***Govt. College for Women, Sampla (Rohtak)***

***Lesson plan of Even Semester (session 2023-2024)***

**Name of the Faculty : Mr Krishan**

**Course/Class : B.SC- I**

**Semester : Semester-II**

**Subject : Organic Chemistry**

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| **Week/Month** | **Name of Topics** |
| **1st week of Jan** | SECTION-A  Alkenes Nomenclature of alkenes, , mechanisms of dehydration of alcohols and dehydrohalogenation of alkyl halides,. The Saytzeff rule, Hofmann elimination, physical properties and relative stabilities of alkenes. |
| **2nd week of Jan** | Chemical reactions of alkenes mechanisms involved in hydrogenation, electrophilic and free radical additions, |
| **3rd week of Jan** | Markownikoff’s rule, hydroboration–oxidation, oxymercuration reduction, ozonolysis, hydration, hydroxylation and oxidation with KMnO4 |
| **4th week of Jan** | SECTION-B  Arenes and Aromaticity Nomenclature of benzene derivatives:. Aromatic nucleus and side chain. |
| **1st week of Feb** | Aromaticity: the Huckel rule, aromatic ions, annulenes up to 10 carbon atoms, aromatic, anti - aromatic and non – aromatic compounds. |
| **2nd week of Feb** | Aromatic electrophilic substitution general pattern of the mechanism, mechansim of nitration, halogenation, sulphonation, and Friedel-Crafts reaction. |
| **3rd week of Feb** | Energy profile diagrams. Activating , deactivating subs tituents and orientation. |
| **4th week of Feb** | **SESSINAL 1** |
| **5th week of Feb** | SECTION-C  Dienes and Alkynes Nomenclature and classification of dienes: isolated, conjugated and cumulated dienes. Structure of butadiene,. Chemical reactions 1,2 and 1,4 additions (Electrophilic & free radical mechanism), |
| **1st week of March** | Diels-Alder reaction, Nomenclature, structure and bonding in alkynes. Methods of formation. Chemical reactions of alkynes, acidity of alkynes. Mechanism of electrophilic and nucleophilic addition reactions, hydroboration- oxidation of alkynes |
| **2nd week of March** | SECTION-D  Alkyl and Aryl Halides Nomenclatu re and classes of alkyl halides, methods of formation, chemical reactions. Mechanisms and stereochemistry of nucleophilic substitution reactions of alkyl halides |
| **3rd week of March** | SN2 and SN1reactions with energy profile diagrams. Methods of formation and reactions of aryl halides, The addition-elimination and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions. |
| **4th week of March** | HOLI BREAK |
| **1st week of April** | Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides. |
| **2nd week of April** | Sessinal II |
| **3rd week of April** | Revision of Section A and B |
| **4th week of April** | Revision of Section C and D |

**Mr Krishan**

**Assistant Professor**

**Department of Chemistry**

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***Lesson plan of Even Semester (session 2023-2024)***

**Name of the Faculty : Mr. Krishan Kumar**

**Course/Class : B.SC- II**

**Semester : Semester-IV**

**Subject : Inorganic Chemistry**

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| **Week/Month** | **Name of Topics** |
| **1st week of Jan** | Section-A  Chemistry of f– block elements Lanthanides Electronic structure, oxidation states |
| **2nd week of Jan** | ionic radii and lanthanide contraction, complex formation, |
| **3rd week of Jan** | occurrence and isolation, lanthanide compounds |
| **4th week of Jan** | Section-B  Chemistry of f– block elements Actinides General features and chemistry of actinides, |
| **1st week of Feb** | chemistry of separation of Np, Pu and Am from U, |
| **2nd week of Feb** | Comparison of properties of Lanthanides and Actinides and with trans ition elements . |
| **3rd week of Feb** | Section-C  Theory of Qualitative and Quanti tative Inorganic Analysis-I |
| **4th week of Feb** | Chemistry of analysis of various acidic radicals |
| **5th week of Feb** | Chemistry of identification of acid radicals in typical combinations, |
| **1st week of March** | Chemistry of interference of acid radicals including their removal in the analysis of basic radicals. |
| **2nd week of March** | Section-D  Theory of Quali tative and Quanti tative Inorganic Analysis-II |
| **3rd week of March** | Chemistry of analysis of various groups of basic radicals, |
| **4th week of March** | HOLI BREAK |
| **1st week of April** | Theory of precipitation, co precipitation, Post- precipitation, purification of precipitates |
| **2nd week of April** | Sessional II |
| **3rd week of April** | Revision of Section A and B |
| **4th week of April** | Revision of Section C and D |

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***Lesson plan of Even Semester (session 2023-2024)***

**Name of the Faculty : Mr. Krishan Kumar**

**Course/Class : B.SC- III**

**Semester : Semester-VI**

**Subject : Organic Chemistry**

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| **Week/Month** | **Name of Topics** |
| **1st week of Jan** | **Section-A**  Heterocyclic Compounds-I Introduction: Molecular orbital p icture and aromatic characteristics of pyrrole, furan, thiophene and pyridine |
| **2nd week of Jan** | . Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution. |
| **3rd week of Jan** | Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole |
| **4th week of Jan** | **Section-B**  Heterocyclic Compounds-II Introduction to condensed five and six- membered heterocycles |
| **1st week of Feb** | Prepration and reactions of indole, quinoline and isoquinoline with special reference to Fisher indole synthesis, |
| **2nd week of Feb** | Skraup synthesis and Bischler-Napieralski synthesis. Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline |
| **3rd week of Feb** | Organosulphur Compounds Nomenclature, structural features, Methods of formation and chemical reactions of thiols, thioethers, sulphonic acids, sulphonamides and sulphaguanidine. Synthetic detergents alkyl and aryl sulphonates |
| **4th week of Feb** | **Sessinal-I** |
| **5th week of Feb** | **Section-C**  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. |
| **1st week of March** | Synthetic Polymers Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers. Condensat ion or step growth polymerization. Polyesters ,polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy re sins and polyurethanes. Natural and synthetic rubbers. |
| **2nd week of March** | **Section-D**  Synthetic Polymers Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers. |
| **3rd week of March** | Condensation or step growth polymerization. Polyesters, polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy re sins and polyurethanes. |
| **4th week of March** | HOLI BREAK |
| **1st week of April** | Natural and synthetic rubbers. |
| **2nd week of April** | Sessional II |
| **3rd week of April** | Revision of Section A and B |
| **4th week of April** | Revision of Section C and D |

**Mr. Krishan Kumar**

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