Examination Session June-2022

(Fourth Semester)

MCH-607

M.Sc. CHEMISTRY (MSCCH)

[Synthetic Organic Chemistry - II]

**Time : 2 Hours]**   **[Max. Marks : 40**

Note : This paper is of Forty (40) marks divided into two (02) Section A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

SECTION—A

(Long-Answer-Type Questions)

Note : Section 'A' contains five (05) long-answer-type questions of Ten (10) marks each. Learners are required to answer any two (02) questions only. $2 \times 10 = 20$

1. Define the term chemoselectivity, regioselectivity and stereoselectivity. Discuss the use of these concepts in designing the synthesis of target molecule by taking suitable example.

2. Formulate the reterosynthetic analysis of the following molecules and write their synthesis :

   (a)

   (b)
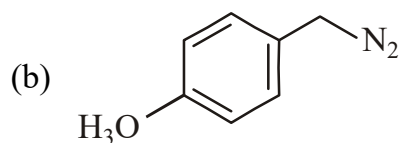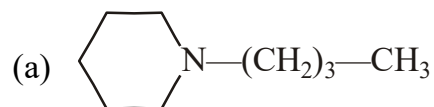
6. Explain asymmetric Diels-Alder reaction with suitable example.

7. Write note on Meerven-Pondroff verley reaction.

8. Explain Felkin-Anh model.

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3. Write note on :

(a) Sharpless epoxidation

(b) Wilkinson catalyst

4. Explain Cram's chelate model with a suitable example.

5. Write notes on the following :

(a) Enotiotopic faces

(b) Diastereotopic ligands

(c) Homotopic faces
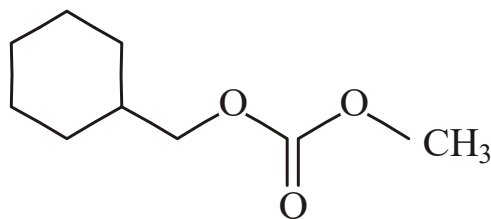
SECTION—B

(Short-Answer-Type Questions)

Note : Section 'B' contains eight (08) short-answer-type

questions of Five (05) marks each. Learners are required

to answer any four (04) questions only.   4×5 = 20

1. Explain the following terms with suitable example :

   (a) Synthon

   (b) Transform

2. Using butadiene as one of the precursor, how do you plan the synthesis of the following molecule ?

3. Write the retrosynthetic analysis and synthesis of Z-Jasmone.

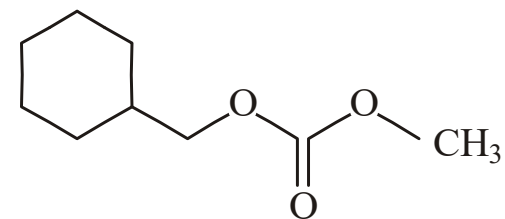4. Explain haptophilicity with suitable example.

5. What is 1, 2 asymmetric induction ? Explain Cram's open-chain model with suitable example.