(3 Hours) **[Total Marks: 80]**

N.B.: (1) Question No.1 is compulsory.
(2) Attempt any three questions out of remaining five questions.
(3) Draw diagrams/ figure wherever necessary.

1. Write short notes on any four of the following (each of five marks): (20)

(a) H-bond
(b) Water as solvent
(c) Alpha-helix
(d) Iso-electric pH
(e) Molecular chaperons

2. (a) What are the different components of plasma membrane. (10)
(b) Define term motif. Describe Leucine zipper in detail. (10)

3. (a) Protein- nucleic acid interactions are important for gene expression. Give details. (10)

(b) Discuss structural lipids in detail. (10)

4. (a) Give an overview of nuclear import.What happens if ran-GTP is inactivated? (10)

(b) With the help of diagram explain working of NMR. (10)

5. (a) Illustrate B-form of DNA in detail. (10)

(b) Name differnt types of molecular interactions present in biomolecules. (10)

6. (a) What is X-ray crystallography and how it can be used to study structures of biomolecules. (10)

(b) Discuss protein structures and folding at different levels. (10)