Lesson Plan

B.Sc. IInd Year (IIIrd Semester)

Paper-X (CH-203) Organic Chemistry

Teacher name: Dr. Neha Aggarwal

October 2020

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| Alcohols nomenclature, methods of formation by reduction of⎯Monohydric alcohols aldehydes, ketones, carboxylic acids and esters. Hydrogen bonding. Acidic nature. Reactions of alcohols. Dihydric alcohols — nomenclature, methods of formation, chemical reactions of vicinal glycols, oxidative cleavage [Pb(OAc) 4 and HIO4 ] and pinacol-pinacolone rearrangement. Phenols Nomenclature, structure and bonding. |

November 2020

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| Preparation of phenols, physical properties and acidic character. Comparative ac idic strengths of alcohols and phenols, resonance stabilization of phenoxide ion. Reactions of phenols — electrophilic aromatic substitution, Mechanisms of Fries rearrangement, Claisen rearrangement, Reimer-Tiemann reaction, Kolbe’s reaction and Schotten and Baumann reactions. Epoxides Synthesis of epoxides. Acid and base-catalyzed ring opening of epoxides, orientation of epoxide ring opening, reactions of Grignard and organolithium reagents with epoxides. |

December 2020

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| Ultraviolet (UV) absorption spectroscopy Absorption laws (Beer-Lambert law), molar absorptivity, presentation and analysis of UV spectra, types of electronic transitions, effect of conjugation. Concept of chromophore and auxochrome. Bathochromic, hypsochromic, hyperchromic and hypochromic shifts. UV spectra of conjugated enes and m a x of simpleλenones,Woodward- Fieser rules, calculation of -unsaturated ketones |

January2021

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| .β,αconjugated dienes and Applications of UV Spectroscopy in structure elucidation of simpl e organic compounds. Carboxylic Acids & Acid Derivatives Nomenclature of Carboxylic acids, structure and bonding, physical properties, acidity of carboxylic acids, effects of substituents on acid strength. Preparation of carboxylic acids. Reactions of carboxylic acids. Hell-Volhard-Zelinsky reaction. Reduction of carboxylic acids. |

February 2021

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| Mechanism of decarboxylation. Relative stability of acyl derivatives. Physical properties, interconversion of acid derivatives by nucleophilic acyl substitution. Mechanisms of esterification and hydrolysis (acidic and basic). |