Lesson plan – Sh. Gurdeep

Class –Bsc IInd Life Science and BSc IInd physical Science

Subject: Chemistry

Month	Topic
January	d and f-block Elements
Feburary	Theory of qualitative and quantitative analysis
March	Thermodynamic –I and Chemical Equilibrium
April	Alcohol and Phenol Chemistry
May	Chemistry of aldehydes and Ketones, revision and Class tests

Lesson Plan – Sh. Gurdeep

Class Bsc-I Life Science

Subject – Chemistry

Month	Topic
January	Covalent Bond Chemistry
February	Ionic Solid Chemistry
March	Alkanes and Cyclo alkanes Chemistry
April	Alkenes and their Chemistry,Hydrogen bonding and vander waal forces
May	Revision and Class tests

Lesson Plan

Name: Priya
Designation: Extension Lecturer
Class: VAC4th Semester
Chemistry Lesson Plan: 16 Week (From January 2025 to May 2025)

Week 1: Unit - I:Soaps and detergents, cleansing action of soap, Cleansing action of detergents
Week 2: Propellants, Solid propellant, liquid propellants, hybrid propellants
Week 3: Dyes: Cause of exhibition of color, chromophore, auxochrome, classification of dyes
Week 4: Advanced chemical materials: Ceramics, Sunscreens
Week 5: Unit – II: Chemicals used in foods: Preservatives
Week 6: Chemicals used in foods: coloring agents
Week 7: Chemicals used in foods: coloring agents
Week 8: Sweetening agents, flavoring agents
Week 9: Antioxidants, Test of Unit – I
Week 10: Chemicals used to grow, protect foods and crops: Fertilizers
Week 11:Fungicides
Week 12: Herbicide and Insecticide, Test of Unit:II
Week 13: Unit-III: Vitamins and minerals Definition, their significance,
Week 14: Fat soluble vitamins: Names, daily dietary requirement, natural sources, Deficiency diseases Water soluble vitamins: Names, daily dietary requirement, natural sources, Deficiency diseases
Week 15: Minerals: Major and Minor nutrients, daily dietary requirement, natural sources, Deficiency diseases
Week 16: Unit-IV: Chemicals in Medicine: Drug - target interaction (enzymes as drug targets and receptors as drug targets),
Week 17: Chemical messengers, types of chemical messengers (hormones and neurotransmitters)
Week 18: Chemotherapy:antipyretics, analgesics, antidepressants' antiseptics and disinfectants, antiviral drugs, antacids
Week 19: Antimalarial, anesthetics, tranquilizers, hypnotics and sedatives, ant allergic drugs and histamines

Lesson Plan

Name: Priya
Designation: Extension Lecturer
Class: MDC 2nd Semester (Introductory Chemistry-II)
Chemistry Lesson Plan: 19 Week (From January 2025 to May 2025)

Week 1: Chapter 1: Renowned Indian Scientists o Brief Biography of Renowned Indian Scientists:Hargobind Khurana, Dr. P.C. Ray
Week 2: o Brief Biography of Renowned Indian Scientists: SirC.V. Raman, Dr. A.P.J. Abdul Kalam,
Week 3: o Brief Biography of Renowned Indian Scientists: Dr. C. N. R. Rao, Dr. Vikram Sara Bhai,
Week 4:

○ Brief Biography of Renowned Indian Scientists: Dr. Homi Jahangir Bhabha
Week 5: ○ Brief Biography of Renowned Indian Scientists: Dr. J.C. Bose, Dr. S. N. Bose
Week 6: Chapter 2: Metal and Non-Metals ○ Periodic table, ○ Classification of elements
Week 7: ○ Physical and Chemical aspects of metals and non-metals
Week 8: ○ Ore and Minerals of Iron, Copper, Aluminum, alloys
Week 9: Chapter 3: Physical Properties of Matter ○ Classification of matter, properties, uses
Week 10: ○ Ideal gas equation, real gas equation ○ Assignment- I
Week 11: ○ Some important compounds: baking soda ○ Test from Chapter -1
Week 12: ○ Some important compounds: washing soda
Week 13: ○ Some important compounds: Plaster of Paris, gypsum, glass
Week 14: ○ Some important compounds: glass
Week 15: Chapter 4: Soilandfertilizers ○ Green revolution
Week 16: ○ Soil: types of soil and their components for fertility ○ Test from Chapter – 2
Week 17: ○ Grow condition, pH, irrigation, biofertilizers,
Week 18: ○ Chemical fertilizers and their uses, ○ Assignment II
Week 19: ○ Acid rain ○ Revision

Lesson Plan

Name: Priya
Designation: Extension Lecturer
Class: B.Sc. III N.M
Chemistry Lesson Plan: 19 Week (From January 2025 to May 2025)

Week 1: Chapter 4: Phase Equilibrium: Explanation of Terms involved in Phase Rule, Criteria for Phase Equilibrium for Multi-Component System
Week 2: Derivation of Gibb's Phase Rule
Week 3: Phase Diagrams, Application of Phase rule to one component system
Week 4: Water System
Week 5:Carbon Dioxide System
Week 6: Phase rule Diagrams for Two Components Systems, Types of two Components involving Solid-Liquid Equilibria
Week 7: General Discussion of the Phase Diagrams for Two Component system
Week 8:Experimental Determination of the Phase Diagrams of Two Component System
Week 9: Study of Two Component System (Pb-Ag System), Pattinson's Process for Desilverisation of Lead
Week 10: Synthetic Polymer: Addition or Chain growth polymer
Week 11: Free radical vinyl polymerization
Week 12: Ionic vinyl polymerization
Week 13: Ziegler-Natta Polymerization
Week 14: Vinyl Polymers
Week 15: Condensation and step growth polymerization
Week 16: Polyesters, Polyamides, Phenol-formaldehyde resins
Week 17: Natural and synthetic polymers
Week 18 & 19: Revision

Name of the Faculty : Mr. Surender Kumar
Discipline : B.SC- III (Medical and Non Medical)

Semester : Semester-VI

Subject : Physical CHEMISTRY

Lesson Plan duration : From Jan 2025 to May 2025

Week/Month	Name of Topics
Jan	**Introduction to statistical mechanics** Need for statistical thermodynamics, thermodynamic probability, Maxwell Boltzmann distribution statistics, Born oppenheimer approximation, partition function and its physical significance. Factorization of partition function. **Photochemistry** Interaction of radiation with matter, difference between thermal and photochemical processe
Feb	Laws of photochemistry: Grotthus-Drapper law, Stark-Einstein law (law of photochemical equivalence), Jablonski diagram depiciting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions-energy transfer processes (simple examples)
march	**Solutions, Dilute Solutions and Colligative Properties** Ideal and non-ideal solutions, methods of expressing concentrations of solutions, Dilute solutions, Raoult's law. Colligative properties: (i) relative lowering of vapour pressure (ii) Elevation in boiling point (iii) depression in freezing point (iv) osmotic pressure. Thermodynamic
april	derivation of relation between amount of solute and elevation in boiling point and depression in freezing point.. Applications in calculating molar masses of normal, dissociated and associated solutes in solution
may	**Phase Equillibrium** Statement and meaning of the terms – phase, component and degree of freedom,

	thermodynamic derivation of Gibbs phase rule, phase equilibria of one component system –Example – water system. Phase equilibria of two component systems solid-liquid equilibria, simple eutectic Example Pb-Ag system, desilverisation of lead

Name of the Faculty : **Mr. RAVI KUMAR**
Discipline : **B.SC- III Med. + Non Med.**

Semester : **Semester-VI**

Subject : **Inorganic Chemistry**

Lesson Plan duration: **From Jan 2025 to May 2025**

Week/Month	Name of Topics
Jan.	**Acids and Bases** Arrhenius, Bronsted-lowry, Lux-flood, solvent system and Lewis concept of acids and bases, relative strength of acids and bases, levelling solvents,
Feb	hard and soft acids and bases(HSAB), Applications of HSAB principle **Bio inorganic chemistry** Metal ions present in biological system, classification on the basis of action (essential, non essential, trace, toxic
March	), Metalloporphyrins with special reference to haemoglobin and myoglobin Bohr effect.and Nitrogen fixation. **Class test of this chapter.**
April	, **Silicones and Phosphazenes** Nomenclature, classification, prepration and uses of silicones elastomers, polysiloxane copolymers

May	, poly phosphazenes and bonding in triphosphazene poly phosphazenes and bonding in triphosphazene. **Assignment ,Quiz and group Discussion**

Name of the Faculty : **Mr. RAVI KUMAR**
Discipline : **B.SC- III (NON MEDICAL + MEDICAL)**

Semester : **Semester-VI**

Subject : **ORGANIC CHEMISTRY**

Lesson Plan duration : **From Jan 2025 to May 2025**

Week/Month	Name of Topics
Jan.	**Heterocyclic Compounds** Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine. Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution
Feb	Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine
2 March	, piperidine and pyrrole. Introduction to condensed five and six- membered heterocycles. Prepration and reactions of indole, quinoline and isoquinoline with special reference to Fisher indole synthesis
March	Skraup synthesis and Bischler-Napieralski synthesis. Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline.

	Class test of this chapter
April	**Amino Acids, Peptides & Proteins** Classification, of amino acids. Acid-base behavior, isoelectric -amino acids. □point and electrophoresis. Preparation of Structure and nomenclature of peptides and end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid– phase peptide synthesis. Structures of peptides and proteins: Primary & Secondary structure.
May	**Synthetic Polymers** Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers. Condensation or step growth polymerization. Polyesters, polyamides, phenol formaldehyde resins. Natural and synthetic rubbers. **Unit test and assignment**

Name of the Faculty : Mr. RAVI KUMAR
Discipline : B.SC- I (Physical Science)

Semester : Semester-I

Subject : CHEMISTRY

Lesson Plan duration From Jan 2025 to May 2025

Week/Month	Name of Topics
Jan	Alkane and cycloalkanes Nomenclature, classification of carbon atoms in alkane and its structure, Isomerism in alkane, source. Method of formation : wurtz reaction

Feb	Kolbe reaction, Corey house reaction and Decarboxylation of carboxylic acid. Physical properties. Mechanism of free radical halogenations of alkane . Reactivity and selectivity. Nomenclature of cycloalkane, bayer strain theory and its limitation, theory of strainless ring. Alkene : Nomenclature of cyclo alkene.its structure. Method of formation : dehydration of alcohol, dehydrohalogenation of alkyl halide.
march	Hofmann eliminationation and mechanism. Saytzeff rule. Ecectrophilic and free radical addition, physical and chemical properties
april	Hydrogen bonding and vanderwall forces its definition and types. Its application. Metallic bond and semiconductor : VBT and band theory Unit test
may	Covalent bonding : VBT , VSEPR theory, Hybridisation. And MOT . Ionic solid : NaCl, CsCl, ZnS and Born haber cycle

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session2024-25) EVEN SEMESTER

Name of Teacher: Suman Lata
Designation: Extension Lecturer
Subject: Chemistry
Class: BSc 1st (Life Science)

Subject/Paper: Sr. No.	Months	Topics to be covered
1	January - February	Chemical kinetics: Concept of reactions rates, rates equation, factors influencing the rate of a reaction, integrated rate expression for zero, first, half- life period of reaction, Arrehenious equation. Unit Test.
2	March	Nernst Distribution Law: It's thermodynamics derivatives, Nernst distribution law after dissociation of solute in one of the phase of distribution law. Assignments.
3	April	Hydrogen bonding:- Definition type, effects of hydrogen bonding on properties of substance & Applications.
4	May	Revision of syllabus.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session2024-25) EVEN SEMESTER

Name of Teacher: Suman Lata
Designation: Extension Lecturer
Subject: Chemistry
Class: VOC Chemistry

Subject/Paper: Sr. No.	Months	Topics to be covered

1	January - February	Photosynthesis, pesticides, herbicide, storage and preservation of agriculture produces, food processing. Chemical from agriculture waste, use of polymer in agriculture.
2	March	Soil fertility urea cycle, nitrogen cycle, fertilizer & manures , essential plants nutrients Critical limit in soil and plants, factors affecting their availability and correction of their deficiencies in plants , roles of chelates. Unit Test
3	April	Chemical composition of earth crust and soil, Chemistry of acid soil , active acidity and potential acidity. Chemistry of salted soil , ph, ECE, ESP, SAR and important relation, soil management and amendment. Assignments
4	May	Nature and sources of pollutants and rains air water, soil pollutants. Sewage and industrial effluent - their composition and effects on soil properties and plants growth and human beings . Soil as sink for waste disposal. Revision of syllabus.

*Vacation as per university calendar

- 2 assignments and 01 unit test will be taken as per schedule.

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P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session2024-25) EVEN SEMESTER

Name of Teacher: Suman Lata
Designation: Extension lecturer
Subject: Chemistry
Class: SEC (2nd Sem)

Subject/Paper: Sr. No.	**Months**	**Topics to be covered**
1	January - February	Physical properties of water, specific heat , vapour pressure, boiling point, water as dispensing medium , water in food processing, Starch : Function & properties. Gums, pectic substances .
2	March	Enzyme : Biocatalyst, enzymes specificity Endogenous enzymes: lipase amylase Exogenous enzymes :phenol oxidase, oxidase reductase, Factors affecting enzymes activity. Unit test.
3	April	Flavour: molecular mechanisms of flavour perception, flavour form vegetables & fruits, spices, fat and oil ,milk and meat, Pigments. Assignments .
4	May	Buffer system, anti oxidants, antimicrobial, fat sweetner, clarifying agent, natural and synthetic food colour Food colourants: sunset yellow, orange B, green No 3.

		Revision of syllabus.

*Vacation as per university calendar

- 2 assignments and 01 unit test will be taken as per schedule.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session2024-25) EVEN SEMESTER

Name of Teacher: Suman Lata
Designation: Extension Lecturer
Subject: Chemistry
Class: BSc 1st (Physical science)

Subject/Paper: Sr. No.	**Months**	**Topics to be covered**
1	January - February	Chemical kinetics: Concept of reactions rates, rates equation, factors influencing the rate of a reaction, integrated rate expression for zero, first, half- life period of reaction, Arrehenious equation. Unit Test.
2	March	Nernst Distribution Law: It's thermodynamics derivatives, Nernst distribution law after dissociation of solute in one of the phase of distribution law. Assignments.
3	April	Hydrogen bonding:- Definition type, effects of hydrogen bonding on properties of substance & Applications.

4	May	Revision of syllabus.

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