

21U405

(Pages: 2)

Name:

Reg.No:

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2023

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U CHE4 B04 - ORGANIC CHEMISTRY - I

(Chemistry - Core Course)

(2019 Admission onwards)

Time : 2.00 Hours

Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. What are electrophiles? Give two examples.
2. Which is weaker acid- acetic acid or chloro acetic acid? Justify your answer.
3. Name two groups which show -I effect.
4. How can maleic acid be converted to fumaric acid?
5. Give two examples for molecules exhibiting optical isomerism.
6. What is external compensation?
7. What is an elimination reaction? Give an example.
8. What is meant by Sabatier-Senderens reduction?
9. What is E2 reaction?
10. Explain Kolbe's electrolysis with an example.
11. What is the tropylium ion? Explain its aromaticity on the basis of Huckel's rule.
12. What is meant by the term aromaticity?

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

Answer *all* questions. Each question carries 5 marks.

13. Arrange ammonia, methylamine, dimethylamine and trimethyl amine in the increasing order of their basicities. Explain the theoretical basis of your answer.
14. Explain the stability of cyclopentadienyl anion.
15. What is a racemic mixture? How does it differ from a meso form? Explain with examples.

16. When 3, 3 dimethyl butane 2-ol undergoes dehydration, the major product is 2, 3 dimethyl but-2-ene. Explain this observation.
17. Discuss the potential energy profile for S_N2 reaction with a suitable example.
18. Explain according to Huckel's rule how indole and pyridine become aromatic.
19. What is meant by nitration? Discuss the mechanism of nitration of benzene.

(Ceiling: 30 Marks)

Part C (Essay questions)

Answer any *one* question. The question carries 10 marks.

20. Discuss in detail, the optical isomerism of tartaric acid.
21. Explain addition-elimination mechanism of nucleophilic aromatic substitution reactions.

(1 × 10 = 10 Marks)
