

Sr. No. 7105

Exam. Code: 206602  
Subject Code : 4598**M.Sc. Bio-informatics - 2nd Sem.**

(2517)

**Paper - BI-525: Structural Biology & Bioinformatics****Time allowed: 3 hrs.****Max. Marks: 75****Section A**

10X1.5=15

Explain the following in less than four sentences.

- |                        |             |
|------------------------|-------------|
| a) Unit cell           | f) CASP     |
| b) Rotamers            | g) Pymol    |
| c) PFAM                | h) Modeller |
| d) Protein fold        | i) SSAP     |
| e) Hidden markov model | j) ALIGN    |

**Section B**

12X5=60

- 1) Explain the principle of X-ray diffraction. Discuss its application. OR
- 2) What are dihedral angles? Discuss significance of Ramachandran plot.
- 3) What do you understand by glycosyl rotation? Differentiate between A and B form of DNA. OR
- 4) What is a protein fold? Discuss classification of protein structures in SCOP.
- 5) What is nearest neighbour method? Discuss its application in protein structure prediction. OR
- 6) What is PSIPRED? Explain its principle and application.
- 7) What do you understand by knowledge based structure prediction? Discuss the algorithm of homology modelling. OR
- 8) Discuss different tools and methods to verify a predicted three dimensional structure of protein.
- 9) What is CE? Compare CE with VAST. OR
- 10) What do you understand by RMSD? Discuss any structure alignment tool based on graph theory.

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