

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2016

(CUCBCSS-UG)

Complementary Course

CHE 3C 03 – ORGANIC CHEMISTRY

Time : Three Hours

Maximum : 64 Marks

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

- Homolytic fission of a covalent bond liberates _____.
(a) Cations. (b) Anions.
(c) Free radicals. (d) Molecules.
- Name the conformations of cyclohexane.
- Different isomers of a substance will have the same _____.
(a) Structural formula. (b) Chemical properties.
(c) Molecular formula. (d) Physical properties.
- A carbon atom which is bonded to four different groups is called _____.
- An isomer of ethanol is :
(a) Methanol. (b) Dimethyl ether.
(c) Diethyl ether. (d) Ethylene glycol.
- Write the IUPAC name of $\text{CH}_2 = \text{CH} - \text{CH}_2 - \text{CHO}$.
- The number of pi electrons in benzene molecule is _____.
- Which of the following contains acetic acid?
(a) Vinegar. (b) Coal tar.
(c) Molasses. (d) Butter.
- The conversion of acid to alkene by electrolysis is known as _____.
- CONH-linkages are called _____ linkages.

(10 × 1 = 10 marks)

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

- Explain HVZ reaction.
- What is meant by functional isomerism? Give one example.
- Explain Racemisation.

Turn over

14. What are enantiomers? Give one example.
15. Write the mechanism and drawback of Friedel-Craft alkylation reaction.
16. Explain the directive effect of substituents with suitable examples.
17. Describe the manufacture of ethyl alcohol from molasses.
18. Differentiate DNA and RNA.
19. What are nucleosides? How are they converted to nucleotides?
20. Define Iodine number. What is its significance?

(7 × 2 = 14 marks)

Section C (Paragraphs)

Answer any **four** questions.

Each question carries 5 marks.

21. What is optical activity? Explain with an example.
22. Explain Huckel's rule by taking benzenoid compound as example.
23. Alkyl halides undergo SN¹ and SN² reactions. Explain.
24. Write the preparation of 2-butanone from ethanol.
25. What is meant by hydrogenation of oils? Explain its application.
26. Discuss the physiological functions of nicotine and piperine?

(4 × 5 = 20 marks)

Section D (Essays)

Answer any **two** questions.

Each question carries 10 marks.

27. Discuss the type, hybridization and stability of reaction intermediates in organic reactions.
28. Write briefly on :
 - (i) Cleavage of ethers by acid.
 - (ii) Dow process for the preparation of phenol.
 - (iii) Preparation and uses of phenolphthalein.
29.
 - (i) Discuss the preparation of amines from nitro group by Hofmann bromamide reaction.
 - (ii) Compare the basicity of ammonia, methyl amine and aniline.
30. Write notes on :
 - (i) Muta rotation.
 - (ii) Industrial applications of cellulose.
 - (iii) Secondary structure of proteins.

(3 + 3 + 4 = 10 marks)

(4 + 6 = 10 marks)

(3 + 3 + 4 = 10 marks)

[2 × 10 = 20 marks]