G-1/183/22

Roll No. .....

I Semester Examination, January 2022

M.Sc.

MICROBIOLOGY

Paper III

(Biomolecules and Enzymology)

Time : 3 Hours] [Max. 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 **1×8=8**

(Objective Type/Multiple Choice Questions)

Choose the correct answer :

1. Glycosidic linkage is an :

(a) Amide linkage (b) Ester linkage

(c) Ether linkage (d) Acetyl linkage

2. The anomeric carbon in D(+) Galactose is :

(a) C1 (b) C2

(c) C6 (d) C4

P.T.O.

3. Globular proteins are present in :

(a) Blood (b) Eggs

(c) Milk (d) All of these

4. Which one of the amino acids can be synthesized in the body ?

(a) Alanine (b) Valine

(c) Lysine (d) Histidine

5. If the DNA strand has N base sequence ATTGCC the mRNA will have :

(a) ATTGCA (b) UGGACC

(c) UAACGG (d) ATCGCC

6. Which of the following arm of t-RNA serve as site for attachment of amino acids :

(a) D-arm (b) Anticodon arm

(c) TΨC arm (d) Acceptor arm

7. Zymogen is :

(a) Enzyme poison

(b) Enzyme modulator

(c) Enzyme activator

(d) Enzyme precursor

8. Which Vitamin aids in Blood clotting ?

(a) Vitamin K (b) Vitamin C

(c) Vitamin A (d) Vitamin E

SECTION B **6×4=24**

(Short Answer Type Questions)

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

1. Distinguish homo and heteropolysaccharide with one example.

Or

Distinguish between A, B and zDNA.

2. Write short note on secondary structure of protein.

Or

How does a Ram Chandran plot helps in determining the structure of protein ?

3. Write a short note on Michaelis-Menton constant.

Or

Write a short note on competitive enzyme-inhibition.

4. Write short note on fat soluble Vitamin A and its biological importance.

Or

Write a note on chlorophyll structure and its importance.

SECTION C **12×4=48**

(Long Answer Type Questions)

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

1. Describe the structure and functions of Triglycerides and comment upon the physical properties depending upon basis of saturation/ unsaturation.

Or

Describe in detail structure and importance of *t*-RNA.

2. Identify the four levels of primary structure and explain, how the structure of protein affects its properties ?

Or

Define Isoelectric point and explain, how the isoelectric point of aminoacids are calculated.

3. Derive Michaelis menton equation for enzyme in steady state.

Or

Write a detailed note on classification and Nomenclature of enzyme.

4. Write a note on harmones secreted by pancrease.

Or

Write a note on structure of haemoglobin and its biological importance.

★ ★ ★ ★ ★ c ★ ★ ★ ★ ★