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**ICH 452**

**II Semester M.Sc. Degree Examination, September/October 2022**  
**INDUSTRIAL CHEMISTRY**  
**Advanced Organic Chemistry**

Time : 3 Hours

Max. Marks : 70

**Note :** 1) Answer **any five** questions from Part – A, **any five** questions from Part – B  
2) Figures to the right **indicate** marks.

PART – A

1. Answer **any five** sub divisions : **(5×2=10)**

a) How do you prepare

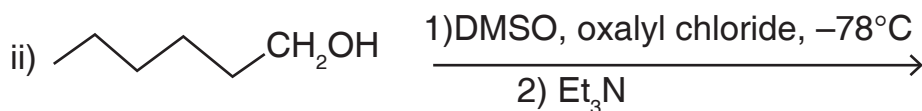
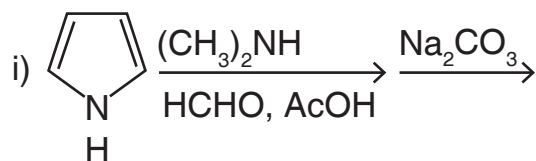
i) Osmium Tetroxide

ii)  $MnO_2$ .

b) Give any synthetic applications of Gilman reagent.

c) Explain Cope rearrangement.

d) Predict the products in the following reaction.



e) Explain primary and secondary metabolites in plants.

P.T.O.



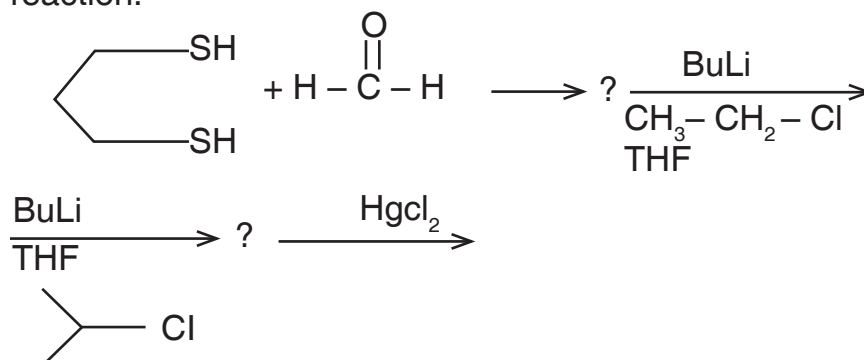
- f) Write the structure of the following compounds
- Ephedrine
  - Androsterone
  - Nicotine
  - Hygrine.
- g) Define the following terms
- Epimerization
  - Muta rotation.
- h) Give the structure of following with one biological importance of each compound.
- Glycogen and
  - Cellulose.

## PART – B

Answer **any five** of the following:

(5×12=60)

- Write the synthetic applications of Lithium Diisopropyl amide (LDA).
  - Mention the uses of Diazomethane in organic synthesis.
  - Describe reduction reactions involving metal hydrides. (4+4+4)
- How do you prepare amide from alcohol and amine using Dicyclohexyl carbodimide.
  - Give any two methods for the preparation organo lithium compounds. Mention their synthetic applications.
  - Predict the product and propose suitable mechanism in the following reaction. (4+4+4)





4. a) How do you differentiate Woodward and Prevost Hydroxylation ?  
b) Discuss Wagner-Meerwein rearrangement with Mechanism.  
c) Discuss about preparation of Pyrimidinone using Biginelli reaction with mechanism. **(4+4+4)**
5. a) With suitable example, explain Barbier-Wieland degradation reaction.  
b) What is Mitsunobu reaction ? With an example , explain the mechanism of the reaction.  
c) Discuss the synthetic applications of Suzuki coupling reaction. **(4+4+4)**
6. a) Mention the extraction methods of chemical constituents from plants.  
b) Write the structure elucidation of Nicotine. **(6+6)**
7. a) Outline the synthesis of Quercetin.  
b) Explain the characterization of isolated compounds by colour reactions and spray reagents.  
c) Outline the biosynthesis of terpenes from Mevalonic acid. **(4+4+4)**
8. a) Explain the ring size determination of Monosaccharides.  
b) Mention the industrial importance of dextran and pectin.  
c) Discuss the structure and degradation of starch. **(4+4+4)**
9. a) Write a short note on Epimerization.  
b) What is Mutarotation ? Discuss the mechanism using glucose an example.  
c) Explain the factors influencing the anomeric effect. **(4+4+4)**
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