Bio 125 Fall 2011 Name:\_\_\_\_\_KEY\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Quizzlet #1

1. (2 points) Look at the model. Would this molecule be found in a strand of DNA, RNA, or both? Explain how you determined your answer. DNA; the sugar is missing an –OH on the #2 carbon.

If they got DNA but an incorrect explanation, 1 point. OK if they don’t specifically say it is C2.

1. (2 points) Which of the following provide evidence in support of the endosymbiotic theory? Circle all the correct answers (more than one may be correct).
2. The chloroplasts are surrounded by a single phospholipid membrane Statement not true; should be double membrane. All organelles are surrounded by a lipid membrane; evidence of internalization
3. DNA is found within the mitochondria YES.
4. Both mitochondria and chloroplasts divide in a similar manner to bacteria YES.
5. Ribosomes are not found within either mitochondria or chloroplasts Statement not true; ribosomes are present in both, evidence of prokaryotic origin

b & c circled: 2 points. b alone or c alone: 1 point. b, c, and (a or d): 1 point.
all 4 circled: 0.5 points. (b or c) and (a or d): 0.5 points. a, d and (b or c): 0 points.

1. (2 points) Circle the following statements that are true. More than one statement may be true.
2. Several factors must be considered when selecting a gene to use for animal barcoding. One reason for selecting the CO1 gene is that this gene does not vary in sequence from species to species. Not true. The variation is essential for distinguishing species
3. All known animals contain the CO1 gene and the function of the gene’s product is the same in all animals, thus making it a good candidate for a barcoding gene. TRUE
4. Barcoding using the CO1 region does not work in plants because they have chloroplasts and lack mitochondria. Not true. Plants also have mitochondria.
5. Barcoding could be useful to monitor the diversity of populations within a particular environment. TRUE

b & d circled: 2 points. b alone or d alone: 1 point. b, d, and (a or c): 1 point
all 4 circled: 0.5 points. (b or d) and (a or c): 0.5 points. a, c, and (b or d): 0 points