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3518 (Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION, APRIL 2021

Chemistry

CHE 4B 04—ORGANIC CHEMISTRY-I

me : Two Hours Maximum : 60 Marks

Section A (Short Answers)

Answer at least **eight** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 24.

1. What are the limitations of Kekule's structure ?
2. Which compound is easily nitrated- benzene or nitrobenzene ? Substantiate your answer.
3. What is Birch reduction ?
4. Why-OH group is ortho- para orienting ?
5. Predict the product in the nitration of methyl benzene.
6. State and explain Saytzeff's rule.
7. Explain the aromaticity of tropylium ion on the basis of Huckel's rule.
8. What are annulenes ? Give two examples of annulenes that are aromatic.
9. Is anthracene aromatic ? Justify your answer.
10. What are carbenes ? Give two examples.
11. Which is a stronger acid ? Acetic acid or formic acid ?
12. What are the consequences of intermolecular hydrogen bonding ?

(8 x 3 = 24 marks)

Section B (Paragraph)

Answer at least **five** *questions.*
Each question carries 5 marks.
All questions can be attended.
Overall Ceiling 25.

13. Draw the Newman projections of conformers of butane. Represent the stability of the conformers in a potential energy diagram.
14. Distinguish between enantiomers and diastereomers.

Turn over

15. What is steric effect ? Explain its effect in determining the basicity of 1°, 2°, 3° amines.

16. Discuss hyperconjugation and its significance with illustrative examples.

17. What is meant by Kharasch effect ? Explain the mechanism with an example.

18. Explain the hydroboration-oxidation reaction of alkenes with a suitable example.

19. Halogens are electron withdrawing yet they direct the incoming electrophile to ortho-para Why ?

(5 × 5 = 2

Section C (Essays)

Answer any **one** *question.*
The question carries 11 *marks.*

20. Discuss the different methods of resolution of a racemic mixture.

21. Illustrate the stereochemical aspects of S_N1 and S_N2 mechanisms. Also discuss the effect of s structure, solvent, nucleophile and leaving group.

(1 × 11 = 11