

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2025

(Regular/Improvement/Supplementary)

CHEMISTRY

GCHE4B04T: ORGANIC CHEMISTRY– I

Time: 2 Hours

Maximum Marks: 60

SECTION A: Answer the following questions. Each carries *two* marks.

(Ceiling 20 marks)

1. What are the products obtained when 2-bromopropane is heated with alcoholic KOH?
2. State Huckel's rule.
3. Distinguish between electrophiles and nucleophiles.
4. What are free radicals? Give one method of preparation of free radical.
5. Define the terms a) racemization b) resolution.
6. Draw the Newman projections of the conformations of propane.
7. State whether the following molecule will exhibit optical isomerism:
CH3-CHOH-COOH. Justify your answer.
8. Write any one method to convert propyne to propene.
9. What is Wurtz reaction?
10. Name any two groups which show +I effect.
11. What are deactivating groups? Give two examples.
12. Draw the structures of a) pyridine b) thiophene

SECTION B: Answer the following questions. Each carries *five* marks.

(Ceiling 30 marks)

13. Discuss the optical isomerism of glyceraldehyde.
14. Explain the Paal-Knorr Synthesis of Furan.
15. Distinguish between *enantiomers*, *diastereomers* and *mesocompounds*.
16. State and explain Markownikoff's rule with example.
17. Which is more acidic acetylene or ethylene? Justify your answer.
18. Explain the stability order of 1°, 2° and 3° carbanions.
19. Give the mechanism of sulphonation of benzene.

SECTION C: Answer any *one* question. The question carries *ten* marks.

20. Illustrate the conformational isomerism in n-butane and explain the relative stability of its conformers.
21. Explain a) Clemmensen reduction b) ozonolysis and c) Corey House reaction

(1 × 10 = 10 Marks)