Reg. No ..... Name **26U625**

B. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2026

SEMESTER 6 : CHEMISTRY

COURSE : **19U6CRCHE10 : ORGANIC CHEMISTRY – IV**

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

Time : Three Hours Max. Marks: 60

PART A

Answer All (1 mark each)

1. Cytosine pairs with which base?
2. The change in specific rotation with time is called
   a) Mutarotation b) Specific rotation c) Dextrorotation d) Levorotation
3. What is the product obtained when Citral is oxidised using alkaline $KMnO_4$?
4. The deficiency of phenylalanine hydroxylase causes congenital disease called .....
5. A cyclic stereoisomer that differs in the configuration of the chiral carbon atom produced by ring formation is
   a) Epimers b) Anomers c) Optical isomers d) Enantiomers
6. Vitamin D is also known as .....
7. Name a chemical test to show Geraniol contains a primary alcohol.
8. Pyrrole on oxidation with CrO_3 /CH_3COOH yields.....

(1 x 8 = 8)

PART B

Answer any 6 (2 marks each)

9. Explain two important physiological functions of proteins.
10. Sucrose is a non-reducing sugar while both glucose and fructose are reducing in nature. Explain.
11. Define Reichert-Meissel (R-M) Value.
12. Write the difference between α Helix and β-pleated configuration of proteins.
13. What are HDL and LDL? Explain their functions.
14. Draw the Haworth structure of maltose.
15. What do you mean by enzyme specificity ? Give an example.
16. The electrophilic substitution reactions of furan and other five membered heterocyclic compounds are not carried out in acidic medium. Why?

(2 x 6 = 12)

PART C

Answer any 4 (5 marks each)

17. Briefly explain mutarotation.
18. Explain the following terms used in lipid chemistry. Mention its significance.
    a) Iodine Value b) Acid Value
19. Hoffmann Exhaustive Methylation has been an important tool in the study of the structure of alkaloids. Justify the statement by examples of two alkaloids.
20. Give the synthesis of Furfural and 2-phenyl furan from Furan.

21. Write a note on the classification of proteins based on physiological functions.

22. Draw the Haworth structure of α-D Glucopyranose and β -D Fructofuranose.

(5 x 4 = 20)

PART D
Answer any 2 (10 marks each)

23. Elucidate the structure of Sucrose.

24. Discuss the structure elucidation of Geraniol.

25. a) Explain Fischer Indole Synthesis .
    b) Give the reactions of Indole with
    i) SO_2Cl_2 ii) $CHCl_3$/KOH iii) HCN/HCl iv) SO_3/pyridine v) Sn/HCl

26. Explain primary, secondary, tertiary and quarternary structure of proteins.

(10 x 2 = 20)