



**FC-144003**

Seat No. \_\_\_\_\_

**M. Sc. (Sem. IV) Examination**

**June/July - 2021**

**MSC0C-403 : Bio-Organic Chemistry  
(Old Course)**

Time : 2 Hours]

[Total Marks : 50

**Instructions :** (1) Answer any two from Question No.01 to 08. Each Question carries 18-18 marks.

(2) Question No.09 is compulsory and carry 14 marks.

**1** Answer the following :

- (A) Discuss the interaction of Water on the structure of biomolecules with suitable example.
- (B) Define buffer and buffer capacity. Discuss Henderson-Hasselbalch equation to check the behaviour of weak acid.

**2** (A) Discuss absorption transport mobilization and biochemical function of Vitamin-A.

- (B) Describe absorption transport, mobilization and biochemical function of Vitamin-K.

**3** Answer the following :

- (A) Define and classify peptides. Discuss Edman degradation for the determination of N-terminal amino acid with its significance.
- (B) What is Polypeptide linkage ? Discuss how Sanger's method is useful to identify the N-terminal residue.

**4** (A) What is enzyme inhibition ? Give an account of reversible enzyme inhibition with suitable example.

- (B) What are enzymes ? Classify them and draw diagram, discuss activation energy with reference to catalyst.

- 5 Answer the following :
- (A) Define polysaccharides and describe the structure of three homopolysaccharides.
  - (B) Give complete classification of carbohydrates and its general nomenclature.
- 6
- (A) Describe the structure of DNA and its replication.
  - (B) Give an account of structure, function and nomenclature of nucleotides.
- 7 Answer the following :
- (A) What are lipids ? Give classification of lipids with example of each class.
  - (B) Give biosynthesis of Fatty acid.
- 8
- (A) Give a brief account on the biological function of phospholipids and bile acids.
  - (B) Give account to check purity of Fats and oils atleast five parameters.
- 9 Answer the following :
- (1) How L(+) lactic acid is converted to L(+) alanine ?
  - (2) Give the source of carbohydrates.
  - (3) Give structure of Retinal.
  - (4) How can you define Vitamins ?
  - (5) Draw structure of Vitamin-C.
  - (6) What is fatty acids ?
  - (7) Give the types of enzyme inhibition.
  - (8) What are Anti-metabolites ?
  - (9) Define anti-oxidant.
  - (10) What are glycolipids and glycoproteins ?
  - (11) What is the function of messenger RNA ?
  - (12) Define Mutarotation.
  - (13) What are reducing and non-reducing sugar?
  - (14) Give any two types of Lipoprotein.