(Pages : 3)

T – 2561

Reg. No. : .....

Name : .....

Fourth Semester B.Sc. Degree Examination, July 2024

First Degree Programme under CBCSS

Chemistry

Complementary Course for Botany

CH 1431.3 : ORGANIC CHEMISTRY

(2020 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions. Each question carries **1** mark.

1. State special isoprene rule.
2. What are essential amino acids'? Give an example.
3. What is meant by resolution of a racemic mixture?
4. Define the term isoelectric point as applied to amino acid.
5. What are meso compounds?
6. How does glucose react with Fehling's solution?
7. What are the factors affecting collection of crude drugs?
8. Define R_f value.
9. Name one disaccharide and give its molecular formula.
10. Which vitamin curries the name sunshine vitamin? Why?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer any **eight** questions. Each question carries **2** marks.

11. Represent any one synthesis of glycine.

12. Explain the term genetic code.

13. What is meant by mutarotation?

14. How are terpenoids isolated from essential oils?

15. Write the structure and sources of vitamin C.

16. What are the stationary and mobile phases in paper chromatography?

17. What are epimers? Give example.

18. Give any two limitations of adsorption chromatography.

19. What is meant by chirality?

20. What are the structures of the enantiomeric forms of glyceraldehyde?

21. Define ash value. Highlight its significance.

22. Comment on the scope and importance of pharmacognacy.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. Each question carries **4** marks.

23. Outline the main steps involved in the processing of crude drugs.

24. Discuss briefly the principle and applications of zone electrophoresis.

25. Write a note on the optical isomerism of lactic acid.

26. Explain the double helical structure of DNA.

27. What are peptides? Discuss the carobobenzoxy method for their synthesis?

28. Elucidate the structure of conine.

29. Discuss the structure of starch and cellulose.

30. Distinguish between the terms enantiomers and diastereomers.

31. Define the term saponification value for a sample of fat or oil. What is the significance of this the value regarding the quality of the fat or oil.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks.

32. (a) What is HPLC? Explain its principle and how it is carried out.

    (b) Explain how ion exchange chromatography is carried out. Give any two of its applications.

33. Discuss the primary, secondary and tertiary structure of proteins.

34. (a) Explain with suitable equations how the following conversions can be effected:

        (i) Glucose to Fructose

        (ii) Fructose to Glucose.

    (b) Write short note on cahn–In gold–prelog rules and R–S notations.

35. Discuss the various classifications of crude drugs.

(2 × 15 = 30 Marks)
