

Organic Compounds

Name _____

Biology - Mr. Schulz

Read Section 6.4, pages 166 - 171 in your textbook. Please write down the answers to the following questions.

1. What is the main idea of this section?

2. Page 166 - 167 talks about carbon as the basis for organic chemistry.
 - a. How many valence electrons does carbon have?

 - b. What kind of bonds do carbon atoms make?

 - c. What are the structural shapes of carbon compounds?

3. What are the four major biological macromolecules?

4. **Carbohydrates** (pg. 168)
 - a. What are carbohydrates composed of (*be specific*)?

 - b. Monosaccharides are also known as ___?

 - c. Two monosaccharides are called a ___?

 - d. Longer carbohydrate molecules are ___?

 - e. What is the major role of carbohydrates in biology?

 - f. Name two other roles or functions of carbohydrates in biology.

5. **Lipids** (pg. 169)
 - a. What is the main function or importance of lipids?

 - b. What elements are lipids composed of?

 - c. Lipids are more commonly known as or make up three things:

 - d. Describe the difference between a fat and an oil.

 - e. What are the two kinds of fats?

- f. Lipids make up what structure of a cell? What are these lipids called?
 - g. Why is it important that lipids are hydrophobic?
6. **Proteins** (pg. 170)
- a. Proteins are made up of which elements?
 - b. What are the basic building blocks of proteins?
 - c. How many amino acids are there?
 - d. Besides Carbon, what element and three main groups make up amino acids?
 - e. What are the covalent bonds that form proteins called?
 - f. List at least 5 things that make proteins important in biology.
7. **Nucleic acids** (pg. 171)
- a. What is the main function of the nucleic acids?
 - b. What are the subunits called?
 - c. Write down the names of the 2 most important nucleic acids (spelling counts!)
 - d. Turn to page 336. What is the central dogma of biology related to proteins and the two nucleic acids? What does “*the synthesis of proteins*” mean?
8. **Nucleotides** (pg. 171)
- a. Name the five elements or element groups that make up nucleotides.
 - b. In how many units are they arranged?
 - c. Look at Figure 6.31 and the first paragraph on pg. 171. Describe each of the DNA units using 1 or 2 words.