

**PARUL UNIVERSITY**  
**PARUL INSTITUTE OF APPLIED SCIENCES**  
**MID SEMESTER INTERNAL EXAMINATION, MARCH 2020**  
**M. Sc. Chemistry Semester IV**

**Paper Name: Stereochemistry and Disconnection approach**

**Date: 03/03/2020**

**Paper Code: 11205252**

**Time: 1hr 30min**

**Max. Marks: 40**

**Instructions:**

1. All questions are compulsory and options are given in first and second question only.
2. Numbers to the right of question indicate the marks of respective question.

**Q. 1** Attempt any one question of the following. **(08)**

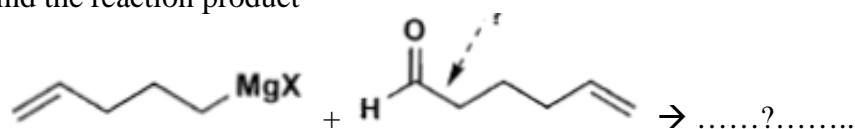
- a. Explain functional group Interconversion with suitable example. Differentiate between the terms Regioselective and Regiospecific reactions.
- b. Disconnect phenyl acetic acid and synthesize it as per the formed synthons. What is an activating group? Give one example.

**Q. 2** Attempt any three questions of the following. **(12)**

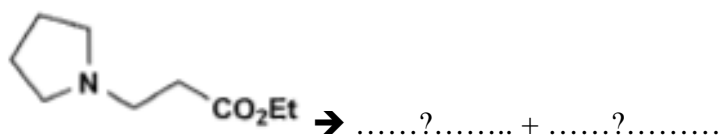
- a. Perform a disconnection for  $\alpha,\beta$ -unsaturated carbonyl compounds
- b. Perform a disconnection on 3-hydroxy ester.
- c. Discuss disconnection on a 1,6- Dicarbonyl compounds.
- d. Discuss disconnection on a 1,5- Dicarbonyl compounds.
- e. Write a note on Diels-Alder reaction and disconnection of the reaction product.

**Q. 3** Do as directed. Attempt all five questions. **(15)**

- a. Find the reaction product



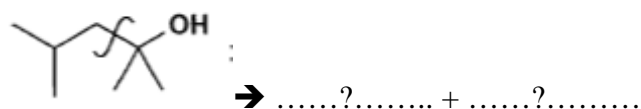
- b. Find the suitable synthons after disconnection.



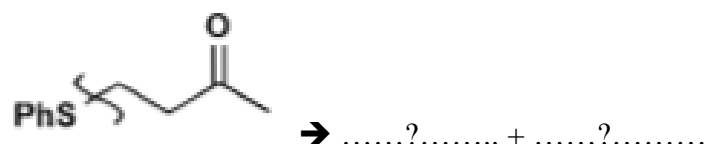
- c. Find the suitable synthons after disconnection.



- d. Find the suitable synthons after disconnection.



- e. Find the suitable synthons after two group disconnection.



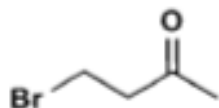
**Q. 4** Write correct option for the following multiple choice questions.

**(05)**

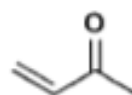
- If reaction dominantly occurs at one place
  - Chemoselective
  - Regioselective
  - Regiospecific
  - Both B and C
- Transforming a target molecule into simpler precursor structures
  - Disconnection
  - Retrosynthesis
  - Retroanalysis
  - Both A and B
- Synthons are
  - Molecular fragments
  - Cations
  - Anions
  - Both B and C
- For the given synthon, which is better synthetic equivalent



(A)



(B)



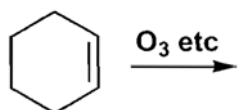
(C)



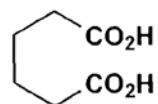
(D)

All of these

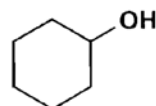
- Reaction product is



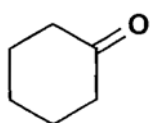
(A)



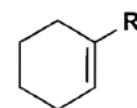
(B)



(C)



(D)



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