

*Tip: Answer the questions you know first. At least guess on everything before you turn this in.*

**Vocabulary:** Briefly define these terms in the space provided, as though you were speaking to someone who never took this class. Please be as clear as you can – try assuming your grandmother just asked. 3pts each

1. covalent bond:
  
2. carbohydrate:
  
3. enzyme:
  
4. DNA:
  
5. potential energy:

**Short Answers:** Tell me everything you know. Words, drawings, charts – all are welcome.

6. What is a controlled experiment? 2pts
  
  
  
  
  
  
  
  
  
  
7. How did Louis Pasteur cast doubt on the idea of spontaneous generation? 2pts
  
  
  
  
  
  
  
  
  
  
8. a. What are the molecular subunits (monomers) that make up proteins? 1pt  
  
b. Why does the order of these subunits matter in proteins? 1pt
  
  
  
  
  
  
  
  
  
  
9. Critically evaluate this statement: “It’s paranoid and ignorant to worry about industry or agriculture contaminating the environment with chemical wastes; this stuff is just made of the same atoms that were already present in our environment.” 2pts
  
  
  
  
  
  
  
  
  
  
10. List four cell structures or organelles which are composed mostly of phospholipids. 1pt
  
  
  
  
  
  
  
  
  
  
11. Give two examples of steroids that are found in everyone’s body. 2pts

12. a. Water molecules are polar, meaning that they have partial electric charges on different parts of the molecule. What type of bond results from the attraction between these partial charges? 1pt
- b. What are two properties of water that result from partial charges, or the bonds you named above? 2pts
13. What are three differences between eukaryotic cells and prokaryotic cells? Please identify which is which in your answers. 3pts
14. Name three functions of membrane proteins. 3pts
15. What do ribosomes do? 1pt
16. a. Draw a cross-section of a plasma membrane, with water on both sides, and label hydrophilic and hydrophobic regions of the membrane. 3pts
- b. Bonus: If I gave you a protein with one hydrophobic end (A) and one hydrophilic end (B), where would this protein embed itself in the membrane you drew? Describe or draw your answer, using the letters A and B to label. 2pts

