



Seat No. : _____

NM-105

November-2025

B.Sc., Sem.-III

DSC-C-MIC-231T : Microbiology

(Fundamentals of Microbial Biochemistry)

(As per NEP 2020)

Time : 2:00 Hours]

[Max. Marks : 50

- Instructions :**
- (1) All questions are compulsory.
 - (2) Figures on the right indicates marks.
 - (3) Mention correct question number against the answer.
 - (4) Draw figures wherever necessary.

1. What are carbohydrates ? Describe the structure and functions of any two disaccharides. 10

OR

1. (A) Write a descriptive note on ionic bonds. 5
(B) Explain the structure and functions of any one homopolysaccharide. 5

2. Describe the structure and functions of DNA. 10

OR

2. (A) Write a short note on the structural properties of tRNA. 5
(B) Explain briefly the structural features of alpha helices found in proteins. 5

3. Describe the structure and physico-chemical properties of enzymes. 10

OR

3. (A) Explain briefly the mechanism of enzyme action. 5
(B) Enlist different types of reversible inhibition of enzyme and describe briefly any one of them. 5

4. Describe the structure and properties of biological membrane with a suitable diagram. **10**

OR

4. (A) Write a short note on essential fatty acids. **5**

(B) Explain in brief the classification of vitamins. **5**

5. Give short and specific answers in **1-2** lines only : (Answer any **TEN**) **10**

(1) What are isotopes ?

(2) Write one example of heteropolysaccharide.

(3) What is free energy ?

(4) Which nitrogenous base is not found in DNA ?

(5) Write examples of any two aromatic amino acids.

(6) Write one example of structural protein.

(7) What is the allosteric site of an enzyme ?

(8) Write an example of extracellular enzyme.

(9) Enlist any two factors affecting enzyme activity.

(10) Write any two sources of Vitamin B12.

(11) What are saturated fatty acids ?

(12) Write any two examples of complex lipids.
