

**THIRD SEMESTER B.A./B.Sc. DEGREE EXAMINATION  
NOVEMBER 2019**

(CUCBCSS—UG)

Chemistry

CHE 3C 03—ORGANIC CHEMISTRY

Time : Three Hours

Maximum : 64 Marks

**Section A (One Word)***Answer all questions.**Each question carries 1 marks.*

1. Tertiary butyl carbonium ion is ——— stable than isopropyl carbonium ion.
2. Particles resulting from bond homolysis is called ———.
3. The different spatial arrangement of atoms or groups in a molecule that arises from free rotation about a single bond is called ———.
4. The d-form and meso form of tartaric acid are ———.
5. Phenol +  $\text{CHCl}_3$  + KOH  $\longrightarrow$  ?
6.  $\text{R-COOH} + \text{NH}_3 \longrightarrow \text{A} + \text{B}$  A = ———, B = ———.
7. Alkaloids occur chiefly in ———.
8. The specific rotation of  $\beta$ -D glucose is ———.
9. Draw peptide linkage.
10. The degree of unsaturation of fat or oil is measured by its ———.

(10  $\times$  1 = 10 marks)**Section B (Short Answer)***Answer any seven questions.**Each question carries 2 marks.*

11. What is the difference between Inductive effect and Mesomeric effect.
12. Why is aniline less basic than ammonia ?
13. State and explain Huckel rule of aromaticity.
14. Distinguish racemization and resolution.

15. Distinguish primary, secondary and tertiary alcohols.
16. Is tropylium anion aromatic. Justify.
17. What is isoprene rule ?
18. What is Tollens reagent ?
19. What is Zwitter ion ?
20. What are crown ethers ?

(7 × 2 = 14 marks)

### Section C (Paragraph)

*Answer any four questions.  
Each question carries 5 marks.*

21. What is hyperconjugation? Explain its significance. How does it influence stability of cations ?
22. Draw different conformations of cyclohexane. Which is more stable ? Why ?
23. Explain mechanism of nitration and bromination of benzene.
24. What happens when methyl chloride is treated with metallic sodium. Name the reaction.
25. Give an account of addition reactions of aldehyde and ketone.
26. Write note on extraction of alkaloids.

(4 × 5 = 20 marks)

### Section D (Essay)

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

27. What is optical activity ? Discuss optical isomerism of tartaric acid.
28. Give a detailed account of the group already present in aryl ring in directing incoming group in an electrophilic substitution reaction.
29. Give the preparation and synthetic applications of benzene diazonium Chloride.
30. Discuss following : (a) Hofmanns bromamide reaction ; (b) Mutarotation ; (c) Geometrical isomerism in but-2-ene ; (d) Haloform test ; and (e) Preparation and use of phenolphthalein.

(2 × 10 = 20 marks)