

Bachelor of Science (S.Y. B.Sc.) Third Semester Old
B.Sc. 2381 - Biochemistry Paper-I (Macromolecules)

P. Pages : 2

Time : Three Hours



GUG/W/18/1254

Max. Marks : 50

- Notes :
1. All questions are compulsory.
 2. Draw a neat and well labelled diagram wherever necessary.

1. What are proteins? Classify on the basis of shape and biological functions. **10**

OR

Describe the tertiary structure of protein in detail. Discuss the various forces that stabilize the structure. **10**

2. Explain the forces stabilizing the nucleic acid structure. Add a note on denaturation and renaturation. **10**

OR

Give a detailed account of Sanger's dideoxynucleotide sequencing method. **10**

3. a) Write a note on peptide mapping. **2½x4**

b) What are domains? Give its functions.

c) Explain the structural features of A-DNA.

d) Draw the structure of t-RNA.

OR

e) Explain the β - pleated sheet structure with suitable example.

f) Write notes on subunit interaction in quaternary structure of proteins.

g) Explain the Chargaff's rules.

h) Describe in brief the structure of m-RNA.

4. a) Discuss the solid-phase peptide synthesis. **2½x4**

b) Write a note on denaturation of proteins.

c) Give the salient features of B-DNA.

d) Write a short note on satellite DNA.

OR

- e) Write a note on glycoproteins and nucleoprotein.
- f) Explain the structure of collagen. Give its functions.
- g) Draw the chemical structure of base pairing between A&T.
- h) Define T_m and explain its relationship with G-C content in DNA.

5. Attempt **any ten** of the following-

10

- a) Name the Sanger's reagent.
- b) Which amino acids are known as helix breakers?
- c) How the disulfide linkages are formed?
- d) What do you mean by renaturation of proteins?
- e) Give any one point of difference between secondary and tertiary structure of protein.
- f) Enlist the forces stabilizing quaternary structure of protein.
- g) Draw the purine ring structure.
- h) What do you understand by deviations from Watson-Crick model?
- i) Draw the chemical structure of thymine.
- j) Chemical cleavage method for DNA sequencing was introduced by -----
(fill in the blank)
- k) Give the function of r-RNA.
- l) What is buoyant density?
