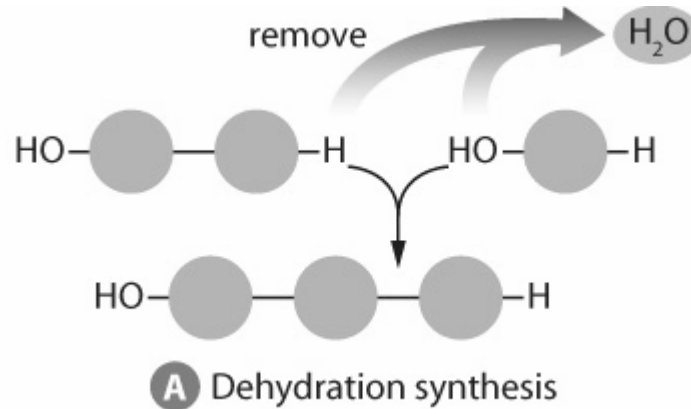


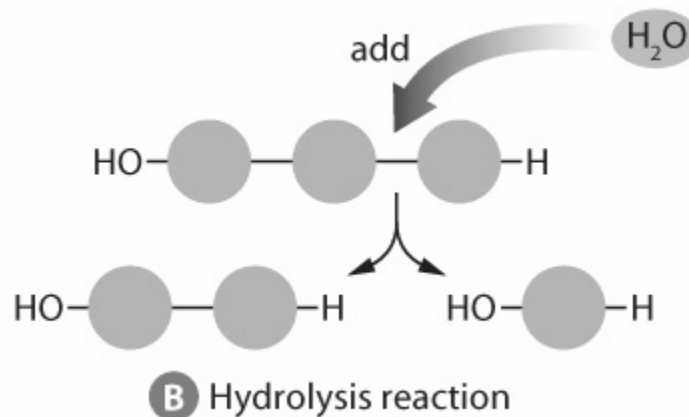
CHAPTER 6**ANSWER KEY****Macromolecules Answer Key****BLM 6.1.2A**

1.



To form a covalent bond between two subunit molecules, an -OH (hydroxyl) group is removed from one subunit and a hydrogen atom is removed from the other subunit. This chemical reaction is known as dehydration synthesis because removing the -OH group and H atom during the synthesis of a new biological molecule essentially removes a molecule of water (H_2O). (Dehydration means “without water.”) The process of positioning and breaking chemical bonds is carried out in cells by a special class of proteins called enzymes.

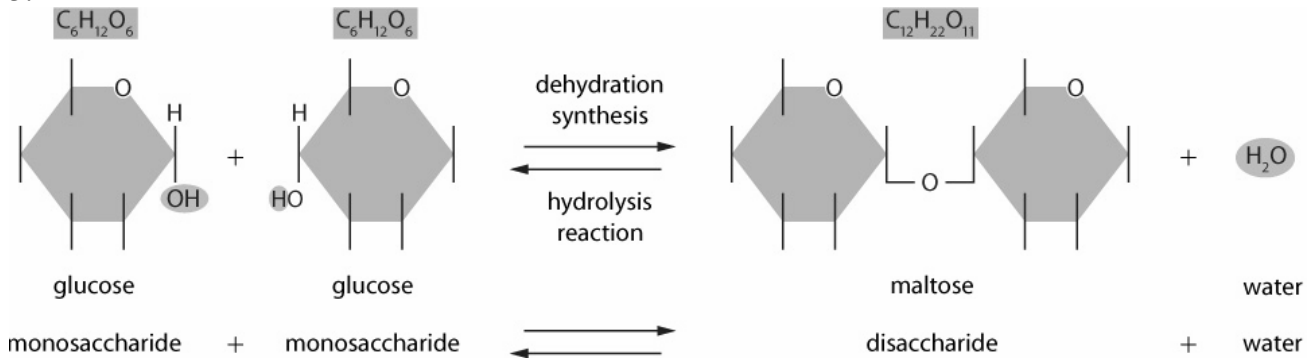
2.



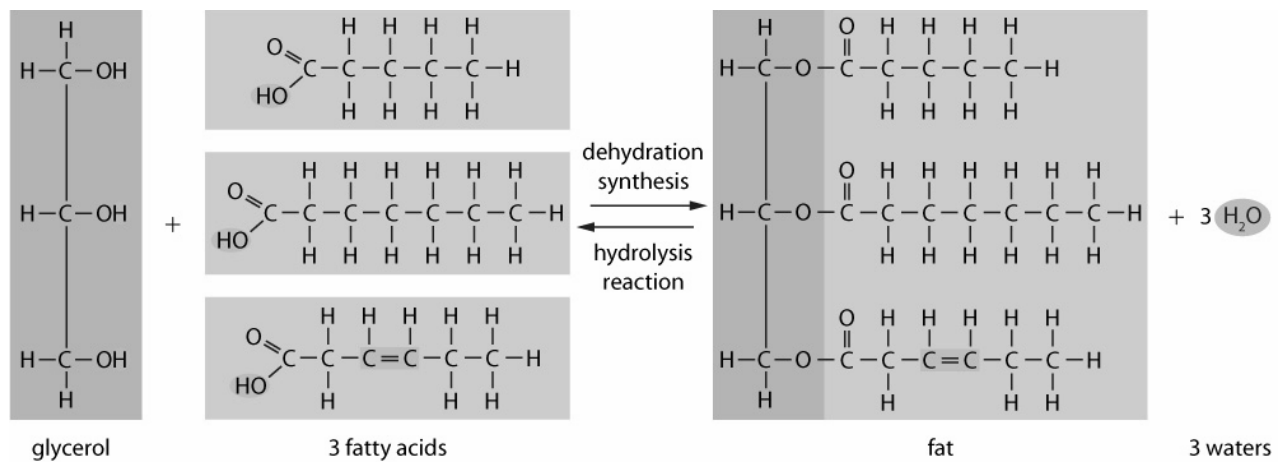
Cells disassemble macromolecules into their component subunits by performing a chemical reaction that basically reverses dehydration. In this reaction, called hydrolysis, a molecule of water is added instead of being removed. During a hydrolysis reaction, a hydrogen atom from water is attached to one subunit, and the hydroxyl group is bonded to another subunit, effectively breaking a covalent bond in a macromolecule. As in dehydration, hydrolysis involves enzymes.

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3.



4.



5.

