Bachelor of Science (B.Sc.) Semester-III (C.B.S.) Examination

BIOCHEMISTRY (Macromolecules)

Paper–I

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) All questions are compulsory and carry equal marks.
(2) Draw neat diagrams wherever necessary.

1. Describe the primary structure of proteins with respect to :
   (i) End terminal analysis
   (ii) Cleavage of disulphide bonds. 10

OR

Describe the Merrifield-Gutt method of peptide synthesis. 10

2. Describe in detail the forces stabilizing tertiary structure of proteins. 10

OR

Write in detail structure and functions of collagen. 10

3. Describe in detail the Watson and Crick model of B-DNA. Write the chemical structure of base pairing between A & T and between G & C. 10

OR

Write notes on :
   (a) Chargaff's Rule 2½
   (b) Hydrophobic interactions in double helical DNA 2½
   (c) Z-DNA 2½
   (d) Denaturation of DNA. 2½

4. Describe Sanger's dideoxynucleotide sequencing method. 10

OR

   (a) Describe Tm and buoyant density and their relationship with G-C content. 5
   (b) Describe the structure of tRNA. 5

5. Answer any **ten** of the following :
   (i) Write chemical structure of histidine and proline. 1
   (ii) Name any two unusual amino acids. 1
   (iii) What is a zwitter ion ? 1
   (iv) What is meant by protein denaturation ? 1
   (v) What is a domain ? 1
   (vi) What is meant by a subunit ? 1
   (vii) What is Satellite DNA ? 1
   (viii) Maxam-Gilbert method is also known as _____ method. 1
   (ix) Guanine cap is found in _____ RNA. 1
   (x) A-DNA has _____ base pairs per helical turn. 1
   (xi) Renaturation of DNA is reversible – True or False ? 1
   (xii) Name the left handed DNA helix. 1