

2125

M.Sc. (Bio-Informatics) First Semester  
MBIN-8004: Macromolecular Bio-Chemistry

Time allowed: 3 Hours

Max. Marks: 60

**NOTE:** Attempt five questions in all, including Question No. I which is compulsory and selecting atleast one question from each Unit.

x-x-x

I. Give answer in a very short:-

- a) Write the name of optical inactive amino acid?
- b) Who was Ramchandran?
- c) Write the names of two structural motif in present in proteins.
- d) Chaperons.
- e) Difference between nucleoside and nucleotides?
- f) Negative Entropy.
- g) Glycogen.
- h) Give names of two variants of standard DNA. (8x1½)

**UNIT - I**

- II. (a) Briefly describe the peptide bond and its relationship with Ramchandran plot.  
(b) What are the major covalent and non-covalent which established protein's structure. (2x6)
- III. (a) Write about the structure of collagen and its significance in biological system.  
(b) Describe in brief about the quaternary structure of proteins. (2x6)

**UNIT - II**

- IV. (a) Briefly describe chaperons and their significances in protein folding.  
(b) Write a short note on helix coil transition. (2x6)
- V. (a) Describe about third law of thermodynamics and its relation with biological system.  
(b) What is partition function? Why it is significant in biology. (2x6)

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**UNIT - III**

- VI. (a) Explained in brief about the tertiary structure of starch.  
(b) Describe the structure of cellulose. (2x6)
- VII. (a) Write the structure in detail of standard form of DNA double helix.  
(b) Write the differences between various forms of DNAs. (2x6)

*x-x-x*