Reg. No…… Name……..……

BA, B SC, B COM DEGREE END SEMESTER EXAMINATION - OCTOBER 2025

UGP (HONS.) SEMESTER - 3: DISCIPLINE SPECIFIC COURSE

COURSE: 24UCHEDSC208 - ELEMENTS OF BIOCHEMISTRY

(For Regular 2024 Admission)

Time: 1.5 Hours Max. Marks: 50

PART A – One Word Questions

(Answer all questions. Each question carries 1 mark)

1. Define rate constant of a reaction. (R, CO1)
2. Give the expression for the half life period of a first order reaction. (U, CO1)
3. How is Ramachandran plot useful in depicting the structure of proteins? (U, CO1)
4. Name the chromatographic technique used to separate a mixture of ions of similar charges. (U, CO2)
5. Give an example for a metalloenzyme containing Zinc. (U, CO3)
6. Define a zwitter ion. Give an example. (U, CO3)
7. What are the main functions of DNA? (U, CO3)
8. Mention any two biological activity of vitamin C. (R, CO4)

(1 x 8 = 8)

PART B – Short Answer Questions

(Answer any five questions. Each question carries 3 marks)

9. Explain the salient features of enzyme catalysis. (U, CO1)
10. Differentiate between order and molecularity of a reaction. (U, CO1)
11. Give a short note on FTIR. (U, CO2)
12. Explain the role of haemoglobin in oxygen transport. (U, CO3)
13. List out the general characteristics of amino acids. (U, CO3)
14. Write a short note on i) polypeptides ii) prosthetic group (U, CO3)
15. Briefly explain the chemical composition and structure of a nucleotide. (U, CO3)
16. What are steroids? Write a brief description on cholesterol. (R, CO4)

(3 x 5 = 15)

PART C – Short Essay Questions

(Answer any two questions. Each question carries 6 marks)

17. Describe the structure and denaturation of proteins. (R, CO3)
18. Suggest a method for the preparation of the amino acids: Glycine and Alanine. (R, CO3)

19. Compare the structures of DNA and RNA. (U, CO3)
20. Explain the saponification value and iodine value for the analysis of fats and oils. (R, CO4)

(6 x 2 = 12)

PART D – Long Essay Questions

(Answer any one question. Each question carries 15 marks)

21. Outline the principle, instrumentation and applications of HPLC, GC and TLC. (U, CO2)
22. With the help of a Z-scheme, explain PS-I, PS-II and electron transport in photosynthesis. (U, CO3)

(15 x 1 = 15)