

S-456

Total Pages : 4

Roll No.

MCH-607

Synthetic Organic Chemistry-II

M.Sc. Chemistry (MSCCH)

4th Semester Examination, 2022 (Dec.)

Time : 2 Hours]

[Max. Marks : 35

Note : This paper is of Thirty Five (35) marks divided into two (02) Sections 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 Nine and Half ($9\frac{1}{2}$) marks each. Learners are required to answer any Two (02) questions only.
($2 \times 9\frac{1}{2} = 19$)

1. Define the following terms with suitable examples :

(a) Target Molecule.

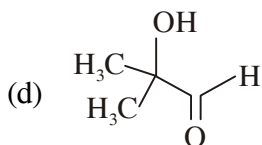
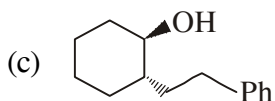
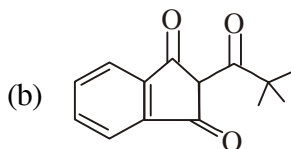
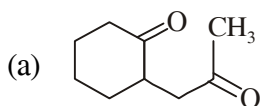
(b) Synthan.

(c) Transform.

(d) Retron.

[9½]

2. Suggest a retrosynthetic analysis for the following molecules, and formulate the synthetic steps by incorporating the necessary reagents for your strategy.



[9½]

3. Define the terms chemoselectivity, regioselectivity and stereoselectivity. Discuss the use of these concepts in designing the synthesis of target molecules by taking appropriate examples. [9½]

4. Write short note on :
- (a) Consecutive and convergent synthesis.
 - (b) Topicity and prochirality. [9½]
5. Write note on:
- (a) Retron.
 - (b) Diels- Alder reaction.
 - (c) Principle of stereoselectivity. [9½]

SECTION-B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Four (04) marks each. Learners are required to answer any Four (04) questions only. (4×4=16)

1. Write note on :
- (a) Enantiotopic faces.
 - (b) Homotopic faces. [4]
2. Explain the application of NMR spectroscopy in the determination of enantiomer composition. [4]

3. Write a note on Cram's rule. [4]
 4. Discuss about asymmetric Diel's-Alder reaction. [4]
 5. Write the reterosynthetic analysis of Z-Jasmone. [4]
 6. Explain the principle of stereoselectivity. [4]
 7. What is reversal of polarity ? Explain with suitable example. [4]
 8. Design a suitable strategy for 4-(2-hydroxy)-butyl anisole. [4]
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