



K22U 2774

Reg. No. : .....

Name : .....

Third Semester B.Sc. Degree (CBCSS – Supplementary)  
Examination, November 2022  
(2016 – 18 Admissions)  
CORE COURSE IN CHEMISTRY/POLYMER CHEMISTRY  
3B04 CHE/PCH : Organic Chemistry – I

Time : 3 Hours

Max. Marks : 40

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

## SECTION – A

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

- Give the IUPAC names of
  - $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$
  - $\text{CH}_3\text{CH}_2\text{CH}_2\text{COCH}_3$
- Give the structural formula of
  - 2-methyl cyclohexanone
  - 2, 2-dimethyl hexan-1-ol.
- Acetylene when passed through an iron tube at 800K will give
- Name the product obtained when 2-butyne is treated with hot alkaline  $\text{KMnO}_4$ . (4×1=4)

## SECTION – B

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

- Chloroacetic acid is stronger than acetic acid. Why ?
- What is haloform reaction ? Explain.
- Explain Karasch effect.
- How are cresols synthesized ?
- Outline the steps involved in the conversion of 1-butanol to 1-propanol.

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- Give the method of preparation of
  - ethylene dichloride and
  - ethylidene chloride.
- Mention one example with mechanism for an electrophilic substitution.
- Discuss the mechanism of Kolbe's electrolytic method.
- Why are phenols acidic ?
- Explain Fries rearrangement with a suitable example. (7×2=14)

## SECTION – C

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

- Write short notes on :
  - Resonance
  - Hyperconjugation
  - Electromeric effect.
- Discuss Hoffmanns and Saytzeff rule with suitable examples.
- What are the products obtained when alkenes and alkynes are subjected to ozonolysis ?
- Discuss any two methods to distinguish primary, secondary and tertiary alcohols.
- Explain 1, 2 and 1, 4 addition of 1, 3-butadiene.
- Briefly explain E1 and E2 reactions. (4×3=12)

## SECTION – D

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

- Discuss  $sp$ ,  $sp^2$  and  $sp^3$  hybridization with suitable examples.
- Discuss the following synthesis
  - Haworth synthesis of naphthalene
  - Phenol from cumene and
  - Anthracene from benzyl chloride.
- Discuss the mechanism and stereochemistry of  $S_N1$  and  $S_N2$  reactions of alkyl halides.
- How is glycerol manufactured from fats and oils ? Discuss the reaction of glycerol with
  - $\text{KHSO}_4$  and
  - Oxalic acid at  $110^\circ\text{C}$  and  $220^\circ\text{C}$ . (2×5=10)