

Exam. Code : 206602

Subject Code : 4090

M.Sc. Bioinformatics 2nd Semester

STRUCTURAL BIOLOGY AND BIOINFORMATICS

Paper—BI-525

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Candidates are required to attempt **FIVE** questions, selecting at least **ONE** question from each Section. The **Fifth** question can be attempted from any Section. Each question carries equal marks.

SECTION—A

1. (A) Explain the principle of NMR and CD. Discuss their application.
(B) What is Ramachandran Plot ? Explain its significance.
2. What is mass spectroscopy ? Explain its application in analysis of post translational modification and peptide mapping.

SECTION—B

3. What is glycosyl rotation ? Discuss the differences between B and Z DNA.
4. What is protein folding ? Discuss classification of protein structures in CATH.

SECTION—C

5. Explain different types of secondary structures of protein. Discuss PHD and GOR.
6. Explain nearest neighbour method. Discuss application of neural network in protein secondary structure prediction.

SECTION—D

7. Define tertiary structure of proteins. Discuss homology modeling and fold recognition methods. Explain their merits and demerits.
8. What do you understand by distance matrices ? Discuss algorithm of DALI and SSAP.