

Assignment for B.Sc. Sem II Chemistry Students (2025-26)

Paper: Organic Chemistry

Assignment Submission Date: 01.04.2026

M.M. 25

- Students have to select assignment topics as per their Roll No. in accordance with **Chemistry as Major or Minor** subject.
- Students are instructed to use a fair register/copy for writing
- Students must bring their previous semester marksheets at the time of assignment submission

Chemistry Major		Chemistry Minor	
Roll Number	Question No.	Roll Number	Question No.
2530014010001 - 10142	1,2,3	2530014010002 - 10284	1,2,3
10143 - 10294	4,5,6	10288 - 10583	4,5,6
10296 - 10444	7,8,9		
10448 - 10584	9,10,11		

- 1) Generation, structure, stability and reactions of carbenes, arynes and nitrenes.
- 2) Optical isomerism:-
 - elements of symmetry, molecular chirality, optical activity, stereogenic centres.
 - enantiomers, 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.
- 3) Geometrical isomerism:-
 - determination of configuration of geometric isomers. E, Z system.
 - geometrical isomerism in oximes and alicyclic compounds.

- 4) Conformational isomerism:-
 - conformational analysis of ethane and n-butane and cyclohexane, axial and equatorial bonds.
 - Saw-horse and flying wedge formulae, Fischer and Newman projections formulae.
 - Difference between conformation and configuration.
- 5) Baeyer's strain theory and its limitations.
 - Ring strain in (cyclopropane and cyclobutane), theory of strainless rings.
 - The case of cyclopropane ring and banana bond.
- 6) Methods Of Formation, Physical and Chemical properties of ALKENES and their relative stabilities.
- 7) Aromatic electrophilic substitution with Mechanism of nitration, halogenation, sulfonation, mercuration and Friedel-Crafts reaction of benzene and its derivatives.
- 8) Mechanism of nucleophilic substitution reactions of alkyl halides.
 - SN2 and SN1 reactions with energy profile diagrams
- 9) Preparation and reactions of indols, quinoline and isoquinoline with special reference to Fisher Indol synthesis, Skraup synthesis and Bischler – Nepieralski synthesis.
- 10) Grignard reagents, formation, structure and chemical reactions.
- 11) Molecular orbital picture and aromatic characteristic of pyrrole, furan, thiophene and pyridine (methods of synthesis and chemical reactions with mechanism of electrophilic Substitution, mechanism of nucleophilic substitution reactions).