

Exam. Code : 103206

Subject Code: 1445

B.A./B.Sc. 6th Semester

BIOINFORMATICS

(Structural Biology & Molecular Modelling)

Time Allowed—3 Hours] [Maximum Marks—75

SECTION—A

1. Explain the following terms :—

- (a) Isoelectric point.
- (b) Tertiary structure of Protein.
- (c) MS-MS.
- (d) Prosite.
- (e) CATH.
- (f) Descriptors.
- (g) Docking.
- (h) Molecular dynamics.
- (i) Simulation.
- (j) Bragg's Law.

10×1.5=15

SECTION—B

2. (a) What is unit cell in a crystal ? Explain principle and application of X-ray crystallography.

OR

Discuss principle and application of NMR.

- (b) What is SCOP ? Discuss how protein structures are classified in SCOP ?

OR

What is secondary structure of a protein ? Compare Chou Fasman and GOR method for protein secondary structure prediction.

- (c) Explain ligand based drug design. Discuss steps involved in ligand based drug design.

OR

What do you understand by ADMET ? Explain its significance.

- (d) What do you understand by empirical force field ? Explain its application.

OR

What is molecular modeling ? Explain how simulation techniques can be used for calculation of free energy.

$$15 \times 4 = 60$$