**Biochemistry Book Homework Part II**

**Read Sections 2-3 & 2-4 in your book carefully. Pages 44-53.**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date :\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_

1. What are **organic compounds**?
2. How many **valence electrons** does the carbon atom have?
3. Carbon-carbon chains can contain what kind of covalent bonds?
4. Carbon has the ability to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of different large and

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ structures.

1. What does **macromolecule** mean?

1. Describe **polymerization**.
2. Are the **monomers** forming a **polymer** always identical?
3. What is the ratio of elements in **carbohydrates**? Write the elements present as well as the ratio.
4. What do living things use carbohydrates for?
5. Sketch a **glucose** molecule here. Glucose is a **monosaccharide**, or simple sugar.
6. When many monosaccharides are joined together they form

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. What is cellulose?
2. Are lipids soluble in water?
3. What do organisms use lipids for?
4. Which two types of smaller molecules, or building blocks make up lipids?
5. What is the structural difference between a **saturated** and **polyunsaturated fat?**
6. Which types of foods usually contain polyunsaturated fat?
7. What are the monomers that make up **nucleic acids**?
8. What is the purpose of nucleic acids in organisms?
9. Which elements do **proteins** contain?
10. What monomers make up proteins? How many different types are found in nature?
11. What are the functions of proteins in living things?

**2-4**

1. What is a chemical reaction?
2. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ enter into a chemical reaction and the

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are produced in a chemical reaction.

1. Energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when chemical

bonds are formed or broken in a chemical reaction.

1. What is **activation energy**?
2. What is the purpose of **enzymes** in cells?
3. How do enzymes speed up reactions?
4. Enzymes provide a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ where reactants can be brought together

to react. Such a site reduces the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ needed for the reaction.

1. Name some variables that can influence enzymes, and thus the chemical

reactions that they drive.