

Bachelor of Science (B.Sc.) Semester—I (C.B.S.) Examination
BIO-CHEMISTRY (Biomolecules & Human Physiology)
Compulsory Paper—1

Time : Three Hours]

[Maximum Marks : 50

Note :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw diagrams wherever necessary.

1. Define Carbohydrates. Give its classification and write the chemical structure of a Monosaccharide, Disaccharide and a polysaccharide. 10

OR

Write a note on :—

- (a) Mucopolysaccharides 5
- (b) Mutarotation and anomerism. 5
2. Give a detailed account on compound lipids. 10

OR

Write notes on :—

- (a) Hydrolysis of triglycerides 2½
- (b) Saponification of fats 2½
- (c) Rancidity of fats 2½
- (d) Saturated and unsaturated fatty acids. 2½
3. Describe digestion and absorption of carbohydrates. 10

OR

- (a) Describe the sliding mechanism of muscle construction. 5
- (b) Describe the neuromuscular junction. 5
4. Describe the components of Cell membrane. 10

OR

- (a) Explain the Fluid Mosaic Model for membrane structure. 5
- (b) Explain briefly Na⁺/K⁺ pump. 5

5. Answer any **10** of the following :—

- (i) What are Epimers ?
- (ii) What is glycosidic linkage ?
- (iii) Write the chemical structure of α -D-glycopyranose.
- (iv) Name any two essential fatty acids.
- (v) Give one difference between fat and oil.
- (vi) Write the chemical structure of Cholesterol.
- (vii) Name the tissue where sarcomere is present.
- (viii) Name two proteins involved in muscle contraction.
- (ix) Name any one protein digesting enzyme.
- (x) Give one point of difference between active and passive transport.
- (xi) Define Antiport.
- (xii) Name the Scientists who proposed the Fluid Mosaic model of membrane.

10×1=10