

7. (a) Describe the important methods applied for the protection of alcohol and carbonyl groups. **10**
- (b) Describe two group C-X disconnections with suitable examples. **6**

Unit IV

8. (a) Describe the one group C-C disconnection strategies in alkene synthesis. **8**
- (b) Explain the importance of regioselectivity in one group C-C disconnections. **8**
9. Describe the two-group C-C disconnection approach in : **6,5,5**
- (i) Diels-Alder reaction
- (ii) 1, 3-Difunctionalized compounds
- (iii) Robinson annulation.



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M. Sc. EXAMINATION, 2025

(Fourth Semester)

(2020-21 Onwards)

(Regular & Re-appear)

CHEMISTRY

20CHE41OS4

Organic Chemistry Special-IV

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 is quantum yield in photochemical reactions ? 2
- (b) Differentiate between fluorescence and phosphorescence. 2
- (c) What is Benzvalene ? Draw its structure. 2
- (d) Explain the Hofmann-Löffler-Freytag reaction. 2
- (e) What are Synthons ? Give examples. 2
- (f) Describe the importance of chemoselectivity in the disconnection approach. 2
- (g) What is Michael addition ? 2
- (h) How acetylenes can be used in retro synthesis ? 2

Unit I

2. Describe the following : 10,6
 - (i) Jablonski diagram
 - (ii) Actinometry.

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3. (a) Describe the geometrical isomerism in alkenes. 8
- (b) Explain the cyclization reactions in olefins with examples. 8

Unit II

4. (a) Describe Norrish type-I and type-II reactions with examples. 10
 - (b) Explain the cycloaddition reactions of alkenes. 6
5. Describe the following : 8,8
 - (i) Barton reaction
 - (ii) Photo-Fries rearrangement.

Unit III

6. Describe the following : 8,8
 - (i) One group C-X disconnections
 - (ii) Functional group interconversions.

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P.T.O.