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Name.....

Reg. No.....

**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2026**

Chemistry

CHE 4B 04—ORGANIC CHEMISTRY—I

(2019 Syllabus)

Time : Two Hours

Maximum : 60 Marks

Section A (Short Answers)*Answer all questions.**Each question carries 2 marks with ceiling of marks 20.*

1. What are Carbenes ? How are they prepared ?
2. Among acetic acid and formic acid, which is more acidic and why ?
3. Explain the relative stabilities of butene and 2-butene.
4. What are meso compounds ?
5. What is meant by enantiomeric excess ?
6. Write notes on the conformations of ethane.
7. How alkanes are prepared from carbonyl compounds ?
8. What is Baeyer's reagent ? What is its use ?
9. What is Walden inversion ?
10. Among cyclopropenyl cation or cyclopropenyl anion, which is aromatic and why ?
11. What is the role of anhydrous AlCl_3 in Friedel Crafts reaction ?
12. Why methoxy groups are termed as activating substituents ?

(Ceiling of marks : 20)

Turn over

Section B (Short Answers)

Answer any **seven** questions.

Each question carries 5 marks with ceiling of marks 30.

13. What is mesomeric effect ? Illustrate using suitable examples.
14. Compare the stability of toluene, ethyl benzene and tert-butyl benzene.
15. Explain Baeyer's strain theory.
16. Write notes on the conformations of cyclohexane.
17. Discuss S_N1 and S_N2 mechanisms with stereochemical aspects of alkyl halides.
18. Explain elimination-addition (benzyne intermediate) mechanism.
19. Write notes on the Birch reduction of benzene.

(Ceiling of marks : 30)

Section C (Essay)

Answer any **one** question.

The question carries 10 marks.

20. Explain the resolution methods used for the separation of enantiomers from a racemic mixture.
21. Discuss the mechanism of nitration, halogenation, sulphonation and Friedel-Craft's alkylation of benzene.

(1 × 10 = 10 marks)