

**M.Sc DEGREE (CSS) EXAMINATION, MARCH 2026****Fourth Semester**

M Sc POLYMER CHEMISTRY

ELECTIVE - CH880403 - ADVANCED ORGANIC CHEMISTRY

2019 Admission Onwards

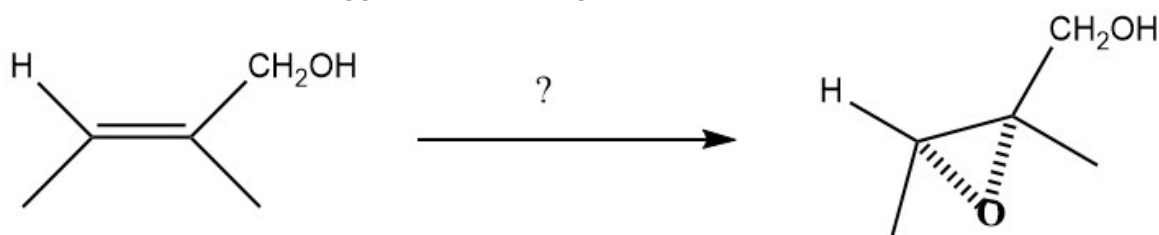
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Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)*Answer any **eight** questions.**Weight 1 each.*

1. Name the reaction and suggest suitable reagent:



- Discuss a method to convert cyclohexanone to lactone with suitable mechanism
- Explain following reactions with examples: a) Ritter reaction b) Tishchenko reaction
- What is Mitsunobu reaction? Mention its applications.
- Suggest a suitable reaction to convert five membered carbocyclic compounds into four membered carbocyclic compounds.
- Explain Feist-benary synthesis with example.
- What is umpolung equivalent? Explain with an example.
- Give the structure of calixarenes. Discuss its synthesis.
- List out two green alternatives of molecular rearrangements.
- Give a green alternative to pinacol-pinacolone rearrangement.

(8×1=8 weightage)



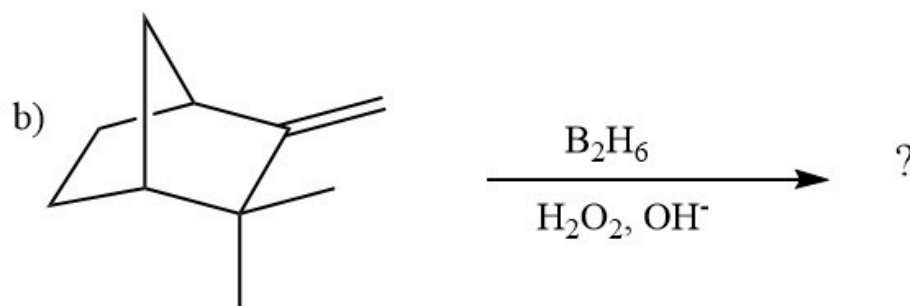
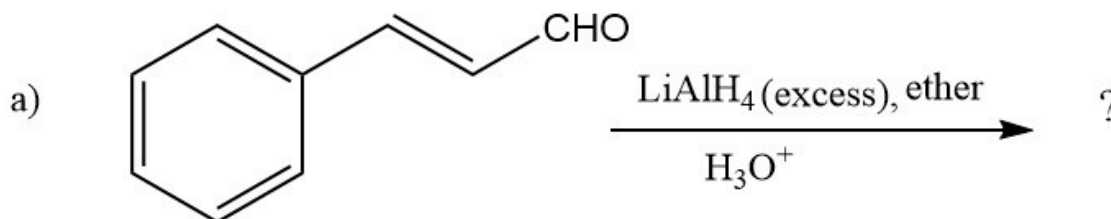


Part B (Short Essay/Problems)

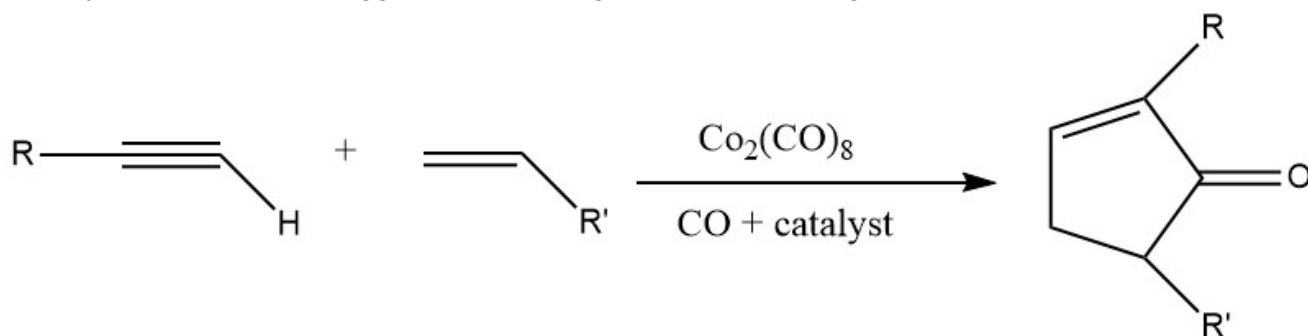
Answer any **six** questions.

Weight **2** each.

11. What are acyloins? How are they obtained? Explain the use.
12. Write a note on click reaction.
13. Predict the product and suggest suitable mechanism for the following:



14. Identify the reaction and suggest suitable reagent for the following conversion:



15. Discuss carbamate, t-boc, fmoc protection and deprotection of amines with example.
16. Give an account of basic principles of Merrifield's peptide synthesis.
17. Explain the retrosynthetic procedure of a) Sulfides and b) Ethers
18. Write short notes on:
 - a) Dendimers
 - b) Rotaxanes

(6×2=12 weightage)





Part C (Essay Type Questions)

Answer any **two** questions.

Weight **5** each.

19. Write in detail chromium and dimethyl sulphoxide based reagents (four each) for the conversion of primary alcohols to aldehydes.
20. Write notes on the metal mediated C – C and C – X coupling reactions with special reference to: a) Suzuki coupling b) Heck reaction c) Stille reaction d) Glaser coupling.
21. Discuss in detail the synthesis of four, five and six membered carbocyclic rings with suitable examples.
22. Explain the principles of microwave assisted and ultrasound assisted organic reactions with suitable examples.

(2×5=10 weightage)

