Page 1

DEHYDRATION SYNTHESIS AND HYDROLYSIS VOCABULARY

Name _____ Period _____

DIRECTIONS: FIRST read page 36 (section 3-3) in your text. Then read each of the numbered statements below and fill in the term, prefix, or suffix in the blank space next to its meaning. You may also want to use a dictionary.

1. To split or break apart; to release

   _____

2. To make something: _____

3. Many monomers hooked together make a:

   _____

4. Means to lose or remove water; to take water away:

   _____

5. A process where two molecules lose the 'parts' of water and join (bond) together

   _____

6. A process where a molecule splits into two (or more) smaller molecules and gains the 'parts' of water on the broken ends:

   _____

7. Means water (as in gaining water):

   _____

8. Building block or single unit of a polymer is a:

   _____

DEHYDRATE

HYDRO-

SYNTHESIS

-LYSIS

DEHYDRATION SYNTHESIS

HYDROLYSIS

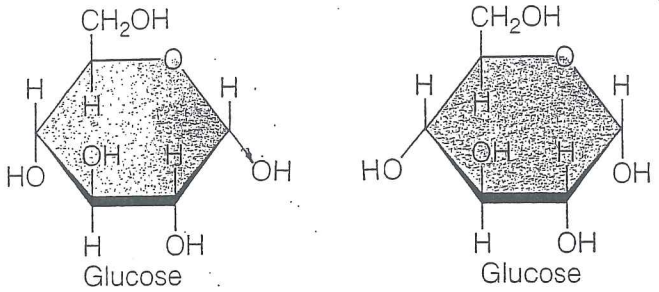
MONOMER

POLYMER

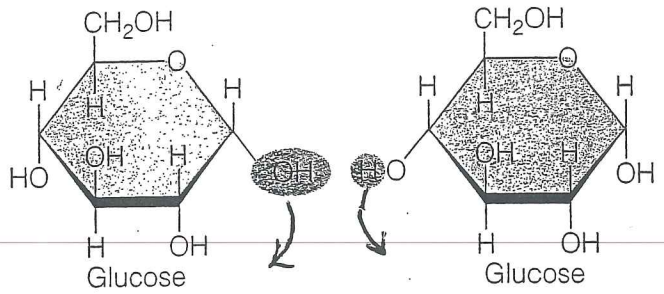
Dehydration Synthesis and Hydrolysis

DIRECTIONS: Below the diagrams are three statements that describe the action shown in the diagram, but they are scrambled up. **Rewrite** the statement that fits the action on the line under the appropriate diagram. Refer to figure 3.5 on page 38-

THE FOLLOWING DIAGRAMS SHOW THE PROCESS OF _____

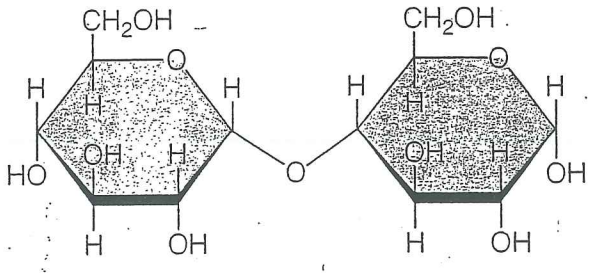


BEFORE: _____



STEP 1: _____

maltose



+ H_2O

STEP 2: _____

Statements to be written on the correct diagram above:

-The 'parts' of water are lost from the bonding ends of the two molecules.

-Two complete, organic molecules---separate from each other.

-Two molecules bond together forming one larger molecule.

Questions:

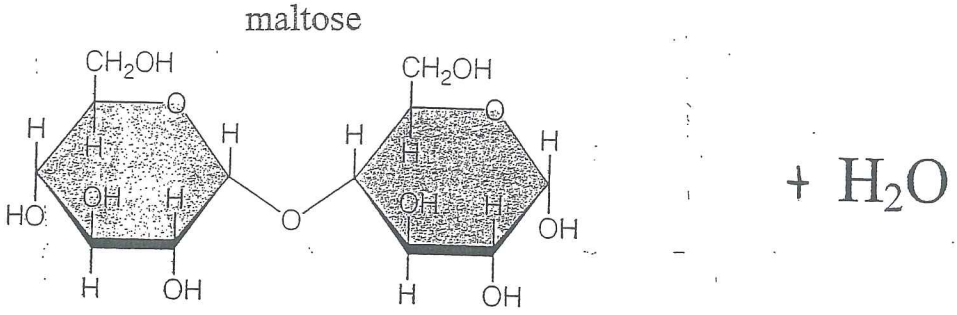
What figure in this chapter shows this process for the formation of a fat? _____

What figure in this chapter shows this process for the formation of a protein? _____

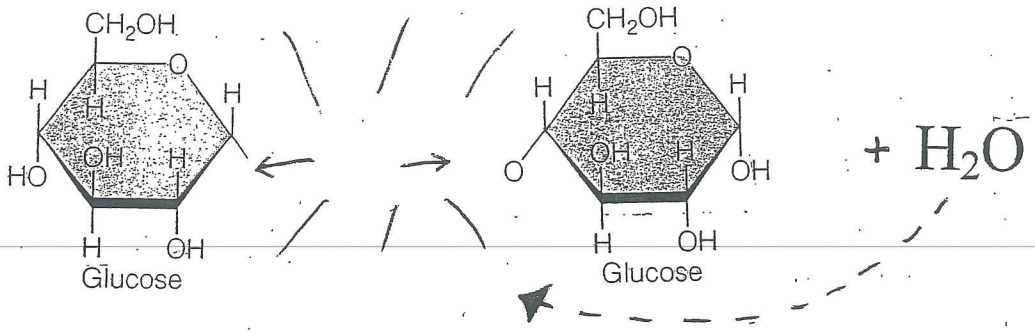
DEHYDRATION SYNTHESIS AND HYDROLYSIS

THE DIAGRAMS BELOW SHOW THE PROCESS OF: _____

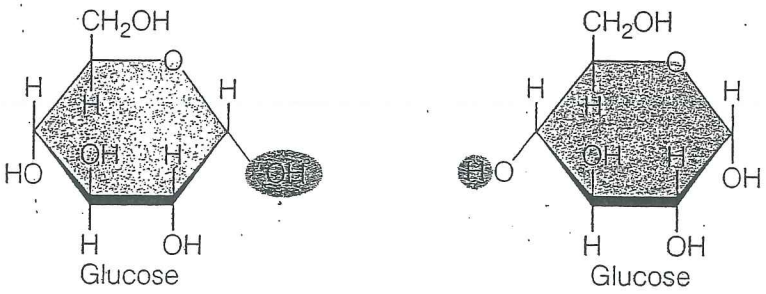
(Enzymes allow this process to happen in both process on pp. 2 and 3)



BEFORE: _____



STEP 1: _____



STEP 2: _____

Statements to match & REWRITE on the correct line above (use figure 3.3B for reference):

-Each sugar molecule gains a 'part' of water to its broken end and is now complete.

-One molecule of maltose is made out of two smaller sugar molecules bonded together.

-The disaccharide molecule breaks apart (with the help of enzymes).

SUMMARY QUESTIONS:

1. The losing of water from two organic molecules, then the JOINING of those molecules is termed _____.

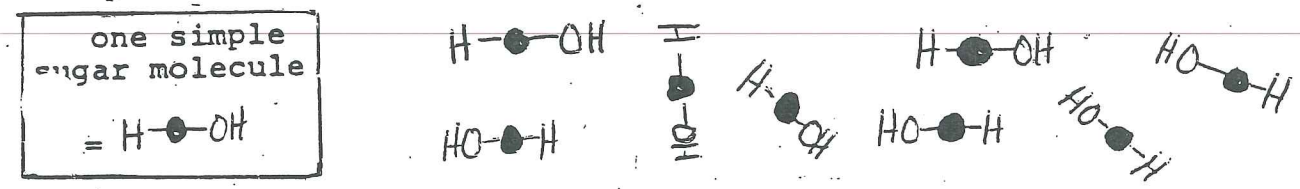
2. The SPLITTING apart of two organic molecules followed by the addition of the 'parts' of water to the broken ends of each molecule is called _____.

3. Organic molecules make up an important source of building block molecules needed to repair or to make new cells for our bodies AND they serve as a source of energy for us. Organic compounds (or molecules) are commonly called (think about what you ate today) _____.

4. In what ORGAN of your body would the splitting apart or hydrolysis of organic compounds be occurring right now (probably at a high rate)? (This answer is based on #3 answer above) _____.

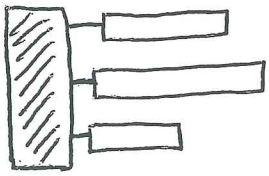
5. According to the process shown on page 2, how many water molecule(s) are formed when ONE BOND is made between two organic molecules? _____.

6. If the following simple sugars are bonded (joined) together end to end (in a straight chain) to form one long starch molecule, how many water molecules would be given off (lost) as they join together? _____.



7. According to the process shown on page 3 of this study guide, how many water molecule(s) are needed when ONE BOND holding two sugars (or any organic molecules) breaks? _____.

8. If one fat molecule (made out of 4 smaller molecules as indicated in the diagram to the left) goes through the process of hydrolysis, how many whole water molecules would be needed to complete the process? _____ (also see figures 3.8 B and 3.8 C)



9. Dehydration synthesis is a process which is exactly the opposite of _____.

10. One bond between two organic molecules forms _____ water molecules.
11. Ten bonds between eleven organic molecules forms _____ water molecules.

12. List the four groups of organic compounds: _____;

_____; _____; _____.

13. List the four groups of inorganic compounds: _____;

_____; _____; _____.