M.Sc. II Semester Examination, 2021

BIOTECHNOLOGY

Paper I

(Macromolecules and Enzymology)

Time : 3 Hours] [Maximum Marks : 80

Note : *All questions are compulsory. Question Paper comprises of 3 sections.* ***Section A*** *is objective type/multiple choice questions with no internal choice.* ***Section B*** *is short answer type with internal choice.* ***Section C*** *is long answer type with internal choice.*

SECTION 'A'
(Objective Type/Multiple Choice Questions)

Choose the correct answer : **1 × 8 = 8**

1. Which group is present in the structure of amino acids ?

(a) Hydroxyl group (b) Carboxyl group

(c) Amino group (d) Both (b) and (c)

2. Which amino acid has ketogenic as well as glucogenic products ?

(a) Tryptophan (b) Leucine

(c) Glycine (d) All of the above

3. Which of the following factors is not responsible for the denaturation of proteins ?

(a) Heat (b) Charge

(c) pH change (d) Organic solvents

4. _____is not a classified form of conjugated proteins :

(a) Lipoproteins (b) Glycoproteins

(c) Metalloproteins (d) Complete proteins

5. Coenzyme is :

(a) often a metal (b) always a protein

(c) often a vitamin

(d) always an inorganic compound

6. Blocking of enzyme action by blocking its active site is called as :

(a) allosteric inhibition

(b) feedback inhibition

(c) competitive inhibition

(d) Non-competitive inhibition

7. Which of the following is a chemical nucleolide sequencing method ?

(a) Sanger method

(b) Maxam-Gilbert method

(c) Edmans method

(d) Automated sequencing method

8. Entrapment can be achieved by using which of the following ways ?

(a) adsorption

(b) polymerized gel entropment

(c) membrane refinement

(d) Covelent binding

SECTION 'B' **6 × 4 = 24**

(Short Answer Type Questions)

Note : *Answer the following questions in 250 words.*

Unit I

1. Write a note on structure and properties of amino acids.

Or

Describe briefly structure of peptides and give examples of biologically important peptides.

Unit II

2. Write a note on structure and function of lipoprotein.

Or

Discuss denaturation of protein.

Unit III

3. Write about classification of enzymes.

Or

Write a note on enzyme inhibitron.

Unit IV

4. Write a note on Protein folding.

Or

Discuss protein-protein interaction.

SECTION'C' **12 × 4 = 48**

(Long Answer Type Questions)

Note : *Answer the following questions in 500 words.*

Unit I

1. Give an account of biosynthesis of amino acids with emphasis on serine and cysteine.

Or

Give a detailed account of fate of amino acids.

Unit II

2. Describe structure and classification of proteins.

Or

Discuss protein metabolism.

Unit III

3. Describe enzyme kinetics.

Or

Give an account of Allosteric enzyme, their structure and functions.

Unit IV

4. Describe nucleic acid sequencing methods.

Or

Give methods and applications of protein purification.

✪ ✪ ✪ ✪ ✪ c ✪ ✪ ✪ ✪ ✪