

**FIFTH SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION  
NOVEMBER 2022**

Chemistry

CHE 5B 07—ORGANIC CHEMISTRY—II  
(2017—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Section A (One word)***Answer all questions.  
Each question carries 1 mark.*

1. Write the structural formula of TNT.
2. What is Tollen's reagent ?
3. Luca's reagent is \_\_\_\_\_.
4. Ethanol free from water and other impurities is known as \_\_\_\_\_.
5. Wood spirit is \_\_\_\_\_.
6. Epoxides are prepared by the reaction of perbenzoic acid with \_\_\_\_\_.
7. The isomerism exhibited by n-butyl chloride and iso-butyl chloride is called \_\_\_\_\_.
8. Write the structural formula of vanillin.
9. The chemical test used to distinguish acetophenone and benzaldehyde is \_\_\_\_\_.
10. Write the reagents for carbylamine reaction of amines.

(10 × 1 = 10 marks)

**Section B (Short answer)***Answer any ten questions.  
Each question carries 2 marks.*

11. Describe Saytzeff's rule with an example.
12. Give any two uses of  $\text{CF}_3\text{CHClBr}$  and  $\text{CF}_2\text{Cl}_2$ .

Turn over

13. With the help of Grignard reagent how would you prepare *tert*-butyl alcohol.
14. What is Collin's reagent ? For what it is used ?
15. Phenols give colour reaction with ferric chloride, alcohols not. Why?
16. What is Williamson's synthesis ?
17. Benzaldehyde do not undergo aldol condensation. Why ?
18. Write a method for the synthesis of saccharin.
19. Give a preparation method for benzene sulphonic acid.
20. Which one is more acidic-benzoic acid or *p*-amino benzoic acid ? Give reason.
21. What is RDX ? Explain the chemistry behind the explosion of RDX.
22. Compare the aromaticity of pyridine with benzene.
- (10 × 2 = 20 marks)

### Section C (Paragraph)

Answer any five questions.

Each question carries 6 marks.

23. Write and explain any three reaction methods to distinguish nuclear and sidechain halogenated hydrocarbons.
24. How is methyl magnesium bromide prepared ? Using it, how would you prepare ethanol, isopropyl alcohol and acetic acid ?
25. What is Riemer-Tiemann reaction ? Explain with mechanism.
26. What are epoxides ? Explain the selectivity in ring opening reactions of epoxides.
27. Why the  $\alpha$  hydrogens of carbonyl compounds are acidic ? Compare the acidity of those in aldehydes and ketone.
28. What is HVZ reaction ? Write the mechanism.
29. Illustrate the urease method for the estimation of urea.
30. Explain briefly, the different hydrolysis of acetoacetic ester.
- (5 × 6 = 30 marks)

**Section D (Essay)**

D 30108

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

31. Explain  $S_N^1$  and  $S_N^2$  mechanisms with reference to stereochemistry and solvent effects.
32. Discuss the synthetic uses of acetoacetic ester.
33. Discuss the effect of substituents on the acidity of aliphatic and aromatic carboxylic acids.
34. Briefly explain the reduction of nitrobenzene in various media.

(2 × 10 = 20 marks)