K25U 0813

Reg. No. : .....

Name : .....

IV Semester B.Sc. Degree (C.B.C.S.S.-OBE – Regular/Supplementary/ Improvement) Examination, April 2025
(2019 to 2023 Admissions)
COMPLEMENTARY ELECTIVE COURSE IN CHEMISTRY/POLYMER CHEMISTRY
4C04CHE/PCH(BS) : Chemistry (For Biological Sciences)

Time : 3 Hours Max. Marks : 32

SECTION – A

Very short answer type. Answer **all 5** questions. **Each** carries **1** mark.

1. What is the basic monomer unit of cellulose ?
2. Which metal stabilizes the structure of ribosomes and nucleic acids ?
3. Name any two biochemical tests used to detect proteins ?
4. What is the chemical structure of Vitamin A ?
5. Vitamin B_{12} contain _____ metal ion. **(5×1=5)**

SECTION – B

Short answer type. Answer **any 4** questions out of 6. **Each** carry **2** marks.

6. What are epimers ? Give an example.
7. Arrange pyrrole, furan and thiophene in increasing order of stability and explain why ?
8. Why does pyridine undergo nucleophilic substitution more easily than benzene ?
9. Explain DNA replication.
10. What factors affect enzyme activity ?
11. How does Vitamin C function as an antioxidant. **(4×2=8)**

P.T.O.

SECTION – C

Short essay type. Answer **any 3** questions out of 5. **Each** carry **3** marks.

12. Describe the conversion of glucose to fructose.

13. What is the structural difference between quinoline and isoquinoline ? Compare their basicity.

14. How does RNA differ from DNA in terms of structure and function ?

15. Explain the principle behind Sorensen's formal titration method.

16. What is ferritin, and what is its function ? **(3×3=9)**

SECTION – D

Long essay type. Answer **any 2** questions out of 4. **Each** carry **5** marks.

17. a) Describe the importance of complementary base pairing in nucleic acids and its role in DNA replication and RNA function.

    b) How does the quaternary structure of hemoglobin contribute to its function ?

18. Discuss the classification of amino acids.

19. Describe the mechanism of enzyme action using the lock-and-key- and induced fit models.

20. Explain the structure and function of hemoglobin and myoglobin. **(2×5=10)**

———————