

21U612

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Name:

Reg.No:

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2024

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U CHE6 B10 - ORGANIC CHEMISTRY - III

(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. How is R_f value useful in the characterisation of a compound?
2. What is meant by spin spin splitting in NMR spectroscopy?
3. How does glucose react with Fehling's solution?
4. Name and formulate the product obtained when glucose reacts with hydroxylamine.
5. Name two kind of secondary structure normally found among proteins
6. What is a zwitter ion?
7. Name a water soluble vitamin. Give its chemical name.
8. Name an important source and disease caused by the deficiency of vitaminE.
9. Comment on the physiological activity of coniine.
10. Draw the structure of limonene. What are its important natural sources?
11. What does the notation [4s+ 2s] mean with regard to a cycloaddition reaction?
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. What are the characteristic bands observed in the IR spectrum of a primary amides?
14. Highlight the distinct features of the IR spectra of phenols as compared to that of aliphatic alcohols.
15. Is fructose a reducing sugar? Explain your answer on the basis of structural rearrangements
16. Illustrate with an example the amino malonate sythesis of amino acids.

17. Explain the term saponification value with respect to fats and oils.
18. What is vulcanization? What are its advantages?
19. Explain the terms suprafacial and antarafacial sigmatropic shifts.

(Ceiling: 30 Marks)

Part C (Essay questions)

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

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