

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- April-2019

B.Tech Bioinformatics II Semester

COURSE CODE: 10B11BI211

MAX. MARKS: 25

COURSE NAME: Structural Biology

COURSE CREDITS: 4

MAX. TIME: 1.5 Hours

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. For an alpha/beta protein, where will the active site be present? Explain in detail. (2.5 Marks) COII
2. If a protein can form a maximum of six disulfide bridges in its final native confirmation, explain with the help of diagrammatic pathway as to how its folding can happen, what could be its intermediate state, and what could be its rate limiting step? (2.5 Marks) COII
3. How can one predict the presence of transmembrane regions in a sequence? (2.5 Marks) COIII
4. Explain with the help of a schematic diagram the mechanism of photosynthetic reaction center. (2.5 Marks) COIII
5. Compare and contrast the various types of forces present in a protein? (2.5 Marks) COIV
6. What is hanging-drop technique for crystallization of proteins? (2.5 Marks) COIV
7. Explain Bragg's law. Use a diagram to explain the process of diffraction. (2.5 Marks) COIV
8. What is NMR spectroscopy and what are its advantages and disadvantages? (2.5 Marks) COIV
9. What is the phase problem in crystallography? Explain in detail. (2.5 Marks) COIV
10. What are the various methods used for solving the phase problem in X-ray crystallography? (2.5 Marks) COIV