity, electrophilic and nucleophilic additions, hydration to form carbonyl compounds, alkylation of terminal alkynes, **TEST**
Week 11	**Unit–IV** Aromatic Hydrocarbons and Dienes Concept of aromaticity, Huckel's rule, aromatic character of arenes, cyclic carbocations and carbanions with suitable examples and heterocyclic compounds with suitable examples, electrophilic aromatic substitution: halogenation, nitration, sulphonation,

Week 12	**MOCK TEST**
Week 13	Friedel Crafts alkylation/ acylation with their mechanism, directing effects of groups in electrophilic substitution, **REVISION**
Week 14	Nomenclature and classification of dienes: isolated, conjugated and cumulated dienes. Structure of butadiene, chemical reactions- 1, 2 and 1, 4 additions (electrophilic and free radical mechanism), Diels – Alder reaction, **ASSIGNMENT-III**
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Anita Yadav **Class And Section: B.Sc. Chemistry Non-Medical 4th Semester** **Subject: Physical Chemistry**	
Week 1	Second law of thermodynamics , need for the law,different statements of the law,Carnot's cycle and its efficiency
Week 2	Carnot's theorem, Thermodynamic scale of temperature, Concept of entropy-Entropy as a state function, entropy as a function of V and T
Week 3	entropy as a function of P and T , entropy change in physical change, entropy as a criteria of spontaneity and equilibrium , Entropy change in ideal gases and mixing of gases
Week 4	Test Third law of thermodynamics: Nernst heat theorem, Statement of concept of residual entropy
Week 5	evaluation of absolute entropy from heat capacity data,Gibbs and Helmholtz function (G) and Helmholtz function (A) as thermodynamic Quantities
Week 6	A and G as criteria for thermodynamics equilibrium and spontaneity, their advantage over entropy change.
Week 7	Test Variation of G and A with P,V and T,Electrolytic and Galvanic cells- reversible and irreversible cells
Week 8	Conventional representation of electrochemical cells,EMF of cells amnd its measurement, Weston standard cell,Activity and activity coefficients
Week 9	Calculation of thermodynamic quantities of cell reaction (Delta G, DeltaH and K), types of reversible electrodes: metal-metai ion, gas electrode, metal-insoluble salt-anion and redox electrodes
Week 10	Electrode reactions, Nernst equations,derviation of cell EMF and single electrode potential, Standard Hydrogen electrode, reference electrodes,standard electrodes potential, sign conventions,electrochemical series and its applications

Week 11	Concentration cells with and without transference,Liquid junction potential
Week 12	**MOCK TEST**
Week 13	Application of EMF measurement i.e. valancy of ions, solubilty product, activity coefficient, potentiometric titration (acid-base and redox)
Week 14	Determination of pH using Hydrogen electrode, Quinhydrone electrode and glass electrode by potentiometric methods
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Meenu Dua **Class And Section: B.Sc. M 6th Sem** **Subject: Physical Chemistry**	
Week 1	**Electronic Spectrum Concept** of potential energy curves for bonding and antibonding molecular orbitals, qualitative description of selection rules and Franck- Condon principle.
Week 2	. Qualitative description of sigma and pie and n molecular orbital (MO) their energy level and respective transitions **Test**
Week 3	**Photochemistry** Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of photochemistry: Grotthus-Drapper law, Stark- Einstein law (law of photochemical equivalence)
Week 4	Jablonski diagram depiciting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, **Assignment**
Week 5	Non-radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions-energy transfer processes (simple examples).
Week 6	**Solutions**: Dilute Solutions and Colligative Properties Ideal and non-ideal solutions, methods of expressing concentrations of solutions, activity and activity coefficient. Dilute solution,Colligative properties, Raolut's law
Week 7	Relative lowering of vapour pressure, molelcular weight determination, Osmosis law of osmotic pressure and its measurement, determination of molecular weight from osmotic pressure.
Week 8	Elevation of boiling point and depression of freezing point, Thermodynamic derivation of relation between molecular weight and elevation in boiling point and depression in freezing point
Week 9	Experimental methods for determining various colligative properties. **Test**

Week 10	Abnormal molar mass, degree of dissociation and association of solutes **Assignment and Revision**
Week 11	**Phase Equillibrium** Statement and meaning of the terms – phase component and degree of freedom, thermodynamic derivation of Gibbs phase rule,
Week 12	**MOCK TEST**
Week 13	Phase equilibria of one component system –Example – water and Sulphur systems.
Week 14	Phase equilibria of two component systems solid-liquid equilibria, simple eutectic Example Pb-Ag system, desilverisation of lead **Test**
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Priyanka Bhatia **Class And Section: B.Sc. NM 4th Semester** **Subject: Inorganic Chemistry** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Chemistry of f – block elements Lanthanides Electronic structure, , , occurrence and isolation, lanthanide compounds.
Week 2	Oxidation states and ionic radii and lanthanide contraction, complex formation
Week 3	Occurrence and isolation, lanthanide compounds. Assignment
Week 4	Doubt Class and Test
Week 5	Actinides General features and chemistry of actinides, Comparison of properties of Lanthanides and Actinides and with trans ition elements .
Week 6	Chemistry of separation of Np, Pu and Am from U
Week 7	Comparison of properties of Lanthanides and Actinides and with trans ition elements .
Week 8	Test **Theory of Qualitative and Quantitative Inorganic Analysis-**I Chemistry of analysis of various acidic radicals,
Week 9	Chemistry of identification of acid radicals in typical combinations
Week 10	Chemistry of interference of acid radicals including their removal in the analysis of basic radicals.
Week 11	Chemistry of analysis of various groups of basic radicals, Theory of precipitation, co- precipitation, Post- precipitation, purification of precipitates.
Week 12	**MOCK TEST**

Week 13	Theory of precipitation, co- precipitation, Post- precipitation, purification of precipitates.
Week 14	Doubt Class and Test
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Nandini Sharma
Class And Section: B.Sc Non-Medical Second Year
Subject: Organic Chemistry

Week 1	Sec-A IR –introduction ,principle ,modes of vibrations and no. of fundamental vibrations
Week 2	Sec-A IR -Overtones,coupling bands, fingerprint region , fermi resonance,IR peaks and numericals Applications of IR as homework
Week 3	Revision and test-Submission and Discussion
Week 4	Assignment -Submission and discussion
Week 5	Sec-D aldehydes and ketones -introduction and methods of formation of aldehydes from alcohols, nomenclature ,types of oxidizing reagents
Week 6	Sec-D methods of formation of ketones ,their physical and chemical properties
Week 7	Sec-D Name reactions and their mechanism- knoevengel ,mannich, cannizaro, aldol condensation
Week 8	Sec-D Claisen Condensation, revision and assignment (Submission and discussion)
Week 9	Sec-D test (submission and discussion)
Week 10	Sec-C diazonium salts and nitro compounds -introduction, nomenclature,substitution reactions ,diazotization
Week 11	Sec-C-azo dye formation, some live examples discussion, coupling reaction and mechanism
Week 12	**MOCK TEST**
Week 13	Sec-B Amines –introduction ,basic nature ,physical and chemical properties, comparison of basicity

Week 14	Sec-B -completion and revision
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Meenu Dua **Class And Section: B.Sc. NM 6th Sem** **Subject: Physical Chemistry**	
Week 1	**Electronic Spectrum Concept** of potential energy curves for bonding and antibonding molecular orbitals, qualitative description of selection rules and Franck- Condon principle.
Week 2	. Qualitative description of sigma and pie and n molecular orbital (MO) their energy level and respective transitions **Test**
Week 3	**Photochemistry** Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of photochemistry: Grotthus-Drapper law, Stark- Einstein law (law of photochemical equivalence)
Week 4	Jablonski diagram depiciting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, **Assignment**
Week 5	Non-radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions-energy transfer processes (simple examples).
Week 6	**Solutions**: Dilute Solutions and Colligative Properties Ideal and non-ideal solutions, methods of expressing concentrations of solutions, activity and activity coefficient. Dilute solution,Colligative properties, Raolut's law
Week 7	Relative lowering of vapour pressure, molelcular weight determination, Osmosis law of osmotic pressure and its measurement, determination of molecular weight from osmotic pressure.
Week 8	Elevation of boiling point and depression of freezing point, Thermodynamic derivation of relation between molecular weight and elevation in boiling point and depression in freezing point
Week 9	Experimental methods for determining various colligative properties. **Test**
Week 10	Abnormal molar mass, degree of dissociation and association of solutes **Assignment and Revision**
Week 11	**Phase Equillibrium** Statement and meaning of the terms – phase component and degree of freedom, thermodynamic derivation of Gibbs phase rule,
Week 12	**MOCK TEST**

Week 13	Phase equilibria of one component system –Example – water and Sulphur systems.
Week 14	Phase equilibria of two component systems solid-liquid equilibria, simple eutectic Example Pb-Ag system, desilverisation of lead **Test**
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Nandini Sharma **Class And Section: B.Sc Medical Second Year** **Subject: Organic Chemistry**	
Week 1	Sec-A IR –introduction ,principle ,modes of vibrations and no. of fundamental vibrations
Week 2	Sec-A IR -Overtones,coupling bands, fingerprint region , fermi resonance,IR peaks and numericals Applications of IR as homework
Week 3	Revision and test-Submission and Discussion
Week 4	Assignment -Submission and discussion
Week 5	Sec-D aldehydes and ketones -introduction and methods of formation of aldehydes from alcohols, nomenclature ,types of oxidizing reagents
Week 6	Sec-D methods of formation of ketones ,their physical and chemical propertie
Week 7	Sec-D Name reactions and their mechanism- knoevengel ,mannich, cannizaro, aldol condensation
Week 8	Sec-D Claisen Condensation, revision and assignment (Submission and discussion)
Week 9	Sec-D test (submission and discussion)
Week 10	Sec-C diazonium salts and nitro compounds -introduction, nomenclature,substitution reactions ,diazotization
Week 11	Sec-C-azo dye formation, some live examples discussion, coupling reaction and mechanism
Week 12	**MOCK TEST**

Week 13	Sec-B Amines –introduction ,basic nature ,physical and chemical properties, comparison of basicity
Week 14	Sec-B -completion and revision
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Priyanka Bhatia **Class And Section: B.Sc. M 6th Sem** **Subject: Organic Chemistry** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	**Heterocyclic Compounds-I** Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine..
Week 2	Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution
Week 3	Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole
Week 4	**Test** **Heterocyclic Compounds-II** Introduction to condensed five and six- membered heterocycles. Prepration and reactions of indole, quinoline and isoquinoline with special reference to Fisher indole synthesis
Week 5	Skraup synthesis and Bischler-Napieralski synthesis. Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline **Organosulphur Compounds** Nomenclature, structural features
Week 6	Methods of formation and chemical reactions of thiols, thioethers, sulphonic acids, sulphonamides and sulphaguanidine. Synthetic detergents alkyl and aryl sulphonates. **Test**
Week 7	**Organic Synthesis via Enolates** Acidity of -hydrogens, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.
Week 8	**Synthetic Polymers** Addition or chain-growth polymerization. Condensat ion or step growth polymerization. Polyeste rs ,polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy re sins and polyurethanes. Natural and synthetic rubbers.

Week 9	Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers. **Assignment**
Week 10	Amino Acids, Peptides& Proteins Classification, of amino acids. Acid-base behavior, isoelectric point and electrophoresis.
Week 11	Preparation of -amino acids.Structure and nomenclature of peptides and proteins. Classification of proteins
Week 12	**MOCK TEST**
Week 13	Peptide structure determination, end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid– phase peptide synthesis. Structures of peptides and proteins: Primary & Secondary structure
Week 14	**Doubt Class and Test**
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

NameoftheAssistant Professor:Ms. Sonia **ClassAnd Section:B.Sc. 2nd year** **Subject:Sequence & Series** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Topology of real numbers
Week 2	Topology of real numbers & introduction of sequences
Week 3	Cauchy's first & second theorem ,Cauchy's sequence
Week 4	Cauchy's general principal of convergence, subsequences
Week 5	Infinite series convergence & divergence
Week 6	Infinite series continue Hyper harmonic series test
Week 7	D'Alembert's ratio test Raabes test, Logrithmic test
Week 8	De Morgan and Bertrand's test, cauchy's nth root test
Week 9	Cauchy's integrals test, Gauss test, cauchy's condensation test
Week 10	Class test Introduction of Alternating series
Week 11	Leibnitz's test ,absolute &conditional convergence
Week 12	**MOCK TEST**

Week 13	Arbitrary series,able's lemma,able's test, continue
Week 14	Convergence & absolute convergence
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

NameoftheAssistant Professor:Ms. Sonia **ClassAnd Section:B.Sc. Final year** **Subject:Real & Complex Analysis** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Jacobians
Week 2	Beta & Gamma Function
Week 3	Gamma Function Continue Introduction of Double & Triple integrals
Week 4	Double & Triple integrals
Week 5	Change of order of integration in double integrals Introduction of fourier series
Week 6	Properties of fourier series, fourier coefficients, drichlet's conditions, parseval's s identity
Week 7	Fourier series for even & odd functions, half range series, change of intervals
Week 8	Extended complex plan, Stereographic projection of complex numbers
Week 9	Continuity, differentiability of complex functions, analytic function
Week 10	Cauchy-Riemann equations, Harmonic functions
Week 11	Mapping by elementary functions: Translation, Rotation , Magnification & Inversion
Week 12	**MOCK TEST**
Week 13	Conformal Mapping, Mobius transformations, fixed point
Week 14	Cross Ratio, Inverse points & Critical Mappings
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

NameoftheAssistant Professor: Dr Pinki Rani **ClassAnd Section: B.Sc. 1st year (2nd sem)** **Subject: Computational Techniques in Physics** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction to programming using Python
Week 2	Identifiers and keywords, Literals, Strings and basic operators in Python
Week 3	Standard libraries in python, notion of class, object and method
Week 4	Creating Python programs using literal, numbers and string
Week 5	Expression, Input/ Output statements, defining statement in Python Class Test-1
Week 6	Control Structure (conditional statements, loop control statements, break, continue and pass, exit function)
Week 7	Mutable and immutable objects, Testing and debugging a program.
Week 8	Data types, Fortran variables, Formats, built in function, Class Test- 2
Week 9	executable and non executable statements, Control statements, Arithmetic If and logical if statement
Week 10	Flow charts, truncation error, character DATA management
Week 11	Numerical differentiation and integration methods (Forward and backward difference formula, Trapezoidal and simpson rule)
Week 12	**MOCK TEST**
Week 13	Curve Fitting, Linear regression, Polynomial regression, Newton interpolation formula
Week 14	Euler and RK methods, Radioactive Decay, Current in RC and IC circuits with DC source
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Vandana **Class And Section: M.sc mathematics (F)** **Subject: Classical mechanics** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of Moments and products of inertia, Angular momentum of a rigid body, Principal axes and principal moment of inertia of a rigid body
Week 2	Kinetic energy of a rigid body rotating about a fixed point, Momental ellipsoid and equimomental systems, Coplanar mass distributions

Week 3	General motion of a rigid body.Free & constrained systems, Constraints and their classification, Holonomic and non- holonomic system
Week 4	Degree of freedom and generalised coordinates, Virtual displacement and virtual work, Statement of principle of virtual work (PVW), Possible velocity and possible acceleration, Ideal constraints, General equation of dynamics for ideal constraints, Lagrange equations of the first kind. D' Alembert principle,
Week 5	Independent coordinates and generalized forces, Lagrange equations of the second kind, Generalized velocities and accelerations. Uniqueness of solution, Variation of total energy for conservative fields. Lagrange variable and Lagrangian function L(t, Qi, qi), Lagrange equations for potential forces, Generalized momenta pi.
Week 6	Doubt class Test Assignment
Week 7	Hamiltonian variable and Hamiltonian function, Donkin theorem, Ignorable coordinates, Hamilton canonical equations, Routh variables and Routh function R, Routh equations
Week 8	Poisson Brackets and their simple properties, Poisson identity, Jacobi – Poisson theorem. Hamilton action and Hamilton principle, Poincare – Carton integral invariant, Whittaker equations, Jacobi equations, Lagrangian action and the principle of least action.Doubt class.Test
Week 9	Canonical transformation, Necessary and sufficient condition for a canonical transformation, Univalent Canonical transformation, Free canonical transformation, Hamilton-Jacobi equation, Jacobi theorem
Week 10	Method of separation of variables in HJ equation, Lagrange brackets, Necessary and sufficient conditions of canonical character of a transformation in terms of Lagrange brackets, Jacobian matrix of a canonical transformation
Week 11	Conditions of canonicity of a transformation in terms of Poison brackets, Invariance of Poisson Brackets under canonical transformation
Week 12	**MOCK TEST**
Week 13	Doubt class
Week 14	Doubt class
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Vandana **Class And Section: M.sc mathematics (F)** **Subject: Classical mechanics** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of Moments and products of inertia, Angular momentum of a rigid body, Principal axes and principal moment of inertia of a rigid body

Week 2	Kinetic energy of a rigid body rotating about a fixed point, Momental ellipsoid and equimomental systems, Coplanar mass distributions
Week 3	General motion of a rigid body.Free & constrained systems, Constraints and their classification, Holonomic and non- holonomic system
Week 4	Degree of freedom and generalised coordinates, Virtual displacement and virtual work, Statement of principle of virtual work (PVW), Possible velocity and possible acceleration, Ideal constraints, General equation of dynamics for ideal constraints, Lagrange equations of the first kind. D' Alembert principle,
Week 5	Independent coordinates and generalized forces, Lagrange equations of the second kind, Generalized velocities and accelerations. Uniqueness of solution, Variation of total energy for conservative fields. Lagrange variable and Lagrangian function L(t, Qi, qi), Lagrange equations for potential forces, Generalized momenta pi.
Week 6	Doubt class Test Assignment
Week 7	Hamiltonian variable and Hamiltonian function, Donkin theorem, Ignorable coordinates, Hamilton canonical equations, Routh variables and Routh function R, Routh equations
Week 8	Poisson Brackets and their simple properties, Poisson identity, Jacobi – Poisson theorem. Hamilton action and Hamilton principle, Poincare – Carton integral invariant, Whittaker equations, Jacobi equations, Lagrangian action and the principle of least action.Doubt class.Test
Week 9	Canonical transformation, Necessary and sufficient condition for a canonical transformation, Univalent Canonical transformation, Free canonical transformation, Hamilton-Jacobi equation, Jacobi theorem
Week 10	Method of separation of variables in HJ equation, Lagrange brackets, Necessary and sufficient conditions of canonical character of a transformation in terms of Lagrange brackets, Jacobian matrix of a canonical transformation
Week 11	Conditions of canonicity of a transformation in terms of Poison brackets, Invariance of Poisson Brackets under canonical transformation
Week 12	**MOCK TEST**
Week 13	Doubt class
Week 14	Doubt class
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Vandana **Class And Section: M.sc mathematics (F)** **Subject: Classical mechanics** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of Moments and products of inertia, Angular momentum of a rigid body, Principal axes and principal moment of inertia of a rigid body
Week 2	Kinetic energy of a rigid body rotating about a fixed point, Momental ellipsoid and equimomental systems, Coplanar mass distributions
Week 3	General motion of a rigid body.Free & constrained systems, Constraints and their classification, Holonomic and non- holonomic system
Week 4	Degree of freedom and generalised coordinates, Virtual displacement and virtual work, Statement of principle of virtual work (PVW), Possible velocity and possible acceleration, Ideal constraints, General equation of dynamics for ideal constraints, Lagrange equations of the first kind. D' Alembert principle,
Week 5	Independent coordinates and generalized forces, Lagrange equations of the second kind, Generalized velocities and accelerations. Uniqueness of solution, Variation of total energy for conservative fields. Lagrange variable and Lagrangian function L(t, Qi, qi), Lagrange equations for potential forces, Generalized momenta pi.
Week 6	Doubt class Test Assignment
Week 7	Hamiltonian variable and Hamiltonian function, Donkin theorem, Ignorable coordinates, Hamilton canonical equations, Routh variables and Routh function R, Routh equations
Week 8	Poisson Brackets and their simple properties, Poisson identity, Jacobi – Poisson theorem. Hamilton action and Hamilton principle, Poincare – Carton integral invariant, Whittaker equations, Jacobi equations, Lagrangian action and the principle of least action.Doubt class.Test
Week 9	Canonical transformation, Necessary and sufficient condition for a canonical transformation, Univalent Canonical transformation, Free canonical transformation, Hamilton-Jacobi equation, Jacobi theorem
Week 10	Method of separation of variables in HJ equation, Lagrange brackets, Necessary and sufficient conditions of canonical character of a transformation in terms of Lagrange brackets, Jacobian matrix of a canonical transformation
Week 11	Conditions of canonicity of a transformation in terms of Poison brackets, Invariance of Poisson Brackets under canonical transformation
Week 12	**MOCK TEST**
Week 13	Doubt class
Week 14	Doubt class
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Vandana **Class And Section: B.sc 2nd yr.(12BSM 242)** **Subject: Special functions and integral transforms** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of Series solution of differential equations – Power series method, Definitions of Beta and Gamma functions. Bessel equation and its solution
Week 2	Bessel functions and their properties-Convergence, recurrence, Relations and generating functions, Orthogonality of Bessel functions
Week 3	Doubt class Test Assignment
Week 4	Legendre and Hermite differentials equations and their solutions: Legendre and Hermite functions and their properties
Week 5	Recurrence Relations and generating functions. Orhogonality of Legendre and Hermite polynomials
Week 6	Rodrigues' Formula for Legendre & Hermite Polynomials, Laplace Integral Representation of Legendre polynomial
Week 7	Laplace Transforms – Existence theorem for Laplace transforms, Linearity of the Laplace transforms, Shifting theorems, Laplace transforms of derivatives and integrals
Week 8	Differentiation and integration of Laplace transforms, Convolution theorem, Inverse Laplace transforms,convolution theorem Doubt class Test
Week 9	Inverse Laplace transforms of derivatives and integrals, solution of ordinary differential equations using Laplace transform.
Week 10	Fourier transforms: Linearity property, Shifting, Modulation, Convolution Theorem,Fourier Transform of Derivatives
Week 11	Relations between Fourier transform and Laplace□transform, Parseval's identity for Fourier transforms
Week 12	**MOCK TEST**
Week 13	Solution of differential Equations using Fourier Transforms
Week 14	Doubt class
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of theAssistant Professor: Dr Pinki Rani **ClassAnd Section: B.Sc. 6th sem** **Subject: Nuclear Physics** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of Nuclear Physics, Rutherford back Scattering
Week 2	Nuclear mass and Binding energy, Nuclear size, spin, parity
Week 3	Numerical Problem on Binding energy and nuclear size, Magnetic dipole moment, quadrupole moment
Week 4	Bain Bridge Spectrograph, Bain Bridge and Jordon mass spectrograph, Determination of charge by Mosley law.
Week 5	Introduction of unit 2: Interaction of charged particles, Alpha disintegration
Week 6	Range and struggling of alpha particles, Numerical problems Class Test - 1
Week 7	Range of electrons and absorption of beta particles, Geiger Nuttal law
Week 8	Interaction of gamma rays, Absorption of gamma rays and its application
Week 9	Introduction of unit 3, Nuclear reactions, Elastic and inelastic scattering, Nuclear disintegration , photonuclear reaction Class test-2
Week 10	Heavy ion and spallation reaction, conservation laws, Q- value and Threshold reactions
Week 11	Nuclear reactors, general aspects of reactor design, Nuclear Fission reactor, Nuclear Fusion reactor
Week 12	**MOCK TEST**
Week 13	Cyclotron and Betatron accelerator, Ionization Chamber, Proportional counter
Week 14	Geiger Muller Counter, Tendem accelerator, Scintillation counter and semiconductor detector
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

NameoftheAssistant Professor: Dr Pinki Rani **ClassAnd Section: B.Sc. 4th sem** **Subject: Optics-II** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of unit-1: Interference by division of amplitude: color of thin films, wedge shaped film, Newton's rings

Week 2	Interferometers: Michelson's Interferometer and it's applications
Week 3	Fresnel's Diffraction: Fresnel's half period zones, Zone plate
Week 4	Diffraction at a straight edge, Rectangular slit and circular apperture
Week 5	Fraunhoffer diffraction: one slit diffraction, Two slit diffraction Class Test-1
Week 6	N- slit diffraction, Plane transmission grating spectrum
Week 7	Dispersive power of grating, Limit of resolution, Rayleigh criterion
Week 8	Resolving power of telescope and grating, Doubt session of unit- 1 and unit- 2
Week 9	Introduction of Polarization, Double refraction, Polarization by reflection and by scattering Class Test-2
Week 10	Malus law, phenomenon of double refraction, Huygen' wave theory of double refraction (Normal and oblique incidence)
Week 11	Analysis of polarized light, Nicol prism quarter wave plate and half plate
Week 12	**MOCK TEST**
Week 13	Production and detection of 1) Plane polarized light 2) Circularly polarized light 3) Elliptically polarized light
Week 14	Optical activity, Fresnel's theory of rotation, Polarimeters (Half shade and Biquartz)
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms Sudha Diwakar **Class And Section: B.Sc Biotech 6th sem** **Subject: Organic chemistry , BT 606** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Molecular orbital picture and aromatic characteristics Of pyrrole , Furan and thiophene. Methods of synthesis of pyrrole and furan.
Week 2	Methods of synthesis of thiophene Chemical reactions of pyrrole, furan and thiophene
Week 3	Molecular orbital picture and aromatic characteristics of Pyridine. The mechanism of electrophilic and nucleophilic substitution Preparation of indole, **Class Test**
Week 4	Preparation and chemical reactions of quinolone and isoquinoline.
Week 5	Nomenclature, structural features, Methods of formation and chemical reactions of thiols, thioethers
Week 6	Methods of formation and chemical reaction of sulphonic acids sulphonamides and sulphaguanidine
Week 7	Synthetic detergents alkyl and aryl sulphonates Acidity of hydrogen, alkylation of diethyl malonate and ethyl acetoacetate. The Claisen condensation. Keto-enoltautomerism of ethyl acetoacetate, **Class Test**
Week 8	Addition or chain-growth polymerization. Free radical vinyl polymerization. Ionic vinyl polymerization,
Week 9	Preparation , properties and uses of polymers. Ziegler-Natta polymerization. Vulcanization of natural rubber
Week 10	Classification of amino acids. Acid-base behaviour. Structure, and classification of proteins Isoelectric point and electrophoresis, **Assignment**
Week 11	Preparation of amino acids. Peptide structure determination, end group analysis
Week 12	**MOCK TEST**
Week 13	Selective hydrolysis of peptides. Classical peptide synthesis. Solid–phase peptide synthesis
Week 14	Proteins: Primary &Secondary structure. Structures of peptides.
Week 15	**Revision**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Ms. Neha **Class And Section: B.Sc Medical 6th** **semester** **Subject: Paper 1- Plant Biochemistry and biotechnology** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction of enzymes, discovery and nomenclature, characteristics of enzymes, concept of holoenzymes, Apoenzyme, coenzyme and co-actors.
Week 2	Regulation of enzyme activity, mechanism of action and functions of enzymes. Revision of unit-1 **Test**
Week 3	Introduction to respiraton, aerobic and anaerobic respiration, respiratory substrates, respiratory quotient.
Week 4	Glycolysis, breakdown of pyruvic acid, krebs cycle Chemiosmotic theory, redox potential.
Week 5	Electron transport chain, Oxidative phosphorylation, pentose phosphate pathway, **Assignment**
Week 6	Factors affecting respiration Revision of unit-2 **Test**
Week 7	Lipid metabolism- structure and function of lipids, saturated and unsaturated fatty acid Biosynthesis of fats, alpha and beta oxidation
Week 8	Storage and mobilization of fatty acids, glyoxylate cycle.Introduction of nitrogen metabolism and biology of nitrogen fixation
Week 9	Nodule formation in plants, nitrate assimilation in plants and importance of nitrate reductase, ammonium assimilation in plants. Revision of unit-3
Week 10	Tools and techniques of recombinant dna technology, cloning vectors , gene cloning, PCR technique.
Week 11	Genomic and cDNA library, transposable elements, cellular totipotency, differentiation and morphogenesis.
Week 12	**MOCK TEST**
Week 13	Gene transfer techniques, application of recombinant DNA technology, introduction to plants tissue culture and requirements of plant tissue culture.
Week 14	Different types of plant tissue culture, protoplast fusion and somatic hybridization, application of plant tissue culture.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Ms. Neha **Class And Section: B.Sc Medical 6th semester** **Subject: Paper 2- Economic Botany** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Vavilov's centre of origin Of crop plants, origin, distribution, botanical description, brief idea of cultivation and uses of wheat, rice and maize.
Week 2	Origin, distribution, botanical description, brief idea of cultivation and uses of pulses(gram, arhar and pea).
Week 3	Origin, distribution, botanical description, brief idea of cultivation and uses of vegetables (potato, tomato, onion).
Week 4	Revision of unit-1 **Test**
Week 5	Origin, distribution, botanical description, brief idea of cultivation, processing and uses of fibres(cotton, jute and flax).
Week 6	Origin, distribution, botanical description, brief idea of cultivation and uses of groundnut, mustard, sunflower oil.
Week 7	Origin, distribution, botanical description, brief idea of cultivation and uses of coconut. Revision of unit-2 **Test**
Week 8	Morphology of plant part used, brief idea of cultivation and uses of spices(coriander, ferula, ginger, turmeric).
Week 9	Morphology of plant part used, brief idea of cultivation and uses of cloves. Medicinal plant – Cinchona, Rauwolfia, Atropa,Opium, cannabis
Week 10	Morphology of plant part used, brief idea of cultivation and uses of withania. Revision of unit-3, **Assignment**
Week 11	Morphology of plant part used, brief idea of cultivation, processing and uses of alcoholic beverage(Tea, coffee)
Week 12	**MOCK TEST**
Week 13	Morphology of plant part used, brief idea of cultivation, processing and uses of rubber, sugarcane.
Week 14	General account and sources of timber, energy plantation and bio-fuels.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Jyoti Sharma **Class And Section: Minor 2nd sem.** **Subject: Principles of Gene Manipulation (24CBT402MI01)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Introduction and scope of genetic engineering, Milestones in genetic engineering
Week 2	Purification of total cell DNA, Plasmid DNA, Phage DNA and yield Analysis
Week 3	DNA Polymerase, Polynucleotide kinase, Alkaline phosphatase,
Week 4	Nucleases, Methylase, Reverse transciptase, **Class Test I**
Week 5	Restriction endonucleases, Ligases, Construction of recombinant DNA,
Week 6	Preparation of competent cells, episomes
Week 7	Gene transfer using plasmids and other cloning vectors
Week 8	Genetic engineering in animals, **Assignment**
Week 9	Genetic engineering in plants
Week 10	Therapeutic products produced by genetic engineering, human hormones, **Class Test II**
Week 11	Immune modulators and vaccines
Week 12	**MOCK TEST**
Week 13	DNA Fingerprinting, Gene therapy
Week 14	Restriction mapping, Genome mapping.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25 (EVEN SEMESTER)

Name of the Assistant Professor: Ms. Sudha Diwakar **Class And Section: B.Sc Biotec 4th sem** **Subject: Organic Chemistry BT 406** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Molecular vibrations, Hooke's law. Selection rules, intensity and position of IR bands. Measurement of spectrum, fingerprint region.
Week 2	Characteristic absorptions of various functional groups Interpretation of IR spectra of simple organic compounds.
Week 3	Applications of IR spectroscopy in structure elucidation of simple organic Compounds, **Assignment**
Week 4	Structure and nomenclature of amines, physical properties. Structural features affecting basicity of amines, **Class Test**
Week 5	Separation of a mixture of primary, secondary and tertiary amines
Week 6	Preparation of alkyl and aryl amines, **Class Test** Electrophilic aromatic substitution reaction in aryl amines.
Week 7	DIAZONIUM SALTS : mechanism of diazotization . structure of benzene diazonium chloride. Replacement of azo group.
Week 8	Reduction of diazonium salts to hydrazines , coupling reaction and its synthetic application.
Week 9	Nitro Compounds : Preparation of nitro alkanes and nitro arenes and their chemical properties.
Week 10	Electrophilic aromatic substitution reaction in nitro arenes and reductions in acidic, neutral and alkaline medium. Aldehydes and Ketones: Nomenclature of aldehydes and ketones.
Week 11	Preparation of aldehydes and ketones. physical properties . Reactivity of aldehydes and ketones.
Week 12	**MOCK TEST**
Week 13	Mechanism of Aldol condensation , perkin , knoevengel condensation..mannich reaction .oxidation of aldehydes. Baeyer- villiger oxidation of ketones.
Week 14	Wolff- Kishner, LiAlH4 and NaBH4 reductions Cannizzaro reaction. MPV, Clemmensen reduction
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Sudha Diwakar **Class And Section: B.Sc Biotech 4th sem** **Subject: Inorganic chemistry , BT 407** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Chemistry of f- block elements: electronic configuration , oxidation state
Week 2	Magnetic properties, complex formation, colour , ionic radii.
Week 3	Lanthanide contraction ,occurrence and separation of lanthanides. Lanthanide compounds
Week 4	Actinides: general characteristics of actinides, **Class Test**
Week 5	Transuranic elements, chemistry of separation, **Class Test**
Week 6	comparison of properties of lnthanides and actinides with transition elements Assignment
Week 7	Chemistry of analysis of various groups of basic radicals, **Assignment**
Week 8	Chemistry of analysis of various groups of acidic radicals
Week 9	Identification of acid radicals in typical combination
Week 10	Chemistry of interference of acid radicals and removals in the analysis of basic radicals
Week 11	Common ion effect, solubility product
Week 12	**MOCK TEST**
Week 13	Theory of precipitation, co precipitation, post precipitation,
Week 14	Purification of precipitates
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Indu Rani **Class And Section: B.Sc Life Sciences 2nd Sem. Section A and B** **Subject: Diversity of Archegoniate** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Introduction to bryophyte, General character and classification, Economic importance of bryophyte.
Week 2	Structure and reproduction in Marchantia Structure of Anthoceros
Week 3	Reproduction in Anthoceros, Structure and Reproduction of Funaria Evolution of sporophytes in Bryophytes
Week 4	**Test** General characters and classification of pteridophytes.
Week 5	Rhynia structure and reproduction Sellaginella external and internal structure
Week 6	Reproduction in Sellaginella Structure and reproduction of Equisetum
Week 7	Structure and reproduction in Pteris Apospory, apogamy and stellar system in pteridophytes
Week 8	**Test** Fossils and process of fossilization , Geological time scale
Week 9	**Assignment** Fossil gymnosperm- Lyginopteris, Willaimsonia and Bennettites
Week 10	General characters of gymnosperm and classification of gymnosperm Economic importance of gymnosperm
Week 11	Structure and reproduction of Cycas
Week 12	**MOCK TEST**
Week 13	Structure and reproduction of Pinus
Week 14	Structure and reproduction of Ephedra
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Indu Rani **Class And Section: Bsc.Biotech 2ns Semester** **Subject: Basics of Plant Genetics (Botany Minor)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Introduction of Mendellian genetic, history and laws of inheritance Chromosome theory of inheritance,Autosomes and sex chromosome
Week 2	Pedigree analysis, recessive and dominant traits, incomplete and complete dominance Multiple alleles, lethal allele, Epistasis
Week 3	Pleiotrophy, penetrance and expressivity Polygenic inheritance, Numerical practice
Week 4	**Test** Chloroplast mutation, Variegation in four'o clock plant
Week 5	Mitochondrial mutation, Shell coiling in snail Infective heredity- kappa particles in Paramecium
Week 6	Linkage and crossing over , cytological basis of crossing over Chromosome mapping and recombination frequency
Week 7	Sex linkage, Numerical practice Deletion, duplication , inversion and translocation in chromosome
Week 8	**Test** Position effect , Aneuoploidy and Euploidy and sex determination in plants
Week 9	**Assignment** Mutation and it's types, physical and chemical mutagens ClB method to detect mutation
Week 10	Fine structure of gene, complementing test for functional alleles Population and evolutionary genetics introduction
Week 11	Allergic and genotypic frequencies Hardy Weinberg law
Week 12	**MOCK TEST**
Week 13	Role of natural selection, mutation, genetic drift, genetic variations and speciation .
Week 14	Numerical practice
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Shweta Chaudhary **Class And Section: B.Sc. Medical 4th Sem** **Subject: Biology and Diversity of Seed Plants (Paper I)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction to the syllabus, Taxonomy and some important terms related to Taxonomy, fundamental components of Taxonomy,Aims and objectives to study Taxonomy, role of chemotaxonomy
Week 2	Role of cytotaxonomy, numerical taxonomy, phenogram, cladogram, nomenclature, principles, rules and principles of priority and **test**
Week 3	Identification of plants, herbarium description, Key, system of classification,, **test**
Week 4	System of classification, inflorescence type and floral terms
Week 5	Family description of Rannunculaceae, brassicaeae and **Assignment**
Week 6	Description of Euphorbiaceae, Fabaceae
Week 7	Description of Cucurbitaceae and Malvaceae
Week 8	Description of Rutaceae, Apiaceae and test
Week 9	Comparison of families, doubt session
Week 10	Description of Ascelphiadaceae and Lamiaceae
Week 11	Doubt session, Revision and test
Week 12	**MOCK TEST**
Week 13	Description of Solanaceae and Asteraceae
Week 14	Comparison of families
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Shweta Chaudhary **Class And Section: B.Sc. Medical 4th Sem** **Subject: Plant Embryology (Paper II)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Introduction to the syllabus, parts of Flower, it's terminology
Week 2	Microsporangium – process, pollen wall and it's sculpturing
Week 3	Dehiscence and process of microgametogenesis (male gametophyte formation)
Week 4	**Test**, pollen pistill interaction and Self incompatibility
Week 5	Doubt session, pollination and it's types
Week 6	Structure of Megasporangium, types of ovule and **Assignment**
Week 7	Megasporogenesis and megagametogenesis
Week 8	**Test,** female gametophyte development revision, fertilization and double fertilization
Week 9	Endosperm formation and it's type, polyembryony, Embryogensis in dicot
Week 10	Embryogensis in monocot, seeds Structure and development in monocot and dicots
Week 11	Comparison in monocot and dicots – embryogensis, seeds
Week 12	**MOCK TEST**
Week 13	Fruit type and Dispersal mechanism in fruits and seeds
Week 14	Doubt session and revision
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Bhawna **Class And Section: B.Sc life Sciences 2nd Sem ,Sec A& B** **Subject: Botany Skill (Floriculture)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	History of gardening, Importance and scope of floriculture and landscape gardening. Nursery Management and Routine Garden Operations:
Week 2	Routine Garden Operations: Sexual and Vegetative methods of propagation: Soil sterilization, Seed sowing: Pricking.
Week 3	Planting and Transplanting, Shading, Stopping or pinching: Defoliation, Wintering, Mulching: Topiary, Role of plant growth regulators.
Week 4	**Test**
Week 5	Ornamental Plants: Flowering annuals (Petunia, Chrysanthemum) ,Perennials(Rose ,China Rose),Divine vines (Money plant, Monstera)
Week 6	Shade and ornamental trees, Ornamental bulbous.Foliage plants, Cacti and succulents; Palms and Cycads; Ferns and Selaginellas.
Week 7	Ferns and Selaginellas,Cultivation of plants in pots, Indoor gardening; Bonsai.
Week 8	**Test, Assignment**
Week 9	Principles of Garden Design and landscaping ideas: Features of a garden - Garden wall, Fencing. Steps.
Week 10	Hedge, Edging, Lawn, Flower beds. Shrubbery , Borders, Water Garden.
Week 11	Commercial Floriculture: Factors affecting flower production: Production and packaging of cut flowers.
Week 12	**MOCK TEST**
Week 13	Flower arrangements; Methods to prolong vase life; Cultivation of Important cut flowers (Carnation, Aster).
Week 14	Chrysanthemum, Dahlia, Gerbera, Gladiolous, Marigold: 1. Rose. Lilium, Orchids.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor:Bhawna **Class And Section: BSc 2nd Sem** **Subject: Multidisciplinary Course (Plant Diversity and Human Welfare)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Types of Biodiversity, Level of Biodiversity: genetic, species and ecosystems, Patterns of Biodiversity
Week 2	Loss of genetic diversity. Loss of species diversity, Loss of economic diversity ,loss of agrobiodiversity, Projected scenario for biodiversity loss
Week 3	Factors affecting biodiversity , Over Exploitation , Habitat loss and Degradation , Invasive Species , Diseases, Natural calamities , Global Climate Change , Concept of endemism in plants .
Week 4	**Test, Assignment**
Week 5	IUCN categories: not evaluated; data deficient, least concern: near threatened, vulnerable, Endangered ,critically endangered, extinct in wild, extinct categories.
Week 6	Principles of conservation : Insitu and ExSitu Conservation ,Social approaches to conservation, Biodiversity awareness programmes , sustainable development .
Week 7	Organizations associated with biodiversity management-Methodology for execution-IUCN, UNEP,UNESCO, WWF, NBPGR;
Week 8	**Test**
Week 9	Biodiversity legislation and conservations. Soil erosion and conservation methods. Conservation of Forests: Afforestation, Reforestation. Monoculture.
Week 10	The Conservation of water: water scarcity, rain water harvesting. World Biodiversity hotspot ,National Parks Biosphere reserves and Wetlands.
Week 11	Role of plants in relation to Human Welfare; a) Importance of forestry their utilization and commercial aspect.
Week 12	**MOCK TEST**
Week 13	b) Avenue trees, c) Ornamental plants of India. D) Non-alcoholic beverage through ages.
Week 14	Fruits and nuts: Important fruit crops their commercial importance. Wood and its uses.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr Reeti Panchal **Class And Section: B. Sc. Medical IVth Sem** **Subject: Mammalian Physiology II (Zoology)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Origin, conduction and regulation of heart beat, Cardiac cycle
Week 2	Electrocardiogram, Cardiac output, Fluid pressure and flow pressure in closed and open circulatory system
Week 3	Composition and function of blood & lymph, Mechanism of coagulation of blood, Coagulation factors
Week 4	Anticoagulants, Haemopoiesis, Control of blood pressure, **Class Test**
Week 5	Exchange of respiratory gases, Transport of gases, Lung air volumes Oxygen dissociation curve of hemoglobin
Week 6	Bohr's effect, Hamburger's phenomenon (chloride shift), Control and regulation of respiration, Factors affecting Oxygen dissociation curve
Week 7	Structure of nephron, Patterns of excretory products, Ammonotelic, ureotelic, uricotelic, Ornithine cycle for urea formation in liver
Week 8	Urine formation, Counter-current mechanism of urine concentration Osmoregulation and micturition, Neuron structure
Week 9	Nature, origin and propagation of nerve impulse along with medullated fibres, Nature, origin and propagation of nerve impulse along with non-medullated fibre, Conduction of nerve impulse across synapse
Week 10	Mechanism of hormone action, Physiology of hypothalamus, Physiology of pituitary gland, gonads
Week 11	Physiology of thyroid and parathyroid gland, Physiology of Pancreas, Adrenal gland, Spermatogenesis **Class Test , Assignment** Ovulation and formation of corpus luteum
Week 12	**MOCK TEST**
Week 13	Oogenesis, Menstrual cycle in humans and fertilization, Structure of gamete
Week 14	Capacitation of spermatozoa, Implantation and gestation, Oestrous-anoestrous cycle
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr Reeti Panchal **Class And Section: B.Sc. Medical IVth Sem.** **Subject: Life and Diversity of Chordates II (Zoology)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Habitat, Habits, external morphology, skin and digestive system of Rana tigrina (Frog), Coelom ,viscera and circulatory system of Frog, Nervous system, eye and ear of Frog, Urinogenital system of Frog, Origin and evolutionary tree of Amphibia
Week 2	Respiratory system of Frog, Parental care in amphibians, **Class test** Habitat, Habits, external morphology, skin and digestive system of Hemidactylus (Common house lizard)
Week 3	Blood vascular system (Heart, arterial system, venous system, working of heart) of Hemidactylus, Respiratory system of Hemidactylus, Excretory system, male and female reproductive system of Hemidactylus, Nervous system and sense organs of Hemidactylus
Week 4	Origin and evolutionary tree of reptiles, Extinct reptiles, poison apparatus of snakes and poisonous and non-poisonous snakes, **Assignment**, Habitat, Habits, external morphology, skin and muscular system of Columba livia, (Pigeon), Digestive system and respiratory system of Pigeon
Week 5	Nervous system (Brain, spinal cord) of Columba livia (Pigeon) Blood vascular system (Heart, arterial system, venous system, working of heart) of Columba livia (Pigeon), Eye, tactile organs, olfactory organs and gustatory organs of Columba livia (Pigeon), Urinogenital system, copulation, egg laying and development of Pigeon
Week 6	Ear of Pigeon, Origin of migration and advantages of migration in aves Flight adaptations in birds, Migration of birds
Week 7	Structure and types of Feather , Development of feather Perching mechanism in birds
Week 8	Characters, classification and examples of class Mammalia, Habitat, Habits, external morphology, skin, muscular layer of Rat
Week 9	Digestive system of Rat, Nervous system (Brain and spinal cord) of Rat Nervous system (cranial nerves, spinal nerves and autonomic nervous system) of Rat
Week 10	Respiratory system of Rat, Endocrine system of Rat Sense organs (Organs of touch, smell taste, sight and ear) of Rat
Week 11	Reproductive system of Rat, Blood vascular system (Heart, arterial system, venous system, blood, lymphatic system and working of heart) of Rat
Week 12	**MOCK TEST**
Week 13	Peritoneum and thoracic cavity of Rattus rattus (House Rat), Excretory system of Rat, **Class Test**
Week 14	Dentition in mammals, Adaptive radiation of mammals
Week 15	**REVISION**

K. L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Priti **Class And Section: B.Sc. Biotech 4th sem.** **Subject: MOLECULAR BIOLOGY (BT 402)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	DNA as genetic material, Structure of DNA, Types of DNA, Replication of DNA in prokaryotes and eukaryotes: Semiconservative nature of DNA replication, Bidirectional replication, DNA polymerases
Week 2	The replication complex: preprimimng proteins, primosome, replisome, Rolling circle replication
Week 3	Unique aspects of eukaryotic chromosome replication, Fidelity of replication, **Class Test I**
Week 4	DNA damage and repair: causes and types of DNA damage, mechanism of DNA repair: Photoreactivation
Week 5	Base excision repair, nucleotide excision repair, mismatch repair, translesion synthesis, recombinational repair, non homologous end joining.
Week 6	Homologous recombination: models and mechanism, **Class Test II**
Week 7	RNA structure and types of RNA, Transcription in prokaryotes: Prokaryotic RNA polymerase, role of sigma factor, promoter, Initiation, elongation and termination of RNA chains
Week 8	Transcription in eukaryotes: Eukaryotic RNA polymerases, transcription factors, promoters, enhancers, mechanism of transcription initiation, promoter clearance and elongation
Week 9	RNA splicing and processing: processing of pre-mRNA: 5' cap formation, polyadenylation, splicing, rRNA and tRNA splicing
Week 10	Regulation of gene expression in prokaryotes: Operon concept (inducible and repressible system, **Assignment**
Week 11	Genetic code and its characteristics Prokaryotic and eukaryotic translation: ribosome structure and assembly
Week 12	**MOCK TEST**
Week 13	Charging of tRNA, aminoacyl tRNA synthetases, Mechanism of initiation, elongation and termination of polypeptides, Fidelity of translation
Week 14	Inhibitors of translation. Posttranslational modifications of protein
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Ranjana **Class And Section: B.Sc. Biotechnology** **VI Semester** **Subject: Physical Chemistry (BT-605)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Concept of potential energy curves for bonding and antibonding molecular orbitals. Concept of potential energy curves for bonding and antibonding molecular orbitals.
Week 2	Qualitative description of sigma and pie and n molecular orbital (MO) their energy level and respective transitions. Interaction of radiation with matter, difference between thermal and photochemical processes.
Week 3	Laws of photochemistry: Grotthus-Drapper law, Stark- Einstein law (law of photochemical equivalence) Jablonski diagram depiciting various processes occurring in the excited state. & **TEST**
Week 4	qualitative description of fluorescence, phosphorescence, non-radiative processes. quantum yield, photosensitized reactions-energy transfer processes.
Week 5	Ideal and non-ideal solutions, methods of expressing concentrations of solutions. activity and activity coefficient. Dilute solution,Colligative properties, Raolut's law, relative lowering of vapour pressure.
Week 6	molelcular weight determination, Osmosis law of osmotic pressure and its measurement, determination of molecular weight from osmotic pressure. & **Assignment.**
Week 7	Elevation of boiling point and depression of freezing point, Thermodynamic derivation of relation between molecular weight and elevation in boiling point and depression in freezing point.
Week 8	Experimental methods for determining various colligative properties. Abnormal molar mass, degree of dissociation and association of solutes.
Week 9	Statement and meaning of the terms– phase component and degree of freedom, thermodynamic derivation of Gibbs phase rule.
Week 10	phase equilibria of one component system– water & **TEST**
Week 11	phase equilibria of one component system- Sulphur systems.
Week 12	**MOCK TEST**
Week 13	phase equilibria of one component system– water
Week 14	phase equilibria of one component system- Sulphur systems
Week 15	**REVISION**

K. L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Priti **Class And Section: B.Sc. Biotech 6th sem.** **Subject: Animal Biotechnology** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Gene transfer methods in Animals– Microinjection, Embryonic Stem cell, gene transfer
Week 2	Gene transfer methods in Animals– Retrovirus & Gene transfer
Week 3	Introduction to transgenesis. Transgenic Animals– Mice, Cow, Pig, Sheep, Goat, Bird, Insect
Week 4	Introduction to transgenesis. Transgenic Animals– Mice, Cow, Pig, Sheep, Goat, Bird, Insect, **Class Test I**
Week 5	Introduction to transgenesis. Transgenic Animals– Mice, Cow, Pig, Sheep, Goat, Bird, Insect
Week 6	Animal diseases need help of Biotechnology
Week 7	Animal diseases need help of Biotechnology–Foot-and- mouth disease, Coccidiosis, Trypanosomiasis, Theileriosis
Week 8	Animal diseases need help of Biotechnology–Foot-and- mouth disease, Coccidiosis, Trypanosomiasis, Theileriosis
Week 9	Animal propagation– Artificial insemination, Animal Clones
Week 10	Conservation Biology– Embryo transfer techniques, **Class Test II**
Week 11	Introduction to Stem Cell Technology and its applications, **Assignment**
Week 12	**MOCK TEST**
Week 13	Genetic modification in Medicine- gene therapy, types of gene therapy, vectors in gene therapy
Week 14	Molecular engineering, human genetic engineering, problems & ethics
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Ranjana **Class And Section: B.Sc. Biotechnology** **Subject: Inorganic Chemistry (BT-607)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Organometallic Chemistry Definition, nomenclature and classification of organometallic compounds.
Week 2	Preparation, properties, and bonding of alkyls of Li, Al, Hg, and Sn a brief account of metal-ethylenic complexes.
Week 3	mononuclear carbonyls and the nature of bonding in metal carbonyls. Acid & Base ,Arrhenius, Bronsted– Lowry, the Lux– Flood.
Week 4	Solvent system and Lewis concepts of acids & bases, relative strength of acids & bases. & **TEST**
Week 5	Concept of Hard and Soft Acids & Bases. Symbiosis, electronegativity and hardness and softness.
Week 6	Essential and trace elements in biological processes. metalloporphyrins with special reference to haemoglobin and myoglobin.& **Assignement**
Week 7	Biological role of alkali and alkaline earth metal ions with special reference to Ca2+. Nitrogen fixation.
Week 8	Silicones preparation, properties. &**TEST**
Week 9	Silicones structure and uses.
Week 10	Phosphazenes preparation, properties
Week 11	Phosphazenes structure and uses.
Week 12	**MOCK TEST**
Week 13	Phosphazenes preparation, properties
Week 14	Phosphazenes structure and uses.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the professor:Dr.Jyoti Kapil **ClassAndSection: B.Sc biotech 2ndyr. Semester IV** **Subject:BT404MammalianPhysiolog** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Composition of bile, Saliva, Pancreatic, gastric and intestinal juice
Week 2	Mechanism of digestion & absorption of carbohydrates, Proteins, Lipids and nucleic acids
Week 3	Absorption of carbohydrates, Proteins, Lipids and nucleic acids
Week 4	Respiration: Exchange of gases, Transport of O2 and CO2, Oxygen dissociation curve, Chloride shift
Week 5	Composition of blood, Plasma proteins & their role, blood cells, Haemopoisis, Mechanism of coagulation of blood, **Assignement**
Week 6	Mechanism of working of heart: Cardiac output, cardiac cycle, Origin & conduction of heart beat
Week 7	Digestion, **Class Test**
Week 8	Structure of cardiac, smooth & skeletal muscle, threshold stimulus, All or None rule, single muscle twitch, muscle tone,
Week 9	Excretion: modes of excretion, Ornithine cycle, Mechanism of urine formation, **Class Test**
Week 10	Mechanism of generation & propagation of nerve impulse, structure of synapse, synaptic conduction,
Week 11	Saltatory conduction, Neurotransmitters Mechanism of action of hormones (insulin and steroids)
Week 12	**MOCK TEST**
Week 13	Different endocrine glands– Hypothalamus, pituitary, pineal, thymus, thyroid,
Week 14	Prathyroid and adrenals, hypo & hyper- secretions
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Priti **Class And Section: B.Sc. Biotech 2nd sem.** **Subject: Basics of Biotechnology (24CBTS402DS02)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Introduction to biotechnology – an interdisciplinary pursuit; Main areas of application of biotechnology; Biotechnology research in India and biotechnology in context of developing world; Public perception of biotechnological products;
Week 2	Brief account of safety guidelines, risk assessment and ethics in biotechnology; Very brief account of intellectual property rights; Substrates (raw materials) and the future of biotechnology.
Week 3	In brief scope and techniques of preservation. Introduction of fermentation technology.
Week 4	Introduction of animal tissue culture (brief of history, culture media, substrate surfaces, culture procedures, primary cultures, cell lines, organ culture and tissue engineering etc. **Class Test I**
Week 5	Introduction of plant tissue culture (in brief history, culture media, explants, totipotency, dedifferentiation and types of cell & tissue culture etc.). Scope and applications of animal biotechnology and plant biotechnology.
Week 6	Brief account of immunotechnology: immune system (immunecells, types of immunity and general structure of immunoglobulins), hybridoma technology and monoclonal antibodies. In vitro fertilization and embryo transfer technology in brief.
Week 7	Genetics and Biotechnology: Introduction of genetic engineering, gene and genomes, proteins and proteome, history of genetic manipulations, DNA fingerprinting and forensic analysis.
Week 8	Industrial genetics, Potential laboratory biohazards of genetic engineering. Introduction to molecular markers and genetic mapping;
Week 9	Introduction of enzyme technology: nature of enzymes, application of enzymes and immobilized enzymes. **Class Test II**
Week 10	An overview, scope and market of biological control of environment.
Week 11	Brief account on bioremediation and waste treatment biotechnology, microbial insecticides, biofertilizers. **Assignement**
Week 12	**MOCK TEST**
Week 13	Microbes in oil recovery and bioleaching. Application of biotechnology in medicine (pharmaceutical industry, vaccines, antibiotics etc.),
Week 14	Application of biotechnology in food industry, biofuels and chemical industry.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Ranjana **Class And Section: Biotechnology** **Subject: Digital and Technological Solutions** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Introduction & Evolution of Digital Systems: Role & Significance of Digital Technology, Information and Communication Technology (ICT) & Tools
Week 2	Computer system and its working , software and its types
Week 3	Operating systems: Types and Functions, Problem solving: Algorithms and Flowcharts
Week 4	Communication Systems: Principles, model & Transmission Media, Computer Networks and internet: Concepts & Applications
Week 5	www, web Browsers, Search Engines, Messaging, Email, Social Networking, Computer based information system: Significance & Challenges
Week 6	Digital India &e-Governance: Initiatives, Infrastructure, Services and Empowerment, digital financial tools: Unified payment interface
Week 7	Unified Payment Interface, Aadhar enabled Payment System, USSD, Credit/debit cards, e-wallets, Internet banking
Week 8	NEFT/RTGS and IMPS, OnlineBill Payment and POS.Cyber Security:Threats,significance, Challenges, Precautions
Week 9	**Class Test** Precautions, safety Measures and Tools,Emerging Technologiesand their applications: Overview of Artificial intelligence
Week 10	Machine Learning: Big Data, Data Science and Big Data Analytics; Internet of Things(IoT)
Week 11	Industrial Internet of Things (IIoT), Robotics and 3D Printig
Week 12	**MOCK TEST**
Week 13	Block chain Technology **Class Test, Assignement**
Week 14	Quantum Computing; Cloud computing and its service models
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the professor:Dr.Jyoti Kapil **Class and Section:B.Sc biotech 3rd yr. Semester VI** **Subject:BT603 Bioprocess Technology** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Introduction to bioprocess technology.. Basic principle components of fermentation technology
Week 2	Types of microbial culture and its growth kinetics– Batch, Fedbatch and Continuous culture.
Week 3	Design of bioprocess vessels- Significance of Impeller, Baffles, Sparger; A
Week 4	Airlift; Cyclone Column; Packed Tower and their application in production processes
Week 5	Types of culture/production vessels,
Week 6	**Test**
Week 7	Mass transfer coefficient; factors affecting KLa.
Week 8	Bioprocess measurement and control system with special reference to computer aided process control.
Week 9	Range of bioprocess technology and its chronological development
Week 10	**Test, Assignement**
Week 11	Introduction to oxygen requirement in bioproces
Week 12	**MOCK TEST**
Week 13	Effluent treatment.
Week 14	Microbial production of ethanol, amylase, lactic acid and Single Cell Proteins.
Week 15	**REVISION**

K .L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Ranjana **Class And Section: B.Sc. Biotechnology** **Subject: Physical Chemistry (BT-405)** **Teaching Term: 7th January to 5th May 2025(Excluding Holi Break)**	
Week 1	Second law of thermodynamics, need for the law, different statements of the law, Carnot's cycles and its efficiency, Carnot's theorem.
Week 2	Thermodynamics scale of temperature. Concept of entropy– entropy as a state function. entropy as a function of V & T, entropy as a function of P & T
Week 3	entropy change in physica l change, entropy as a criteria of spontaneity and equilibrium. Entropy change in ideal gases and mixing of gases.
Week 4	Third law of thermodynamics: Nernst heat theorem, statement of concept of residual entropy.& ASSIGNMENT
Week 5	evaluation of absolute entropy from heat capacity data. Gibbs and Helmholtz functions; Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities.
Week 6	A & G as criteria for thermodynamic equilibrium and spontaneity, their advantage over entropy change. Variation of G and A with P, V and T. & **TEST**
Week 7	Electrolytic and Galvanic cells– reversible & Irreversible cells , conventional representation of electrochemical cells.
Week 8	EMF of cell and its measurement, Wes ton standard cell, activity and activity coefficients. Calculation of thermodynamic quantities of cell reaction (G, H & K). Types of reversible electrodes– metal metal ion gas electrode,
Week 9	metal–insoluble salt- anion and redox electrodes. Electrode reactions, Nernst equations, derivation of cell EMF and single electrode potential. Standard Hydrogen electrode, reference electrodes.
Week 10	standard electrodes potential, sign conventions, electrochemical se ries and its applications. & **TEST, Assignement**
Week 11	Concentration cells with and without transference, liquid junction potential, application of EMF measurement. valency of ions, solubility product activity coefficient, ,
Week 12	**MOCK TEST**
Week 13	potentiometric titration (acid- base and redox). Determination of pH using Hydrogen electrode. Quinhydrone electrode and glass electrode by potentiometric methods.
Week 14	Quinhydrone electrode and glass electrode by potentiometric methods
Week 15	**REVISION**

K. L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Jyoti Sharma **Class And Section: B.Sc. Biotech 6th sem.** **Subject: Plant Biotechnology & Environmental Biotechnology (BT-604)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Introduction to i*n vitro* methods. Terms and definitions. Use of growth regulators.
Week 2	Embryo culture, embryo rescue after wide hybridization and its applications, Introduction to the processes of embryogenesis
Week 3	organogenesis and their practical applications. Clonal multiplication of lite species (Micropropagation) exillary bud, shoot-tip and meristem culture.
Week 4	Haploids and their applications, Soma clonal variations and applications., **Class Test I**
Week 5	Endosperm culture and production of triploids. Single –cell suspension cultures. Introduction to protoplast isolation: Principles and applications
Week 6	Various steps in the regeneration of protoplasts. Somatic hybridization – an introduction.
Week 7	Use of markers for selection of hybrid cells. Practical applications of somatic hybridization (hybrids vs cybrids).
Week 8	Microbiological quality of food and water. **Assignement**
Week 9	Treatment of municipal waste and industries effluents.
Week 10	Degradation of pesticides and other toxic chemicals by microorganisms (Bioremediation), **Class Test II**
Week 11	Thuringiensis toxin as a natural pesticide. Biological control of other insects swarming the agricultural fields
Week 12	**MOCK TEST**
Week 13	Enrichment of ores by microorganisms. Biofertilizers
Week 14	Nitrogen fixing microorganisms enrich the soil with assimilable nitrogen.
Week 15	**REVISION**

K. L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Mamta Singh **Class And Section: B.Sc Life Sciences Semester - II Section A & B** **Subject: DNA Fingerprinting(Minor)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Unit 1:DNA Profiling: Introduction, History of DNA Typing, human genetics – heredity,alleles, mutations
Week 2	Molecular biology of DNA and RNA, DNA types. Unit 2**:** DNA Polymorphism: VNTR, STR, SNP, Mt DNA, DNA Markers
Week 3	Sequence polymorphism. DNA typing systems- RELP analysis, PCR amplifications. **Class Test-I**
Week 4	Unit 3:DNA profiling methods: Sample collection and preservation for DNA profiling,
Week 5	DNA Extraction, Analysis of SNP, STR, Y-STR.
Week 6	Mitochondrial DNA, evaluation of results, database,
Week 7	Quality control, certification and accreditation.
Week 8	Unit 4:Forensic applications of DNA Profiling: Applications in disputed paternity cases, child swapping,
Week 9	missing person's identity – civil immigrations, veterinary
Week 10	wildlife and agriculture cases,
Week 11	legal perspectives – legal standards for admissibility of DNA profiling. **Assignment**
Week 12	**MOCK TEST**
Week 13	New and future technologies: DNA Chips
Week 14	Rapid DNA analyser, imitations of DNA profiling. **Class Test-II**
Week 15	**REVISION**

K. L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Dr. Mamta Singh **Class And Section: B.Sc Life Sciences Semester - II, Section A & B** **Subject: Animal Diversity - II(Major)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Unit 1 **:**Chordates : Salient features of chordates, principles of classification. Protochordates : Type study of Herdmania-External morphology
Week 2	Digestive and Blood vascular system . Nervous system,sense organs and excretory system
Week 3	Reproductive system (male and Female) **Class Test-I**
Week 4	Unit 2:Pisces : General characters and classification upto classes. Types of scales and fins in fishes.
Week 5	Type study : Labeo-External Characters,Body Wall Digestive system,Respiratory system.
Week 6	Blood Vascular and Nervous system . Sense Organs
Week 7	Excretory system and Reproductive Systems Unit 3**:**Amphibia : General characters and classification upto classes. Type study : Frog-External morphology ,Skin
Week 8	Digestive system,Respiratory system Circulatory system
Week 9	Nervous System,Sense organs and Urogenital system Parental care in Amphibians Reptilia : General characters and classification upto classes
Week 10	Unit 4**:**Aves : General characters and classification upto classes Flight adaptations in birds, Archeopteryx as missing link Mammals : General characters and classification upto classes **Assignment**
Week 11	Type study : Rat-External Characters,Body Wall Digestive system,Respiratory system. **Class test-II**
Week 12	**MOCK TEST**
Week 13	Blood Vascular and Nervous system . Sense Organs,
Week 14	Endocrine system and Urinogenital system
Week 15	**REVISION**

K. L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Mrs. Savita Nailwal **Class And Section: B.Sc Life Sciences Semester - II, Section A** **Subject: Digital & Technological solutions** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Unit 1 **:**Introduction & Evolution of Digital Systems: Role & Significance of Digital Technology
Week 2	Information and Communication Technology (ICT) & Tools
Week 3	Computer System &its working, Software and its types. Operating Systems: Types and Functions. Problem Solving: Algorithms and Flowcharts **Class Test-I**
Week 4	Unit 2:Communication Systems: Principles, Model & Transmission Media
Week 5	Computer Networks & Internet: Concepts & Applications, WWW, Web Browsers, Search Engines, Messaging, Email, Social Networking. Computer Based Information System
Week 6	Significance & Types. E-commerce & Digital Marketing: Basic Concepts, Benefits & Challenges
Week 7	Unit 3 Emerging Technologiesand their applications:Overview of Artificial Intelligence, Machine Learning, Deep Learning; Big Data, Data Science and Big Data Analytics.
Week 8	Internet of Things (IoT) and Industrial Internet of Things (IIoT), Robotics and 3D Printing
Week 9	Blockchain Technology; Quantum Computing; Cloud computing and its service models.
Week 10	Unit 4:Digital India & e-Governance: Initiatives, Infrastructure, Services and Empowerment. Digital Financial Tools: Unified Payment Interface
Week 11	Unit 4 AadharEnabled Payment System, USSD, Credit / Debit Cards, e-Wallets, Internet Banking, NEFT/RTGS and IMPS, Online Bill Payment and POS. **Class test-II, Assignment**
Week 12	**MOCK TEST**
Week 13	Cyber Security: Threats, Significance, Challenges
Week 14	Challenges, Precautions, Safety Measures and Tools.
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Mrs Savita Nailwal **Class And Section: B.Sc Life Sciences Semester - II** **Subject: Basics of Zoology -II** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Unit 1: Basics of Chordates: Define and Salient features of chordates.
Week 2	Unit 1: Difference between non chordates and chordates. **Class test-I**
Week 3	Unit 1: Characters of protochordates **Assignment**
Week 4	Unit 2: Pisces (Fishes): Characteristic features of freshwater and marine fishes, Edible fishes of India, Composite fish culture.
Week 5	Unit 2: Class Amphibia: Features of amphibians, Parental care in amphibians, Role of amphibians in ecosystem
Week 6	Unit 2: Identification of turtles and tortoise, Frog and Toad.
Week 7	Unit 3: Class Reptilia: Features of Reptiles, Common reptiles of India
Week 8	Unit 3: Identification of Poisonous and non poisonous snakes
Week 9	Unit 3: Difference between crocodile and Gharial
Week 10	Unit 4: Class Aves: Characteristic features of birds, Common birds of India,
Week 11	Unit 4: Flight adaptations in birds, **Class test-II**
Week 12	**MOCK TEST**
Week 13	Unit 4: Commercial uses of birds, Role of birds in agriculture.
Week 14	Unit 4: Class Mammals: Characters and economic importance of mammals
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Mrs. Savita Nailwal **Class And Section: B.Sc Life Sciences Semester - II** **Subject: Pest management.** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	**Unit 1 :**Study of important insect pests of crops and vegetables: Sugarcane: (With their systematic position, habits and nature of damage caused.(a) Sugarcane leaf-hopper (Pyrilla perpusilla), (b) Sugarcane Whitefly (Aleurolobus barodensis), (c) Sugarcane top borer (Sciropophaga nivella)
Week 2	(d) Sugarcane root borer (Emmalocera depresella), (e) Gurdaspur borer (Bissetia steniellus) Life cycle and control of Pyrilla perpusilla only. Cotton: (With their systematic position, habits and nature of damage caused.
Week 3	(a) Pink bollworm (Pestinophora gossypfolla), (b) Red cotton bug (Dysdercus cingulatus), (c) Cotton grey weevil (Myllocerus undecimpustulatus) (d) Cotton Jassid (Amrasca devastans), Life cycle and control of Pectinophore gossypiella
Week 4	Unit 2:Wheat: Wheat stem borer (Sesamia inferens) with its systematics position, habits, nature ofdamage caused. Life cycle and control methods.
Week 5	Unit 2:Paddy: (With their systematic position, habits and nature of damage caused)(a) Gundhi bug (Leptocorisa acuta) (b) Rice grasshopper (Hieroglyphus banian), **Class test**
Week 6	Unit 2:(c) Rice stem borer (Scirpophaga incertullus) (d) Rice Hispa (Diceladispa armigera) Life cycle and control of Loptocorisa acuta only.
Week 7	Unit 3:Vegetables: (Their systematics position, habits and nature of damage caused.(a) Aulacophora faveicollis – The Red pumpkin beetle. (b) Dacus cucurbitas – The pumpkin fruit fly. (c) Tetranychus tecarius
Week 8	(d) Epilachna – The Hadda beetle Life cycle and control of Aulacophora faveicollis Stored grains: (Their systematic position, habits and nature of damage caused. (a) Pulse beetle (Callosobruchus maculatus) (b) Rice weevil (Sitophilus oryzae) (c) Wheat weevil (Trogoderma granarium)
Week 9	(d) Rust Red Flour beetles (Tribolium castaneum) (e) Lesser grain borer (Rhizopertha dominica) (f) Grain & Flour moth (Sitotroga cerealella) Life cycle and control of Trogoderma granarium)
Week 10	Important bird and rodent pests of agriculture & their management.
Week 11	Pest control: Biological control, its history, requirement and precautions and feasibility of biological agents for control.,**Class test**
Week 12	**MOCK TEST**
Week 13	Chemical control: History, Categories of pesticides, important pesticides from each category to pests against which they can be used, insect repellents and attractants.
Week 14	Integrated pest management, **Assignment**
Week 15	**REVISION**

K. L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD
LESSON PLAN FOR THE SESSION 2024-25(EVEN SEMESTER)

Name of the Assistant Professor: Ms. Jyoti Sharma **Class And Section: B.Sc. Biotech 4th sem.** **Subject: Animal Developmental Biology (BT-403)** **Teaching Term: 7th January to 5th May 2025 (Excluding Holi Break)**	
Week 1	Definition, scope & historical perspective of development Biology, Gametogenesis – Spermatogenesis
Week 2	Oogenesis, Fertilization - Definition, mechanism, types of fertilization.
Week 3	Different types of eggs on the basis of yolk, Cleavage: Definition, types, patterns & mechanism
Week 4	Blastulation: Process, types & mechanism, Gastrulation: Morphogenetic movements– epiboly, emboly, extension, invagination, convergence, de-lamination, **Class Test I**
Week 5	Formation & differentiation of primary germ layers, Fate Maps in early embryos
Week 6	Differentiation: Cell commitment and determination- the epigenetic landscape: a model of determination and differentiation
Week 7	control of differentiation at the level of genome, transcription and post-translation level,
Week 8	Concept of embryonic induction Primary, secondary & tertiary embryonic induction, **Assignment**
Week 9	Neural induction and induction of vertebrate lens, Neurulation
Week 10	Development of vertebrate eye, **Class Test II**
Week 11	Fate of different primary germ layers,
Week 12	**MOCK TEST**
Week 13	Development of behaviour: constancy & plasticity
Week 14	Extra embryonic membranes, placenta in Mammals
Week 15	**REVISION**