

D 31574

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Name.....

Reg. No.....

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2022**

Chemistry

CHE 3C 03—ORGANIC CHEMISTRY

(2017—2018 Admissions)

Time : Three Hours

Maximum : 64 Marks

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

1. The hybridization of carbon in HCN is _____.
2. Racemic mixture is optically _____.
3. Nitration of benzene is an example of _____ reaction.
4. Grignard reagent on reaction with ketone forms _____.
5. The number of pi electrons in naphthalene is _____.
6. Acetaldehyde on oxidation with Tollens reagent gives _____.
7. Sucrose on hydrolysis gives _____.
8. Alkaloids occur mostly in _____.
9. Draw peptide linkage.
10. Terpenes are isolated by _____.

(10 × 1 = 10 marks)

Section B (Short Answers)*Answer any seven questions.**Each question carries 2 marks.*

11. Explain homolysis and heterolysis of a covalent bond.
12. Which of the following are optically active ? Why ? 2-chloropropane, 2-chlorobutane, 3-chloropentane.

Turn over

13. What is Wurtz reaction ? Illustrate it with an example.
14. What is Lucas reagent ? How its used to distinguish different types of alcohols ?
15. Which is more basic, ammonia or methyl amine ? Explain.
16. What is hydrogenation of oils and its use ?
17. What is Mutarotaion ?
18. What are Zwitter ions ?
19. Draw the structure of nicotine.
20. Write two uses of Citral.

(7 × 2 = 14 marks)

Section C (Paragraphs)

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

21. What is meant by mesomeric effect ? Show different resonating structures of nitrobenzene. Justify directive effect of it in electrophilic substitution reaction.
22. What is Huckels rule ? Which of the following is aromatic and Why ? Tropylium anion, cyclopentadienyl anion.
23. Discuss mechanism of S_N^1 and S_N^2 reactions of alkyl halide.
24. Give an account of HVZ reaction.
25. What are the basic difference between RNA and DNA.
26. What is Vulcanization ? What are its advantages ?

(4 × 5 = 20 marks)

Section D (Essays)

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

27. (a) Draw different conformations of cyclohexane. Which is more stable ? Why ? Arrange them in increasing order of stability.
- (b) Explain concept of hyperconjugation. Explain it taking 1-butene and 2-butene as example.

28. (a) Write mechanism of Friedel-Crafts alkylation reaction.
- (b) How is picric acid prepared from phenol ?
- (c) Give an account of nucleophilic addition reactions of aldehyde and Ketone.
29. (a) Define Alkaloids. What are general characteristics of alkaloids.
- (b) State isoprene rule. How are terpenes classified ?
- (c) Explain denaturation of protein.
30. What are Lipids ? How will you classify them ? Give an account of structure of proteins.

(2 × 10 = 20 marks)