

2124
M.Sc. (Bio-Informatics) First Semester
MBIN-8004: Macromolecular Bio-Chemistry

Max. Marks: 60

Time allowed: 3 Hours

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting atleast one question from each Unit.

X-X-X

I. Answer the following: -

- What is protein denaturation?
- Name the Forces/bonds present in protein structures.
- What are Heat shock proteins?
- What is Boltzman distribution?
- Define neoglycans with example
- Draw the structure of pyrimidine nucleotides
- Give name and structure of one heteropolysaccharide and one homopolysaccharide
- What is cooperative binding? (8x1½)

UNIT - I

II. (a) What is pI? Explain the titration curve of glycine?

(b) Write a short note on fibrous proteins. (2x6)

III. Write short notes on:-

- Unusual amino acids
- Ramachandran plot
- Ways of pairing N-half cysteine (12)

UNIT - II

IV. (a) What is protein folding? How protein folding takes place.

(b) Write short note on partition function and its application in biological system. (7,5)

V. Write short notes on:-

- Helix Coil transition
- Levinthal paradox
- Random walk (12)

P.T.O.

UNIT - III

- VI. Write short notes on:-
- (a) Sequence analysis of polysaccharides
 - (b) Conformation and function of glycogen and chitin (12)
- VII. (a) Explain the double helical structure of DNA in detail with discussion about the rotation angle in phosphodiester chain. Also differentiate A,B and Z type of DNA
- (c) Write short notes on secondary structures glycans associated to glycoprotein. (8,4)

x-x-x