

Name _____

Date _____

Per _____

Dehydration Synthesis and Hydrolysis Practice

A. Match the correct prefix or suffix or definition to its meaning/word below.

DEHYDRATE

HYDRO-

SYNTHESIS

-LYSIS

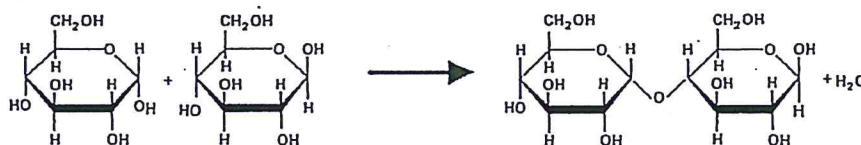
MONOMER

POLYMER

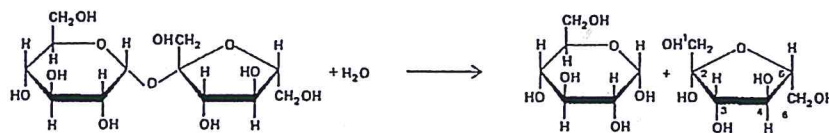
1. To split or break apart; release _____
2. To make something _____
3. Many monomers hooked together make a _____
4. Means to lose or remove water; to take water away _____
5. Means water (as in gaining water) _____
6. Building block or single unit of a polymer is a _____

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

Reaction #1: _____



Reaction #2: _____



Reaction #3: _____

Protein, carbohydrate, or lipid synthesis

Reaction #4: _____

Digestion of proteins, carbohydrate, or lipid

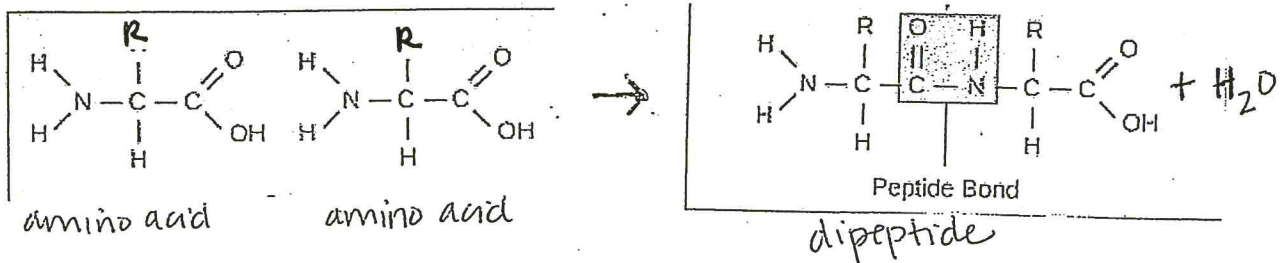
C. Explain in your own words: How can you tell if a chemical equation represents:

1. Dehydration synthesis? _____

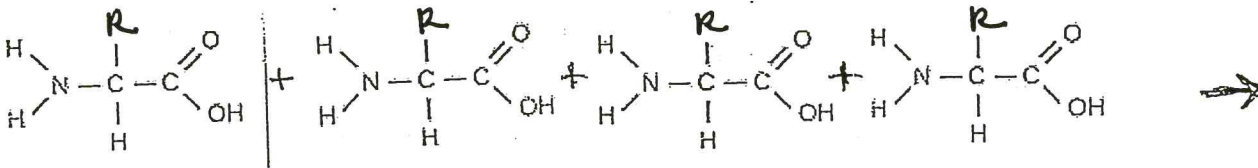
2. Hydrolysis? _____

D. Analyze the following diagrams to answer the questions that follow.

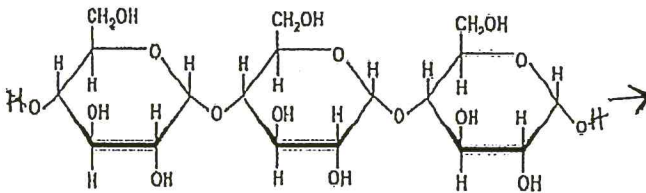
Below is an example of dehydration synthesis. In dehydration synthesis, a hydrogen atom from one molecule joins with a hydroxyl group (-OH) from another molecule to form water, leaving two molecules bonded



Using the diagram above as a guide, show how the following amino acids would begin to form a polypeptide:



Show how the following molecule would be broken apart (hydrolysis) into simple sugars below:



1. What are the reactants of the dehydration synthesis reaction? _____
2. What are the products of the hydrolysis reaction? _____
3. How are these two reactions related? _____

Summary Review:

1. The JOINING of two monomers causes a water molecule to be lost. This joining to make a polymer is called _____.
2. The SPLITTING apart of two organic molecules in a polymer and adding back the water parts to make individual monomers again is called _____.
3. The organic molecules that serve as a source of energy for us are, commonly called _____. In what organ of your body would the splitting apart (hydrolysis) of these be occurring at a high rate right now?

4. How many water molecules are lost when you join together 114 amino acids together? _____
5. During dehydration synthesis if 42 water molecules were made how many monosaccharides were joined together to make the complex carbohydrate? _____