KNT/KW/16/5055

Bachelor of Science (B.Sc.) Semester—I (C.B.S.) Examination

BIO-CHEMISTRY

(Biomolecules and Human Physiology)

Compulsory Paper—1

Time : Three Hours] [Maximum Marks : 50

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

(2) Draw well labelled diagrams wherever necessary.

1. Describe the following reactions of carbohydrates with :

(a) Phenyl hydrazine hydrochloride. 5

(b) Reduction reactions with sodium amalgam. 5

OR

(c) Write the chemical structure of Maltose. 2½

(d) Explain Epimerism with the help of example. 2½

(e) Describe the structure of glycogen. 2½

(f) Write the chemical structure of the α and β-D-glucopyranose. 2½

2. (a) Describe the classification of fatty acids. 5

(b) Write the chemical structure of simple triglyceride and mixed triglyceride. 5

OR

(c) Describe the saponification of fats. 5

(d) Write a note on acid value of fats. What is its relation with rancidity ? 5

3. Write notes on :

(a) Neuro-muscular junction. 5

(b) Digestion of Carbohydrates. 5

OR

Describe in detail the sliding mechanism of muscle contraction. 10

4. Describe in detail the composition of plasma membrane. 10

OR

Describe in detail passive transport in membranes with suitable examples. 10

5. Answer any **TEN** of the following :

(i) Inulin is a polymer of _____. 1

(ii) Name one non-reducing disaccharide. 1

(iii) In cellulose the glucose units are linked by _____ linkage. 1

(iv) Name two essential fatty acids. 1

(v) Why oils are liquid at room temperature ? 1

(vi) Name the components of lecithin. 1

(vii) Name two enzymes required for protein digestion. 1

(viii) Where are the calcium ions stored in muscle fiber ? 1

(ix) Name the enzyme digesting phospholipids. 1

(x) Name the scientists who proposed ‘fluid mosaic model’ of membrane structure. 1

(xi) How many molecules of calcium are pumped by the calcium pump ? 1

(xii) Define symport. 1