

Name: \_\_\_\_\_

Date: \_\_\_\_\_

[3 pt] 1. Why are proteins from some foods of greater nutritional value than others?

[4 pt] 2. Draw the projection formula for Valine. Did you draw the L or D isomer? Circle the amine group, place a square around the carboxylic acid group. Draw an arrow pointing to the  $\alpha$  carbon.

[8 pt] 3. Give an example of a functional group found in amino acids that would be:

3(a) Acidic

3(b) Basic

3(c) Hydrophilic

3(d) Hydrophobic.

[6 pt] 4. Define the terms:

4(a) Amphoteric

4(b) Zwitterion

4(c) Isoelectric Point

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[4 pt] 5. For the amino acid phenylalanine, draw its zwitterion formula **AND** show how it can react as a base to neutralize an acid.

[6 pt] 6. Write the full structural formula of the two dipeptides that can be formed from Alanine and Serine. Circle the peptide bond(s) in each molecule

[3 pt] 7. Using the amino acid abbreviations write the structure of all the possible tripeptides containing one unit each of glycine, phenylalanine and leucine.

[6 pt] 8. Draw **AND** name the products for the complete hydrolysis of the following peptide.

