

Please check whether you have got the right question paper.

- N.B:
- 1) Question No.1 is compulsory.
 - 2) Attempt any 3 questions out of remaining 5 questions
 - 3) Each question is of 20 marks
 - 4) Figures to right indicate full marks
 - 5) Draw diagram wherever necessary

- | | | |
|-----|--|----|
| Q.1 | Explain any four in short with labeled diagram of the following: | 20 |
| | a. PCR | |
| | b. Helix turn motif | |
| | c. Leucine zipper | |
| | d. t-RNA | |
| | e. Alpha helix | |
| | f. Insulin | |
| Q.2 | a. Explain the detail Bacteriorhodopsin and photosynthetic centre. | 10 |
| | b. Explain torsion angles and Ramachandran plot. | 10 |
| Q.3 | Write short notes on the following: | 20 |
| | a. Principle of X-ray crystallography | |
| | b. Hsp 60 in protein folding | |
| | c. Lysosomal proteolysis | |
| | d. Solid phase peptide synthesis | |
| Q.4 | a. Explain post-translational modifications of proteins. | 10 |
| | b. Explain <i>de novo</i> protein design. | 10 |
| Q.5 | a. Explain the protein engineering cycle. | 10 |
| | b. Explain the target molecules of protein engineering. | 10 |
| Q.6 | a. Explain the engineering of humanized antibodies. | 10 |
| | b. Explain the engineering of the enzyme tyrosyl tRNA synthase. | 10 |
