(b) Differentiate between regio and chemoselectivity with examples. **5**

(c) Explain hydroboration with mechanism. **5**

Unit III

6. (a) Describe the reactions of carbonyl compounds with $LiAlH_4$. **10**

(b) Compare E1, E2 and E1cB mechanism of elimination reactions. **6**

7. Describe with mechanism and examples : **8,8**

(i) Stobbe reaction

(ii) Benzoin condensation.

Unit IV

8. (a) Explain Woodward-Hoffmann correlation diagrams. Explain with example. **4**

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M. Sc. EXAMINATION, 2026

(Second Semester)

(2020-21 Onwards)

(Re-appear Only)

CHEMISTRY

Organic Chemistry-II

Time : 3 *Hours*] [*Maximum Marks :* 80

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) What do you mean by ipso attack ? **2**

(b) How benzynes are generated ? **2**

(c) What is Michael addition ? **2**

(d) What is auto-oxidation ? **2**

(e) What are pyrolytic eliminations ? **2**

(f) How does Grinard reagent react with unsaturated carbonyl compounds ? **2**

(g) Why thermal [1, 3] sigmatropic migration of hydrogens are unknown ? **2**

(h) What are cheleotropic reactions ? **2**

Unit I

2. (a) Compare the different mechanisms of aromatic nucleophilic substitutions. **10**

(b) Explain Vilsmeier-Haack reaction. **6**

3. Describe the following : **6,5,5**

(i) Gattermann-Koch reaction

(ii) Sommelet-Hauser rearrangement

(iii) Von Richter reaction.

Unit II

4. (a) Describe the coupling of alkynes and arylation of aromatic compounds by diazonium salts. **6**

(b) Explain the Hunsdiecker reaction with mechanism and examples. **5**

(c) Illustrate the mechanism of allylic halogenations. **5**

5. (a) Describe Sharpless asymmetric epoxidation with mechanism and examples. **6**

(b) Derive the selection rule for the following cycloaddition reactions using correlation diagram : **6,6**

(i) $2\pi + 2\pi$ cycloaddition reaction

(ii) $4\pi + 2\pi$ cycloaddition reaction

9. (a) Explain Sommelet-Hauser rearrangement as an example of sigmatropic shift. **6**

(b) Describe the following : **5,5**

(i) Ene reactions

(ii) 1, 3-Dipolar cycloadditions.

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