

Bio-Chemistry Unit Study Guide (Chapter 2, ISN 33-53)

- 1) Describe the 3 subatomic parts of an atom and location where found.
- 2) Compare the following pairs of terms:
 - a. Atomic number/ atomic mass
 - b. Covalent bond/ ionic bond
 - c. Cohesion/ adhesion
 - d. Solvent / solute
 - e. Organic compound/ inorganic compound
 - f. Monosaccharide/ polysaccharide
- 3) Why are elements considered neutral?
- 4) What characteristics are found in carbon that makes it excellent for the building of organic compounds?
- 5) Name the 4 macromolecules and the monomers that form them.
- 6) How many amino acids are found in the human body?
- 7) What is a catalyst?
- 8) How can pH and temperature affect enzyme function?
- 9) Why are enzymes referred to as a lock and key model? What represents the lock? Key?
- 10) In chemical reactions, how are atoms arranged?
- 11) What are reactants/ products in a chemical reaction? How can you identify them in an equation?
- 12) Describe the polarity of a water molecule.
- 13) What are some of the biological properties of water?
- 14) Explain what happens in a Dehydration Synthesis reaction and a Hydrolysis reaction. What is the major difference?
- 15) Review the pH scale and properties of an acid, base, and buffer.

16) Why is water neutral in pH despite the fact that it produces hydrogen and hydroxide ions?

17) What elements compose each of the following types of organic compounds?

a. Carbohydrates:

b. Lipids:

c. Proteins:

d. Nucleic Acids:

18) What role do enzymes play inside a cell?

19) What is the function of the enzyme active site?

20) Explain why enzymes are specific for only one type of reaction.

21) Why can proteins be classified as polymers, but lipids cannot?

To which group of organic compounds does each of the following belong?

A. Carbohydrates

B. Lipids

C. Nucleic Acids

D. Proteins

Enzymes _____ Glucose _____ Fats and oils _____ Cholesterol _____

Sugars _____ Starch _____ Hormones _____ Cellulose _____

Waxes _____ Monosaccharides _____ DNA and RNA _____

Polysaccharides _____ Glycogen _____