BML101-Quiz 2 **Name:**

Answer all questions **ID Number:**

Full marks: 30, Time: 45 minutes

PART A (10 marks)

1. The most abundant element in the human body is _____. Oxygen
2. Alpha-helix is an example of _____secondary_____ structure of a protein.
3. The net charge of the zwitterion form of Gly is _____zero_____.
4. In the tripeptide Lys-Pro-Ile, the C-terminal residue is _____Ile_____.
5. The two amino acids containing sulfur are _____Cysteine_____ and methionine.
6. A protein found in hair, horn, nails and feathers is _____Keratin_____.
7. _____X-ray chrystallography_____ is a technique used to determine the tertiary structure of a protein.
8. An example of an interaction that is important in stabilizing protein structure is _____Hydrogen bonding_____.
9. The type of enzyme inhibition in which V_{max} is unaffected is _____Competitive Inhibition_____.
10. For a simple E + S $\rightarrow$ ES $\rightarrow$ E + P reaction, the kinetics _____zero/ psudo first_____ order in [S] when [S] >> K_M.

PART B (10 marks, only one answer may be correct)

1. Which of the following amino acids has a charged polar side chain at pH 7?

A) Leu

B) Ala

C) Met

D) Trp

E) Glu

2. Which of the following amino acids has an uncharged polar side chain at pH 7?

A) Arg

B) Thr

C) Glu

D) Pro

E) Ile

3. The disulfide bond between two cysteine molecules:

A) is a peptide bond.

B) is an ionic bond that is stable at physiological pH.

C) is a covalent bond formed by oxidation.

D) is a hydrogen bond between the two sulfhydryl groups.

E) is a weak ion-induced dipole attraction.

4. Enzymes that hydrolyze the internal peptide bonds (not the peptide bonds of the terminal amino acids) of a protein are:

A) oxidoreductases.

B) lyases.

C) endopeptidases.

D) nucleases.

E) exopeptidases.

5. What is the velocity of a first-order reaction when the reactant concentration is 6×10^{-2} M and the rate constant is 8×10^{3} sec^{-1}?

A) 1.33×10^{5} $M^{-1}sec^{-1}$

B) 1.33×10^{5} M sec

C) 7.5×10^{-2} M sec

D) 4.8×10^{2} M sec^{-1}

E) not enough data are given to make this calculation

PART C (10 marks)

What are different ionic forms of the dipeptide below at pH of 1 and 10.5? What is the PI of the dipeptide?