



K18U 1880

Reg. No. :

Name :

III Semester B.Sc. Degree (CBCSS – Reg./Sup./Imp.)
Examination, November 2018
(2014 Admn. Onwards)
CORE COURSE IN CHEMISTRY
3B04 CHE : Organic Chemistry – I

Time : 3 Hours

Max. Marks : 40

Instruction : Answer **all** questions in **English** only.

SECTION – A

Objective type. **Each** carries **1** mark. Answer **all 4** questions.

1. Give the IUPAC names of the following :



2. Write the structural formula of the following :

a) 3-ethyl-2-methylpentane

b) 2-bromo-4, 4-dichloro-5, 5-dimethylheptane.

3. Which is the order of stability of the following cations ? $(\text{CH}_3)_3\text{C}^+$, $\text{CH}_2 = \text{CH}^+$, $\text{CH}_2 = \text{CH} - \text{CH}_2^+$.

4. How is ethanol converted to 1-propanol ?

(4×1=4)

SECTION – B

Short answer type. **Each** carries **2** marks. Answer **7** questions out of **10**.

5. Give one method to distinguish 1° , 2° and 3° alcohols.

6. Explain Claisen rearrangement with a suitable example.

7. Distinguish between electromeric and mesomeric effect.

8. Which is more stable 1-butene or 2-butene ? Why ?

P.T.O.



9. Account for the stability of cyclopentadienide ion.
10. What are nitrenes ? How are they generated ?
11. Account the formation of cis product on the hydroxylation of alkenes with OsO_4 .
12. How would you differentiate between 1-butyne and 2-Butyne.
13. How would you separate p-nitrophenol from o-nitro phenol ?
14. Differentiate between singlet and triplet carbenes. (7×2=14)

SECTION - C

Short essay/problem type. **Each** carries 3 marks. Answer 4 questions out of 6.

15. How are alkanes synthesized by Kolbe's electrolytic method ?
16. Which is the major product formed when 2, 2-dimethyl propanol is treated with conc. HCl. Give reason.
17. How are phenolic ethers synthesized ?
18. Discuss the method of synthesis of 1°, 2° and 3° alcohols using Grignard's reagent.
19. Elaborate on the E_1 and E_2 elimination with suitable examples.
20. How are ethylene dichloride and ethylidene chloride prepared ? (4×3=12)

SECTION - D

Long essay type. **Each** carries 5 marks. Answer 2 questions out of 4.

21. Explain the concept of hybridisation with reference to ethane, ethene and ethyne.
22. Discuss inductive effect and its influence in determining :
 - a) strength of carboxylic acids
 - b) basicity of amines
 - c) stability of carbo cations, carbanions and free radicals.
23. Outline the following syntheses :
 - a) Naphthalene Haworth's method
 - b) Glycerol
 - c) Picric acid
24. Discuss the following reactions :
 - a) pinacol-pinacolone rearrangement
 - b) Fries rearrangement
 - c) iodoform reaction
 - d) Walden inversion. (2×5=10)