

D 50113

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Name.....

Reg. No.....

FIFTH SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION, NOVEMBER 2023

Chemistry

CHE 5B 07—ORGANIC CHEMISTRY – II

(2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A**

*Answer all questions.  
Each question carries 1 mark.*

1. Reaction of *n*-propyl alcohol with HBr gives \_\_\_\_\_.
2. Jone's Reagent is \_\_\_\_\_.
3. Structure of Furan is represented as \_\_\_\_\_.
4. Grignard Reagent reacts with Ketone followed by Acid hydrolysis to give \_\_\_\_\_.
5. Lucas Reagent is \_\_\_\_\_.
6. The isomerism exhibited by  $\text{CH}_3 - \text{O} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$  and  $\text{CH}_3 - \text{O} - \text{CH}(\text{CH}_3)_2$  is \_\_\_\_\_.
7. Acetaldehyde on treatment with Tollen's reagent gives a precipitate of \_\_\_\_\_.
8. Reduction of nitro alkanes results in the formation of \_\_\_\_\_.
9. Reaction of benzene diazonium chloride with  $\text{H}_3\text{PO}_2 | \text{Cu}$  gives \_\_\_\_\_.
10. Nitrobenzene reduces with Sn + HCl gives \_\_\_\_\_.

(10 × 1 = 10 marks)

**Part B**

*Answer any ten questions.  
Each question carries 2 marks.*

1. Rate of  $\text{SN}^2$  reaction is affected by steric factors.
2. Write a short note on reformatsky reaction.
3. Explain the indicator action of phenolphthalein.
4. All ethers are Lewis bases. Justify this statement.
5. Give two tests to distinguish between Aldehyde and Acetone.
6. Why is formic acid stronger than acetic acid ?

**Turn over**

- Describe the synthesis of Cinnamic acid.
- Explain why boiling points of carboxylic acid are higher than corresponding alcohols.
- Why Amines are basic in nature ?
- Write a short note on Carbylamine reaction.
- What is diazo reaction ?
- Explain Tautomerism.

(10 × 2 = 20 marks)

### Part C

*Answer any five questions.  
Each question carries 6 marks.*

- Give the mechanism, stereochemistry and kinetics of  $E_2$  and  $E_1$  reactions in alkyl halides.
- (a) What is pinacole – pinacolone rearrangement, give its mechanism.  
(b) Write a note on acidity of phenols.
- Illustrate with one suitable eg : the following :  
(a) Cannizzaro reaction. (b) Aldol condensation.
- Explain the synthesis and application of Saccharin.
- Explain the synthetic application of Ethyl aceto acetate.
- Explain Nucleophilic aromatic substitution with mechanism.
- (a) Explain preparation of Phenol from Cumene and Sulphonic acid.  
(b) Discuss the application of Alizarin.
- Briefly explain the preparation and uses of Sulfadugs.

(5 × 6 = 30 marks)

### Part D

*Answer any two questions.  
Each question carries 10 marks.*

- How to prepare Grignard reagent and explain its synthetic application.
- Explain Electrophilic substitution reactions of Aniline :  
(a) Halogenation. (b) Sulphonation.  
(c) Nitration.

3. (a) Explain separation of Amines by Hinsberg method.
- (b) Explain the basicity of Guanidine.
- (c) Write a short note on Gabriel–Pthalimide reaction for the synthesis of amine.
4. (a) Discuss the preparation and synthetic application of benzene diazonium chloride.
- (b) How is acetaldehyde is prepared in the laboratory ?

(2 × 10 = 20 marks)