Total No. of Pages 01   Roll No. ....
SIXTH SEMESTER   B.Tech[BT]
MID SEMESTER EXAMINATION   MARCH-2019
BT 322: Protein Engineering
Time: 1:30 Hours   Max. Marks: 25

Note: Answer ALL questions.
Assume suitable missing data if any.

Q.1 What do you mean by the term Protein Engineering. Explain the different structural level of organization in a protein based on the degree of complexity.   (2+4)

Q.2 (a) Draw and explain Ramachandran plot for different secondary structures.   (4)

(b) Histidine has 3 ionizable groups. The pKa of alpha COOH is 1.8; the pKa on the R group is 6; the pKa on the alpha amino group is 9.2. Calculate the pI of amino acid?   (3)

Q.3 What do you mean by the term Zwitterion. Explain the importance of post-translational modification of a protein.   (2+4)

Q.4 (a) Why Glycine and Proline does not form an alpha helix?   (3)

(b) An enzyme was assayed at an initial substrate concentration of 2 X 10^{-5}M. In 6 min, half of the substrate has been used. The Km for the substrate is 5 X 10^{-3} M. Calculate (a) k, (b) Vmax   (3)

END