

B.Sc.S.Y. (With Credits)-Regular-Semester 2012 Sem III
B.Sc.2381 : Paper-I : Bio-Chemistry (Macromolecules)

P. Pages : 2

Time : Three Hours



GUG/W/16/3326

Max. Marks : 50

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- Notes : 1. All the questions are compulsory and carry equal marks.
2. Draw well labelled diagrams wherever necessary.

1. What do you understand by primary structure of proteins? How will you determine the primary structure with respect to the following. **10**

- i) Sanger's method.
- ii) Edman's degradation.
- iii) Carboxypeptidase method.

OR

- a) Explain tertiary structure of protein. Add a note on various forces stabilizing the structure. **5**
- b) Describe in detail the structure and biological functions of collagen. **5**

- 2.**
- i) Describe the denaturation and renaturation of DNA. **5**
 - ii) Explain the forces stabilizing nucleic acid structure. **5**

OR

Describe the maxam – Gilbert method of DNA sequencing. **10**

- 3.**
- a) Write a note on simple proteins. **2½**
 - b) Discuss the subunit interaction. **2½**
 - c) Explain in brief about B-DNA. **2½**
 - d) Write a note on structure of m-RNA. **2½**

OR

- e) Describe the α -helix structure. **2½**
- f) What are domains? Give their functions. **2½**
- g) Draw the chemical structures of A,G and T. **2½**
- h) Write a note on structure of r-RNA. **2½**

4. a) Write only the reactions of Merrifield Gutt peptide synthesis. 2½
- b) Differentiate between quaternary and tertiary structure of proteins. 2½
- c) Discuss the Chargaff's rules. 2½
- d) Draw the structure of t-RNA. 2½

OR

- e) Write a note on metalloproteins. 2½
- f) Explain the structure of myoglobin. 2½
- g) Discuss the Z-DNA structure. 2½
- h) How T_m and buoyant density are related to G-C content in DNA? 2½
5. Attempt **any ten** of the following.
- a) Give any one example of protein of β -pleated sheet structure. 1
- b) What are nucleoproteins? 1
- c) Name any two water soluble proteins. 1
- d) Draw the structure of hydroxyproline. 1
- e) Define the renaturation of Proteins. 1
- f) Enlist the forces involved in the stability of quaternary structure of proteins. 1
- g) Draw the chemical structure of cytosine. 1
- h) State a single difference between A and Z DNA. 1
- i) Define cot curve. 1
- j) What is dideoxynucleotide? 1
- k) Define satellite DNA. 1
- l) Mention any one point of differentiation between prokaryotic and eukaryotic m-RNAs. 1
