

(iv) E. Fischer

5. Write short notes on the following (**Any three**) :

(6×3=18)

(i) Multienzyme complex

(ii) Artificial sweetener

(iii) Double reciprocal plot in enzyme kinetics

(iv) Hemoglobin

6. (a) Explain the following terms. Write examples and draw the structures (**Any two**) : (6×2=12)

(i) Zwitterion

(ii) Coenzyme

(iii) Rare amino acid

(b) Describe the structure and functions of glutathione. (6)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4122

H

Unique Paper Code : 2532011202

Name of the Paper : Biochemistry of Nucleic Acids and Proteins

Name of the Course : **B.Sc. (Hons.) Microbiology**

Semester : II

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt any **five** questions. **All** questions carry equal marks.

1. (a) Illustrate the titration curve of a monocarboxylic amino acid highlighting different ionic species obtained during the course of titration. (6)

(b) Describe the contribution of Watson and Crick in the development of field of Molecular Biology.

P.T.O.

What are the salient features of the model proposed by them? (2+4=6)

(c) Define the following terms citing an example : (2×3=6)

(i) Isozyme

(ii) Essential amino acid

(iii) Allosteric enzyme

2. (a) Discuss the salient features of a peptide unit with the help of a diagram. Describe super secondary or tertiary structure of a protein studied by you. (4+4=8)

(b) Explain how different interactions stabilize the double stranded DNA molecule. (6)

(c) Mention an example of each of the following (Any four). (1×4=4)

(i) A polar amino acid

(ii) An imino amino acid

(iii) A prosthetic group

(iv) A peptide hormone

(v) A non-protein amino acid

3. Differentiate between the following pairs of terms (Any three) : (6×3=18)

(i) Competitive and non-competitive enzyme inhibition.

(ii) α -helix and β sheet

(iii) m RNA and t RNA

(iv) A DNA and Z DNA

4. (a) Identify the pyrimidine base found exclusively in DNA. Draw the structure of the deoxyribonucleotide derived from it. (1+5=6)

(b) All enzymes do not follow Michaelis-Menten kinetics. Justify the statement. (6)

(c) Write the contributions of the following scientists (Any three) : (2×3=6)

(i) D. Koshland

(ii) Pauling and Corey

(iii) Thomas Cech