

Exam. Code : 107401

Subject Code : 1710

B.Sc. Biotechnology 1<sup>st</sup> Sem. (Batch 2021-24)

BIOCHEMISTRY-I (Biomolecules)

Paper-BTL-103

Time Allowed—3 Hours] [Maximum Marks—40

Note :- Attempt FIVE questions in all, selecting at least ONE question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

#### SECTION—A

1. What are the physico-chemical properties of water ? Discuss in detail along with the role of hydrogen bonding in these properties. 8
2. (a) Define buffers. Discuss with examples. 4  
(b) Write a note on dissociation constant and dielectric constant. 4

#### SECTION—B

3. Define carbohydrates. Give their classification. Discuss polysaccharides with suitable examples and their functions. 8

4. (a) What are glycosaminoglycans ? Discuss with structures and functions. 4  
(b) What are non-reducing sugars ? Give suitable examples. 2  
(c) What is lactose intolerance ? Explain briefly. 2

#### SECTION—C

5. Define lipids. Give its classification. Discuss their structures and functions. 8
6. (a) What are sphingolipids ? Discuss briefly. 4  
(b) Write a note on steroids. 4

#### SECTION—D

7. (a) What is secondary structure of proteins ? Name various secondary structures. Discuss these with special reference to the forces which stabilizes these secondary structures. 6  
(b) Write a note on aromatic amino acids. 2
8. What are standard amino acids ? Give their classification and structures. 8