JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

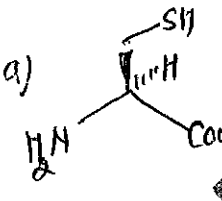
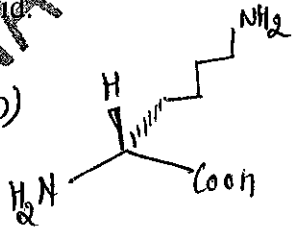
B.Tech-I Semester 4th (BT)

COURSE CODE (CREDITS): 25B1WBT433 (3) MAX. MARKS: 15

COURSE NAME: PEPTIDE THERAPEUTICS

COURSE INSTRUCTOR: DR. GOPAL S BISHT MAX. TIME: 1 Hour

Note: *(a) All questions are compulsory.*
(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems
(c) Use of calculators is not allowed

Q.No	Question	CO	Marks
Q1	a) Calculate Net charge on polypeptide CAPTAINAMERICA. How many disulphide bonds are theoretically possible in this peptide? b) Draw the bond line structure of tetra peptide APGY with correct stereochemistry. c) If name of 12 residue peptides ILRWPWWPWRRK is omiganin then how will you name following three peptides 1) ILRWPWWAWRRK 2) ILRPWWPWRRK 3) PWWPWR d) Assign R/S to the following amino acid: a)  b) 		1.5x4 =5
Q2	Comment on following statement: a) A point mutation lysine to Proline results in disruption of a helical structure in a segment of protein. b) The denaturation of protein always leads to irreversible loss of secondary structure element such as alpha helix		2
Q3	a) A peptide gives phenylthiohydantoin-valine in the first Edman cycle. What does this indicate about the peptide sequence? Explain the chemical steps involved in Edman degradation. b) Draw and label torsional (dihedral) angles φ (phi) and ψ (psi) in a polypeptide chain? c) Explain β sheet conformation of peptide or protein. d) What would happen if you treat polypeptide ELPKYAMAVG with cyanogens bromide and chemotrypsion?		2x4=8

(9)