

Name:

BI 163 B

Problem set 1

due Monday, Sept. 19

Instructions: treat this worksheet like a quiz. Study the material we've covered in class thus far. Then close your notebook and textbook, and answer the questions. When you're finished, go back through your notes and make any necessary corrections. Print (double-sided if possible!) and turn in on Monday.

1. Warm-up: fill in the blanks

- a. an example of a secondary structure in proteins \_\_\_\_\_
- b. the bonds that generate/maintain this secondary structure (above): \_\_\_\_\_
- c. an example of an amino acid with a hydrophobic side chain: \_\_\_\_\_  
(refer to the amino acids figure below)

2. Congratulations, you've just discovered a new unicellular organism. Briefly explain how you would decide whether it belongs in Kingdom Monera or Protista.

3. Which molecule,  $\text{NH}_3$  (ammonia) or  $\text{C}_3\text{H}_8$  (propane), interacts with water? Diagram out how a hydrogen bond might form between this molecule and a water molecule.

4. True or false, and briefly explain why:

a. The primary structure of a protein is maintained by weak non-covalent interactions.

b. The R groups on amino acids aspartate and lysine are likely to interact and contribute to maintaining the tertiary structure of a protein.

