Reg. No ..... Name **25U444**

B.Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2025

SEMESTER 4 : CHEMISTRY (COMPLEMENTARY FOR BOTANY AND ZOOLOGY)

COURSE : **19U4CPCHE4.2 : ADVANCED BIO-ORGANIC CHEMISTRY**

(For Regular 2023 Admission and Improvement /Supplementary 2022/2021/2020/2019 Admissions)

Time : Three Hours Max. Marks: 60

PART A

Answer All (1 mark each)

1. What is epimerisation?
2. Write the name of the N-terminal and C-terminal amino acid residues in the given tripeptide.
   Ala – Gly – Phe
3. Define R_f value in chromatography.
4. Give the product obtained by the oxidation of citral with $KMnO_4$
5. What are sulphonamides?
6. In mammal, secretion of hormones is controlled by----------
7. Give the zwitter ion structure of glycine.
8. Give two important uses of ion exchange chromatography.

(1 x 8 = 8)

PART B

Answer any 6 (2 marks each)

9. Name the alkaloid present in pepper?
10. What are the functions of proteins?
11. Explain the following giving reasons?
    a) The iodine value of coconut oil is 9 while that of linseed oil is 190
    b) Oils and fats develop an unpleasant odour on exposing to moist air for a long time?
12. Explain why glucose does not give Schiff's test?
13. Explain the principle involved in thin layer chromatography.
14. What is saponification?
15. Write the structure of nicotine.
16. What is the mode of antibacterial action of ampicillin?

(2 x 6 = 12)

PART C

Answer any 4 (5 marks each)

17. Write the different steps involved in the synthesis of a tripeptide having three different amino acid units.
18. Distinguish between amylose and amylopectin.
19. Write a note on antacids focusing on its uses.
20. Mention the physiological importance of cholesterol.
21. Mention two general characteristics of alkaloids.
22. Write briefly on column chromatography.

(5 x 4 = 20)

PART D

Answer any 2 (10 marks each)

23. Write a note on the chemical properties of amino acids.

24. How are the following conversions made?
    a) D- glucose to D-fructose
    b) D- fructose to D-glucose

25. (a)Describe the following with an example each.
    (i) Antibiotics (ii) Antipyretics and Analgesics
    (iii) Antimalarials (iv) Anticancer drugs
    (b) Comment on the mode of action of sulpha drugs.

26. What are vitamins? Give the structures of Vitamin A, B and C. Discuss their biological functions?

(10 x 2 = 20)