



K25U 2912

Reg. No. :

Name :

III Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Supplementary/
Improvement) Examination, November 2025
(2019 to 2023 Admissions)

CORE COURSE IN CHEMISTRY/POLYMER CHEMISTRY
3B04CHE/PCH : Organic Chemistry – I

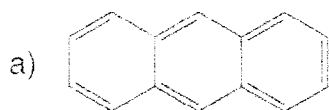
Time : 3 Hours

Max. Marks : 40

SECTION – A

Very short answer type. **Each** question carries **1** mark. Answer **all 4** questions.

1. Predict the aromatic nature of the following compounds.



2. Draw the Newman projection of the least stable conformation of ethane.
3. Give the monomer unit of BUNA-S.
4. Give the preparation of Aluminium Isopropoxide. (4×1=4)

SECTION – B

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

5. Compare the acidic strength of chloroacetic acid and acetic acid and justify your answer.
6. Explain the structure and hybridization of singlet and triplet carbene.
7. Name two heterocyclic compounds that are aromatic. Explain their aromaticity on the basis of Huckel's rule.
8. Explain the term ortho/para ratio.

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9. Distinguish between conformational and configurational isomers.
10. Explain the term specific rotation and racemic mixture.
11. Give the importance of vulcanization and explain it.
12. Briefly explain conducting polymers with examples.
13. Distinguish between number average molecular weight and weight average molecular weight.
14. Suggest a method to synthesis Malachite green and Alizarin. (7×2=14)

SECTION – C

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

15. Discuss any three methods to determine the reaction mechanism.
16. Explain mesomeric effect with an example.
17. Draw the two stable conformations of methyl cyclohexane and compare its stability.
18. Draw the R and S form of Lactic acid and explain Cahn-Ingold and Prelog rule.
19. Write a brief note on edible dyes with examples.
20. Explain Reformatsky reaction with an application. (4×3=12)

SECTION – D

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

21. Discuss the structure and stability of carbocations and carbanions.
22. Explain the mechanism of bromination and Friedel-Craft's alkylation of benzene.
23. Illustrate the optical isomerism in allenes and biphenyls.
24. a) Discuss any two synthetic applications of diazo methane and wittig reagent.
b) Suggest a method to convert ethyl acetoacetate to the following products :
 - i) Succinic acid
 - ii) Crotonic acid
 - iii) Adipic acid.(2×5=10)