

B.Sc. Sem-III (Old)
B.Sc.2381 - Biochemistry Paper-I (Macromolecules)

P. Pages : 2

Time : Three Hours



GUG/S/19/1254

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw a neat and well labelled diagram whenever necessary.

1. Describe the Merrifield-Gutt method of peptide synthesis in detail. **10**

OR

Give detailed account of structure & functions of collagen. **10**

2. Describe in detail the forces stabilizing nucleic acid structures. **10**

OR

Describe DNA sequencing method of Sanger. **10**

3. a) Describe the α -helical structure of proteins. **2½**

b) Write a note on subunit interaction. **2½**

c) How does native DNA differ from the β -DNA model of Watson and Crick ? **2½**

d) Describe the cloverleaf model of tRNA. **2½**

OR

e) Explain β -pleated sheet of protein. **2½**

f) Write note on Quaternary structure of proteins. **2½**

g) Describe DNA denaturation. **2½**

h) Describe the structure of Eukaryotic mRNA. **2½**

4. a) Classify proteins on the basis of solubility shape. **2½**

b) Briefly describe tertiary structure of proteins. **2½**

c) Write a note on Base-Stacking. **2½**

d) Describe T_M and buoyant density. **2½**

OR

- e) Describe the end group analysis reactions for determining the primary structure of proteins. 2½
- f) Write a note on protein denaturation. 2½
- g) Compare the structures of A, B and Z DNA. 2½
- h) Draw a well labelled diagram of t-RNA. 2½

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

- i) Write the full form of FDNB. 1
- ii) Name the types of secondary structures of proteins. 1
- iii) Name any two enzymes used for peptide mapping. 1
- iv) "All proteins do not have a quaternary structure" ? Why. 1
- v) A disulphide bond is formed between which two amino acids ? 1
- vi) What is domain ? 1
- vii) Name the various forms of DNA. 1
- viii) Base stacking is type of ----- interaction. 1
- ix) Why are nucleic acids negatively charged ? 1
- x) What are dideoxynucleotides ? 1
- xi) Poly a tail is present in which type of RNA ? 1
- xii) Give Chargaff's rules. 1
