

22U405

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Name:

Reg.No:

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2024

(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. Name two groups which show +I effect.
2. What is meant by steric effect?
3. What is meant by resonance effect?
4. Draw the structures of maleic acid and fumaric acid. How they can be distinguished?
5. What is meant by chirality?
6. Explain the term racemic mixture.
7. What is Lindlar's catalyst? What is its use in organic synthesis?
8. What is E1 reaction?
9. How is propanone converted to propane?
10. What is SN₂ reaction?
11. Show that benzene is aromatic based on Huckel's rule.
12. Give two examples for meta directing group.

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

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

13. What is the order of stability of propene, but-1-ene and but-2-ene? Why?
14. Explain how mesomeric effect influences the pi- electron density in aniline.
15. Draw the conformations of methylcyclohexane and comment on their relative stabilities.

16. When 3, 3 dimethyl butane 2-ol undergoes dehydration, the major product is 2, 3 dimethyl but-2-ene. Explain this observation.
17. What is peroxide effect? Explain why it is shown only by HBr.
18. Name and formulate two heterocyclic compounds that are aromatic. Explain their aromaticity on the basis of Huckel's rule.
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. Explain the terms electrophile, nucleophile and free radicals with suitable examples.
21. Discuss the factors affecting the reactivity of alkyl halides in SN2 reactions.

(1 × 10 = 10 Marks)
