22U613 (Pages: 2) Name : .....

Reg No. : .....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2025

(CBCSS-UG)

(Regular/Supplementary/Improvement)

CC19U CHE6 B10 - ORGANIC CHEMISTRY - III

(Chemistry - Core Course)

(2019 Admission onwards)

Time: 2 Hours Maximum: 60 Marks

Credit: 3

Part A (Short answer questions)

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

1. What is hyperchromic shift?
2. Explain the difference in carbonyl stretching freequencies of acetone and acetophenone.
3. What is meant by inversion of cane sugar?
4. What are oligosaccharides? Give two examples.
5. Give two examples for acidic aminoacids.
6. Describe any one colour test for proteins.
7. What are lipids?
8. How many NMR signal will be obtained from the compond CH_3-O-CH_2-CH_3?
9. Name any two monoterpenoids and their chief sources.
10. Give two uses of eucalyptus oil.
11. What are suprafacial and antarafacial rearrangements?
12. State whether (i) [2s +2s] cycloaddition and (ii) [4s +2s] cycloaddition are symmetry allowed or not under thermal and photochemical conditions

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

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

13. Compare the characteristic features of the IR spectra of aliphatic aldehydes and ketones.
14. State the Woodward-Hoffmann rule for cycloaddition reactions.
15. Give two test for testing the presence of sugar in urine and explain the chemistry of the reactions involved.

16. What are the differences between DNA and RNA.

17. Discuss the classifications of the steroids.

18. What are the principal sources of limonene? Give the structure of limonene and mention its uses.

19. Explain with examples how electron-withdrawing and electron-releasing substituents on the diene and dienophile affect the Diels-Alder reactivity.

(Ceiling: 30 Marks)

Part C (Essay questions)

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

20. Briefly discuss how a combination of the UV, IR NMR tecniques can be helpful in the elucidation of structures of organic compounds taking illustative examples of (a) acetic acid (b) acetophenone

21. Explain the significance and chemistry behind the following tests for carbohydrates with suitable examples: (a) Tollen's test (b) Fehling's test (c) Benedict's test.

(1 × 10 = 10 Marks)

****