



K26U 1013

Reg. No. :

Name :

IV Semester B.Sc. Degree (CBCSS – OBE – Supplementary/Improvement)
Examination, April 2026
(2020 to 2023 Admissions)

**COMPLEMENTARY ELECTIVE COURSE IN CHEMISTRY/
POLYMER CHEMISTRY**

4C04CHE/PCH(BS) : Chemistry (for Biological Sciences)

Time : 3 Hours

Max. Marks : 32

Instruction : Write only in English.

**SECTION – A
(Very Short Answer Type)**

Answer **all 5** questions. **Each** carries **1** mark.

1. What is the basic monomer unit of chitin ?
2. What is the structure of pyridine ?
3. Give an example for zwitterion.
4. Give the structure of testosterone.
5. Anemia occurs due to the deficiency of _____ .

(5×1=5)

**SECTION – B
(Short Answer Type)**

Answer **any 4** questions out of 6. **Each** carries **2** marks.

6. What is meant by Mutarotation ?
7. How can chitin be detected in biological samples ?
8. Why is pyrrole more reactive towards electrophilic substitution than benzene ?

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K26U 1013



9. Discuss effect of hydrogen bonding in the structure of DNA.
10. How does Sorensen's titration help to determine the acidity of amino acids ?
11. Define K_m (Michaelis constant) and its biological importance. (4×2=8)

**SECTION – C
(Short Essay Type)**

Answer **any 3** questions out of 5. **Each** carries **3** marks.

12. What are purines and pyrimidines ? Give examples of each.
13. What role does mRNA, tRNA and rRNA play in protein synthesis ?
14. Explain the principle of paper chromatography in amino acid separation.
15. What is nitrogen fixation ? What role do metal-containing enzymes play in nitrogen fixation ?
16. What is the Bohr effect and how does it influence oxygen transport ? (3×3=9)

**SECTION – D
(Long Essay Type)**

Answer **any 2** questions out of 4. **Each** carries **5** marks.

17. Explain the steps involved in the biosynthesis of proteins, including transcription and translation.
18. Discuss the various biochemical tests used to detect proteins and their significance.
19. Classify vitamins and discuss their structures and biological functions.
20. Explain the function and significance of the Na^+/K^+ pump in cellular physiology. (2×5=10)