

Biochemistry Test Review

Biology

In preparation for the biochemistry test, you should understand how to answer the following questions. This is NOT a graded assignment. You may bring this study guide, along with any hand-written or typed information on it, for use on the biochemistry unit test. You will be able to use the equivalent of one sheet of paper, front and back, for the test – so any relevant information will need to be copied from your notebook onto your answers to this study guide.

1. What are the properties of a non-polar substance?
2. What are the properties of a polar substance? How do polar substances differ from ionic compounds?
3. What is the difference between an ionic and a covalent bond?
4. What types of substances will dissolve in water? What types of substances won't dissolve in water?
5. What are the four categories of chemical reactions we discussed in class? What is one example of each type (real or hypothetical)?
6. What are the differences between a protein and an enzyme? What are the reasons that enzymes are so important to living organisms? (In other words, what are the two main functions of enzymes in living organisms?)
7. What information do you know about the chemical reaction of a substance burning?
8. What are the unique properties of phospholipids?
9. What are phospholipid bi-layers, why do they form, and why are they so important to living organisms?
10. Make sure that you can **draw** and/or **identify** the important structures of the four biochemical compounds we discussed in class. Make sure that you could **explain** the structures and functions of these compounds to another student who was NOT in a biology class. Among other things, you should be able to identify:
 - a) The glucose, fructose, and sucrose components of the carbohydrate called *sucrose*
 - b) The glycerol, saturated fatty acid, and unsaturated fatty acid components of the lipids called *fats*
 - c) The amino acid and peptide bond components of *proteins*
 - d) The nucleotide components of *nucleic acids*