

Reg. No

Name

23P4006

M. Sc. DEGREE END SEMESTER EXAMINATION : MARCH 2023

SEMESTER 4 : PHARMACEUTICAL CHEMISTRY

COURSE : 21P4CPHT13EL : BIOCHEMISTRY AND BACTERIOLOGY

(For Regular - 2021 Admission)

Duration : Three Hours

Max. Weights: 30

PART A

Answer any 8 questions

Weight: 1

1. What is the role of transketolase in HMP shunt? Name the coenzyme of transketolase. (R, CO 2)
 2. What are the functions of adrenocorticotrophic hormones? (U, CO 1)
 3. What are coenzymes? Give one example? (U, CO 1)
 4. Explain the principle of tonicity of a solution (A, CO 3)
 5. What are the important uses of carbohydrates in pharmacy? (A, CO 1)
 6. What are perfect enzymes? (R, CO 1)
 7. Briefly describe the feedback mechanism for regulating the level of thyroid hormones. (A, CO 1)
 8. Distinguish between sterilisation and disinfection. (U, CO 4)
 9. Name the chemical interactions responsible for folding of proteins. (U, CO 1)
 10. What are simple proteins? Give two examples. (R, CO 1)
- (1 x 8 = 8)**

PART B

Answer any 6 questions

Weights: 2

11. What are enzyme immunological assays? Explain ELISA test (U, CO 1)
 12. Explain the role of pyridoxal phosphate (PLP) on transamination reactions. (U, CO 2)
 13. Explain gel-filtration and ion-exchange chromatographic techniques used for the separation and purification of proteins. (A, CO 1)
 14. Discuss the relevance of lipids in pharmaceutical chemistry. (U, CO 1)
 15. Discuss the secondary structure of proteins. (U, CO 1)
 16. Explain the connection between urea cycle and citric acid cycle. (A, CO 2)
 17. Give the functions of anterior pituitary hormones. (U, CO 1)
 18. What are buffer solutions? Which are the different types of buffers? Explain the mechanism of action of acidic buffer. (A, CO 3)
- (2 x 6 = 12)**

PART C

Answer any 2 questions

Weights: 5

19. Describe fructose metabolism?. (R, CO 2)
20. Explain in detail about a) Different stages involved in the bacterial growth and b) Staining of bacteria. (U, CO 4)

21. a) Write a note on classification of enzymes? b) What are allosteric enzymes? (c) Discuss about allosteric enzymes. (R, CO 1)
22. Describe the complete biochemistry of DNA. Focus the discussion on structure, replication and functions. (An, CO 1)
- (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, 9, 10, 11, 13, 14, 15, 17, 21, 22 | 27 |
| CO 2 | Explain the chemical processes involved in the biological oxidation and metabolism. | U | 1, 12, 16, 19 | 10 |
| CO 3 | Illustrate the application of buffer systems in pharmaceutical chemistry. | A | 4, 18 | 3 |
| CO 4 | Describe the principles of microbiology and immunology | U | 8, 20 | 6 |

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