

Dehydration Synthesis and Hydrolysis

Name: _____ Hour: _____

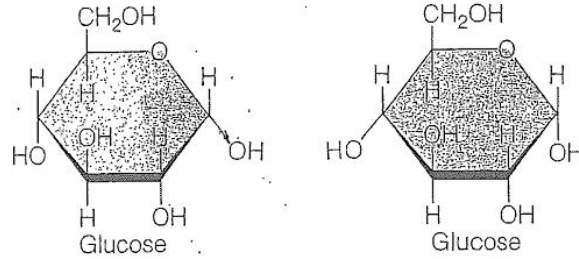
Read each of the numbered statements below and fill in the term, prefix, or suffix in the blank space next to its meaning.

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1. To split or break apart; to release
_____ | DEHYDRATE |
| 2. To make something
_____ | HYDRO- |
| 3. Many monomers hooked together to make a
_____ | SYNTHESIS |
| 4. Means to lose or remove water; to take away
_____ | -LYSIS |
| 5. A process where two molecules lose the
'parts' of water and join (bond) together
_____ | DEHYDRATION SYNTHESIS |
| 6. A process where a molecule splits into two (or more)
smaller molecules and gains the 'parts' of water
on the broken ends
_____ | HYDROLYSIS |
| 7. Means water (as in gaining water)
_____ | MONOMER |
| 8. Building block or single unit of a polymer is a
_____ | POLYMER |

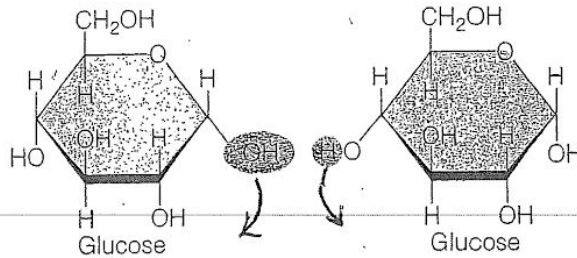
Dehydration Synthesis and Hydrolysis

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~~

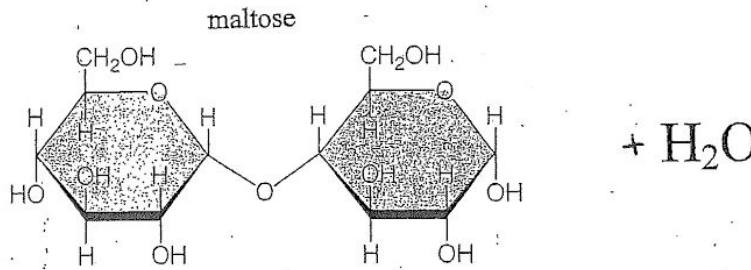
THE FOLLOWING DIAGRAMS SHOW THE PROCESS OF _____



BEFORE: _____



STEP 1: _____



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.

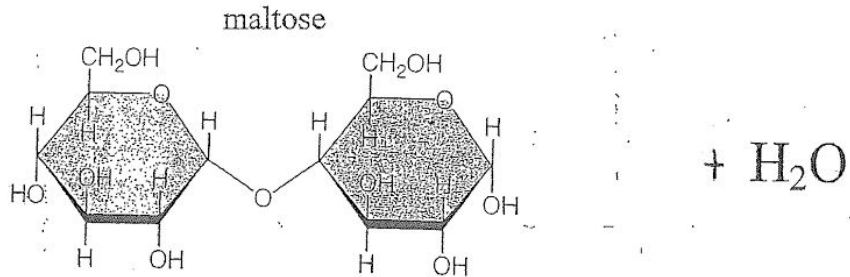
Questions:

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

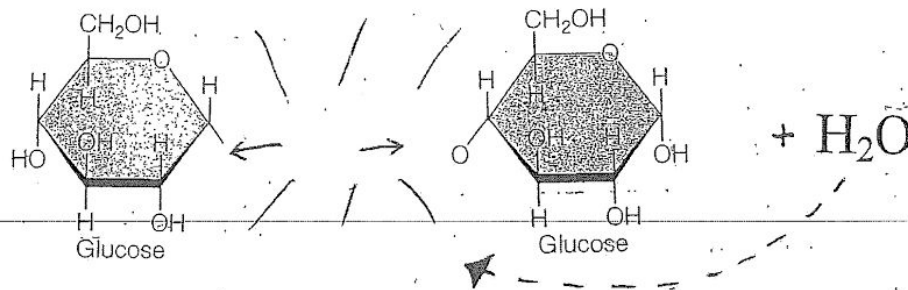
~~What figure in this chapter shows this process for the formation of a protein? _____~~

DEHYDRATION SYNTHESIS AND HYDROLYSIS

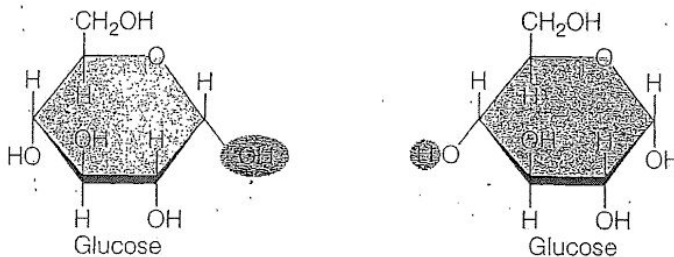
THE DIAGRAMS BELOW SHOW THE PROCESS OF: _____
(Enzymes allow this process to happen in both process on pp. 2 and 3)



BEFORE: _____



STEP 1: _____



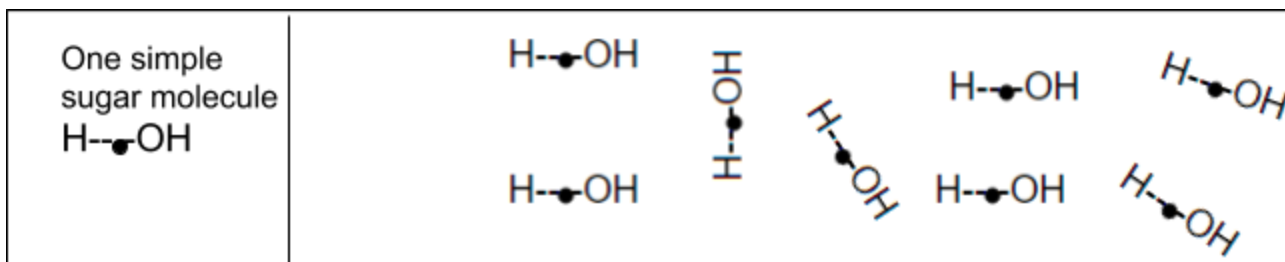
STEP 2: _____

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

- The losing of water from two organic molecules, then the JOINING of those molecules is termed _____.
- 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 _____.
- 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) _____.
- 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) _____
- According to the process shown on page 2, how many water molecule(s) are formed when ONE BOND is made between two organic molecules? _____
- 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? _____



- According to the process shown on page 3, how many water molecule(s) are needed when ONE BOND holding two sugars (or any organic molecules) breaks? _____
- Dehydration synthesis is a process which is exactly the opposite of _____.
- One bond between two organic molecules forms _____ water molecules.
- Ten bonds between eleven organic molecules forms _____ water molecules.
- List four groups of organic compounds: _____, _____, _____, _____.