Lesson Plan

B. Sc. Ist Year (Ist Semester)

Paper-III (CH-103) Organic Chemistry

Teacher name: Dr. Neha Aggarwal

October 2020

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| Structure and Bonding Localized and delocalized chemical bond, Van der Waal’s interactions, resonance: conditions, resonance effect and its applications, hyperconjugation, inductive effect, Electromeric effect & their comparison. Stereochemistry of Organic Compounds Concept of isomerism. Types of isomerism. elements of symmetry, molecular chirality,⎯Optical isomerism enantiomers, stereogenic centre, optical activity, properties of enantiomers, chiral and achiral molecules with two stereogenic centres, diastereomers, threo and erythro diastereomers, meso compounds, resolution of enantiomers, inversion, retention and racemization. |

November 2020

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| Relative and absolute configuration, sequence rules, R & S systems of nomenclature. determination of configuration of⎯Geometric isomerism geometric isomers. E & Z system of nomenclature, conformational analysis of ethane⎯Conformational isomerism and n-butane, conformations of cyclohexane, axial and equatorial bonds. Newman projection and Sawhorse formulae, Difference between configuration and conformation. |

December 2020

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| Mechanism of Organic Reactions Curved arrow notation, drawing electron movements with arrows, half-headed and double-headed arrows, homolytic and heterolytic bond breaking. Types of reagents – electrophiles and nucleophiles. Types of organic reactions. carbocations, carbanions, free radicals,⎯Reactive intermediates carbenes,(formation, structure & stability). 7 Alkanes and Cycloalkanes IUPAC nomenclature of branched and unbranched alkanes, classification of carbon atoms in alkanes. Isomerism in alkanes, sources, |

January2021

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| methods of formation: Wurtz reaction, Kolbe reaction, Corey-House reaction and decarboxylation of carboxylic acids, physical properties. Mechanism of free radical halogenation of alkanes: reactivity and selectivity. nomenclature, synthesis of cycloalkanes and their derivatives –⎯Cycloalkanes -dihalides, |

February 2021

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| ,ω,αphotochemical (2+2) cycloaddition reactions, , dehalogenation of pyrolysis of calcium or barium salts of dicarboxylic acids, Baeyer's strain theory and its limitations., theory of strainless rings. |