

**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.

10x1.5=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.

15x4=60