

Name _____ Date _____ Period _____

Worksheet: Biochemistry

H O N O R S B I O L O G Y : U N I T 1

DIRECTIONS: Answer the following questions using your notes and textbook.

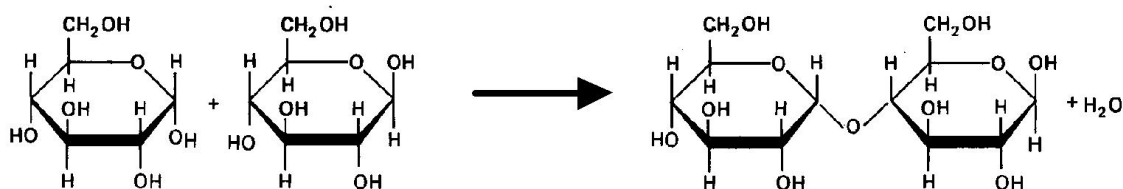
1. What is the difference between **inorganic** and **organic compounds**? Give examples of each.
2. Why is **carbon** considered the "*building block of life*"?
3. What is unique about **carbon** that allows it to form so many different shapes and sizes of organic molecules?
4. What are the four types of organic compounds?
 - a.
 - b.
 - c.
 - d.
5. Define the following terms:
 - a. Monomer-
 - b. Polymer-
 - c. Metabolism-
 - d. Catabolism-
 - e. Anabolism-

6. Complete the following chart describing monomers and polymers of organic compounds.

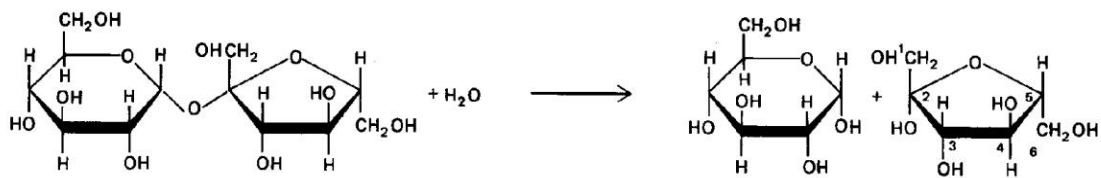
| Organic compound | Elements composed of | Monomer (and example) | Polymer (and example) | Importance to living things |
|------------------|----------------------|-----------------------|-----------------------|-----------------------------|
| Carbohydrates | | | | |
| Proteins | | | | |
| Lipids | | | | |
| Nucleic Acids | | | | |

7. Indicate if each of the following is an example of dehydration synthesis or hydrolysis.

a. Reaction #1-



b. Reaction #2-



c. How can you tell if a chemical equation represents?

- Dehydration synthesis?
- Hydrolysis?

8. What are the three types of carbohydrate **monosaccharides**?

- a.
- b.
- c.

9. Name three **disaccharides** and what two molecules they are composed of.

- a.
- b.
- c.

10. Name the three important **polysaccharides** and describe their importance in living things.

- a.
- b.
- c.

11. What are three kinds of **lipids** found in living things?

- a.
- b.
- c.

12. What is the difference between **saturated** and **unsaturated fats**?

13. What are **lipoproteins**?

14. Which type of **lipoproteins** are considered “good” and which are considered “bad”? Explain.

15. What are two important functions that **proteins** serve in living things?
16. How can living things produce so many different types of proteins if there are only **20** different types of amino acids?
17. Draw a diagram of a typical amino acid and label the following parts: **amine group, carboxyl group, and R side chain**
18. What are two important types of **nucleic acids** found in living things and describe what they do.
19. Draw a diagram of a **nucleotide** and label the following parts: **Nitrogen base, sugar (ribose), and phosphate group**
20. Which of the three parts of a nucleotide listed above differentiates nucleotides from each other?