

MSc DEGREE END SEMESTER EXAMINATION- MARCH 2025**SEMESTER 4 : PHARMACEUTICAL CHEMISTRY****COURSE : 21P4CPHT13EL : BIOCHEMISTRY AND BACTERIOLOGY***(For Regular - 2023 Admission and Supplementary 2022/2021 Admissions)*

Duration : Three Hours

Max. Weights: 30

PART A**Answer any 8 questions****Weight: 1**

1. Why are pharmaceutical solutions intended for application to delicate membranes of the body and of the blood require to be isotonic? (U, CO 3)
2. What is the role of ATP in bioenergetic processes. (U, CO 1)
3. Briefly write on the configuration and optical properties of natural amino acids. (R, CO 1)
4. Give the classification of prostglandins? (R, CO 2)
5. Discuss the relevance of cellulose in pharmaceutical chemistry. (U, CO 1)
6. What are nucleotide diphosphates and nucleotide triphosphates (U, CO 1)
7. What is allosteric inhibition? (U, CO 1)
8. Give the structure of FAD? (R, CO 1)
9. What are the results obtained after staining of bacteria? (An, CO 4)
10. Describe the sequence of structural changes associated with the hydrolysis of proteins. (U, CO 1)

(1 x 8 = 8)**PART B****Answer any 6 questions****Weights: 2**

11. Explain galactose metabolism. (R, CO 2)
12. Explain the relevance of proteins in pharmaceutical chemistry. (U, CO 4)
13. Describe recombinant DNA technology. Explain genomic library (R, CO 1)
14. Discuss ornithine cycle. (An, CO 2)
15. What are the clinical and biological applications of buffers ? (A, CO 3)
16. Illustrate Sanger's and Edman's methods of amino acid sequencing. (U, CO 1)
17. What is denaturation? Give the physical, biological and chemical changes associated with it. (U, CO 1)
18. Elaborate on the applications of DNA recombinant technology (U, CO 1)

(2 x 6 = 12)**PART C****Answer any 2 questions****Weights: 5**

19. Describe the complete biochemistry of DNA. Focus the discussion on structure, replication and functions. (An, CO 1)
20. Descibe fructose metabolism?. (R, CO 2)
21. a) Write a note on structure and functions of NAD⁺ and NADP⁺ b) Explain biological oxidation? c) What are cytochromes? (U, CO 1)
22. Explain in detail about a) Classification of Microbes and b) Isolation and characterisation of microbes. (U, CO 4)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Describe the structure and functions of biomolecules, amino acids, proteins, enzymes, nucleic acids and hormones.	U	2, 3, 5, 6, 7, 8, 10, 13, 16, 17, 18, 19, 21	25
CO 2	Explain the chemical processes involved in the biological oxidation and metabolism.	U	4, 11, 14, 20	10
CO 3	Illustrate the application of buffer systems in pharmaceutical chemistry.	A	1, 15	3
CO 4	Describe the principles of microbiology and immunology	U	9, 12, 22	8

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;