Protein Folding C. Kohn, Waterford WI

Name: Hour Date:

Date Assignment is due: *upon finishing PPT* Why late?
 Day of Week Date If your project was late, describe why

1. DNA is copied by in a direction
2. mRNA is read in groups of ( ) by a
3. Each codon codes for a specific
4. Each amino acid is delivered by a
5. A string of amino acids creates a and peptides join for form a
6. The shape of a protein comes from its and this shape determines its

 .
7. Proteins are made from amino acids
8. Each amino acid has a set of that helps to create the shape of the protein

	1. List some examples of these:
9. What are three ways in which you can identify the amino acid *Asparagrine?*
10. Do amino acids stay in a straight chain after they are assembled?
11. What three kinds of charge can an amino acid have?
12. How does the charge of an amino acid change the way they line up?

	1. Amino acids with a similar charge will
	2. Amino acids with opposite charges will
13. What is hydrophobicity?
14. Hydrophobic amino acids will
15. Hydrophilic amino acids will
16. In the picture below, label with amino acids are hydrophobic and which are hydrophilic

1. What is a cysteine?
2. Why are cysteines different from other amino acids?
3. What is the bond called between two cysteine molecules?
4. In the picture below, circle the cysteine bond

1. In the space below, draw an α helix
2. In the space below, draw a β sheet
3. Describe each of the following levels of protein organization

Primary

Secondary

Tertiary

Quaternary
4. In the space below, design a protein.
	1. For hydrophobic amino acids, draw a square **□**
	2. For hydrophilic amino acids, draw a circle Ο
	3. For negative charges, draw a triangle Δ
	4. For positive charges, draw a diamond ◊
	5. For cysteines, draw a circle with a C in it (©)
	6. Keep in mind, an amino acid could have a charge and be hydrophobic or hydrophilic
	7. Be sure to draw your amino acids first and connect them with a line second; your hydrophobic amino acids should be on the inside; your hydrophilic amino acids should be on the outside
	8. Amino acids with opposite charges are attracted to each other; amino acids with identical charges are opposed to each other
	9. Cysteines are attracted to each other; if you have two cysteines, they will move toward each other (if you have an odd number of cysteines, one will be unaffected – they can only form bonds in pairs, not in 3’s)