

K-393

Total Pages : 6

Roll No.

MSCCH-606

Organic Synthesi

M.Sc. Chemistry(MSCCH)

4th Semester Examination, 2023 (Dec.)

Time : 2 Hours]

Max. Marks : 70

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

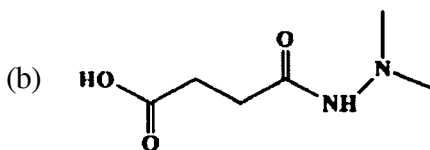
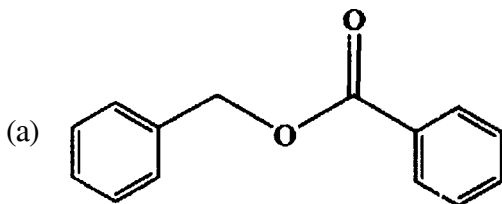
SECTION–A

(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

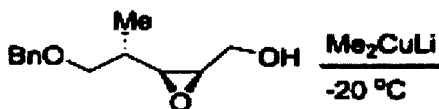
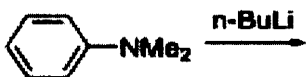
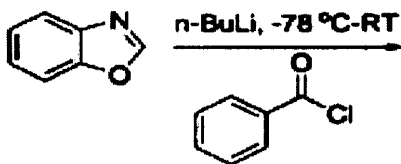
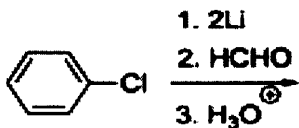
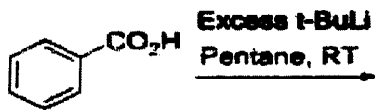
(2×19=38)

1. What are Organometallic compounds? How they are classified? Write any two method to prepare Mg, Li, Cu organometallic compound.
2. Which reducing agent causes the selective reduction of alkynes into cis and Trans alkenes. Define these reactions with their mechanism.
3. (a) Explain the Synthons, Synthestic equivalent with suitable examples.
(b) Show the Disconnection approach for the following molecules; represent synthons and respective synthetic equivalents and forward direction reaction.



4. What is principle of protection of amino groups? Explain the use of 9-fluorenyl methyl carbonyl group for protecting amino group.

5. Complete the following Reactions :

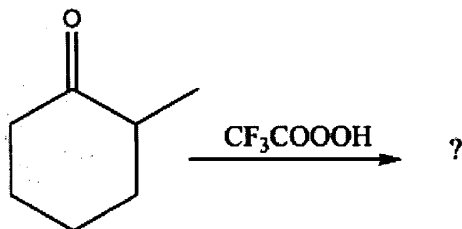


SECTION-B

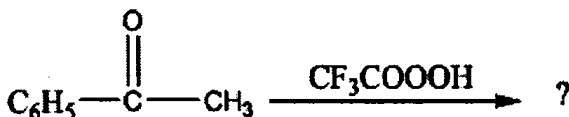
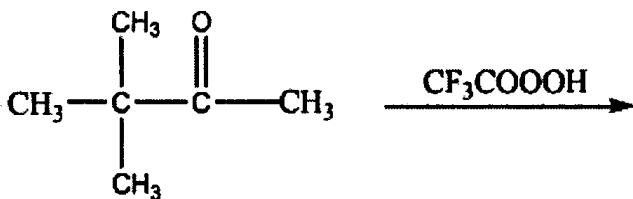
(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only. (4×8=32)

1. (a) What oxidation product is obtained by the Baeyer Villiger oxidation reaction of 2-Methyl cyclohexanone. Give the mechanism.

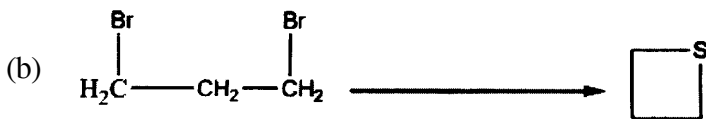


- (b) Predict the product obtained from the following oxidation reactions?

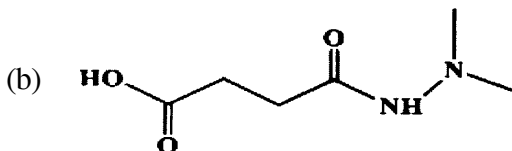
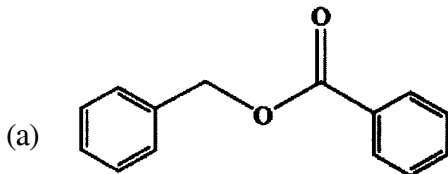


2. (a) What is the difference in the stereochemistry of product during the Prevost and Woodward oxidation reaction?
 (b) How you can differentiate the carbonyl compounds by using Tollens reagent (mild oxidizing agent).
3. Which of the reducing agents can be used for selective reduction of nitro group in the presence of other functional groups like ester, carboxylic and hydroxyl groups?

4. (a) What is FGI? Why there is need of FGI in case of few amines?
- (b) What is the importance of order of event in the retrosynthesis?
5. Discuss the mechanism of protection and deprotection of alcohols as trimethyl ethers?
6. How will you done the following conversions :



7. Show the Disconnection approach for the following molecules; represent synthons and respective synthetic equivalents and forward direction reaction.



8. Explain why trifluoroacetic acid is used as an effective reagent in place of peracetic acid during the epoxidation of alkenes.
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