

**M. SC. (HONOURS) IN
BIOCHEMISTRY
(MSCBCH)**

**Term-End Examination
December, 2025**

MBC-01 : CONCEPTS OF BIOCHEMISTRY

Time : 3 Hours

Maximum Marks : 100

Note : (i) *Attempt any five questions.*

(ii) *All questions carry equal marks.*

(iii) *Draw figures and flowcharts
wherever required.*

-
-
1. (a) List the non-living inorganic elements and their functions in the living organisms. 10
 - (b) Explain the structure and properties of starch. 10
 2. (a) Describe the stereochemical properties of monosaccharide. 10

- (b) Discuss the structure and role of glycolipids. 10
3. (a) Write a detailed note on glycerophospholipids. 10
- (b) How do lipids act as signaling molecules ? Discuss their role as cofactors. 10
4. (a) Describe the different models of protein folding. 10
- (b) What are sterols ? Explain their different types. 10
5. Explain the significance of Ramachandran plot in understanding the conformational stability of proteins. Distinguish between α -helix and β -sheets. 10+10
6. (a) Explain the concept of stereoisomerism in amino acids with suitable examples. 10

[3]

- (b) What is isoelectric point ? Describe the electrophoretic protein separation technique based on this property of proteins. 10
7. (a) Describe the Watson-Crick model of DNA. What are the key differences between different forms of DNA ? 10
- (b) Enumerate the Sanger methods of DNA sequencing. 10
8. (a) Write a note on Vitamin D. 5
- (b) What are Porphyrins ? Explain their structure and importance. 10
- (c) List the techniques used for characterization of nucleic acids. Write any *two* in brief. 5

x x x x x