19U612 (Pages: 2) Name: .....

Reg.No: .....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2022

(CBCSS - UG)

CC19U CHE6 B10 - ORGANIC CHEMISTRY - III

(Chemistry - Core Course)

(2019 Admission - Regular)

Time : 2.00 Hours Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

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

1. What is auxochromes? Give two examples.
2. What is hyperchromic shift?
3. Name an important source and disease caused by the deficiency of vitamin C.
4. What are the products obtained when sucrose undergoes hydrolysis in presence of the enzyme invertase?
5. What is meant by denaturation of a protein?
6. Name the purine bases found in DNA.
7. Name an important source and disease caused by the deficiency of vitamin D.
8. Draw the cyclic structure of sucrose.
9. Give two uses of lemongrass oil.
10. How are terpenoids isolated from essential oils?
11. Give an example of [4 + 2] cycloaddition and give its equation. What is the stereochemistry of addition?
12. Mention the symmetry criteria for [2 + 2] cycloaddition reactions under different reaction conditions.

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

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

13. Write short note on the characteristic features of the IR spectra of aliphatic and aromatic esters.
14. Highlight and distinguish features of the IR spectra of phenols as compared to that of aliphatic alcohols.

15. Discuss the structure of starch and cellulose.

16. Explain the ninhydrin test for proteins and its chemistry.

17. Explain the term iodine value with respect to fats and oils.

18. Discuss the physiological activities of nicotine, coniine, and quinine,

19. Discuss the FMO analysis of a familiar [3, 3] sigmatropic rearrangement and arrive at conclusions regarding the allowed and forbidden pathways under different conditions.

(Ceiling: 30 Marks)

Part C (Essay questions)

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

20. What is GLC? Explain its principle and how it is carried out.

21. Explain the following process with suitable examples, providing the equations:
    (a) Killiani-Fischer synthesis (b) Ruff degradation

(1 × 10 = 10 Marks)

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