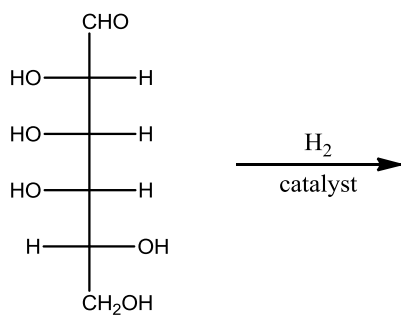


Carbohydrates Worksheet

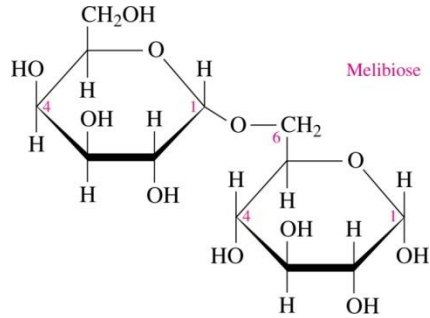
1. What is the molecular formula of glucose?
2. Draw the Fischer projection and write the name of each of the following classes of monosaccharides:
 - a. a D aldohexose
 - b. an L ketohexose

c. an L aldotetrose

3. Draw the product of following chemical reaction.



4. Melibiose is a disaccharide that is 30 times sweeter than sucrose.



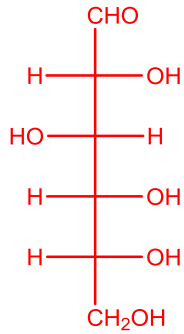
- What are the monosaccharide units in melibiose? Name from left to right.
 - Name the glycosidic bond that links the monosaccharides?
 - Identify the structure as α - or β -melibiose. Explain.
5. Write the chemical equation for the hydrolysis of α -lactose. Name each component of the reaction.
6. Amylose, amylopectin, glycogen and cellulose are all polymers of what monosaccharide?

Answers

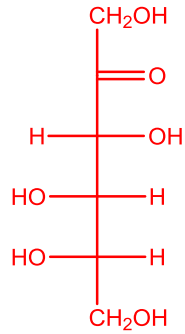
1. $C_6H_{12}O_6$

2.

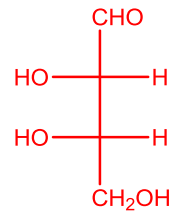
a.



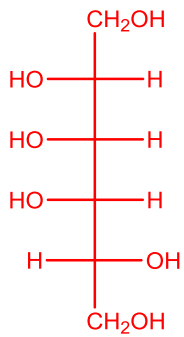
b.



c.



3.



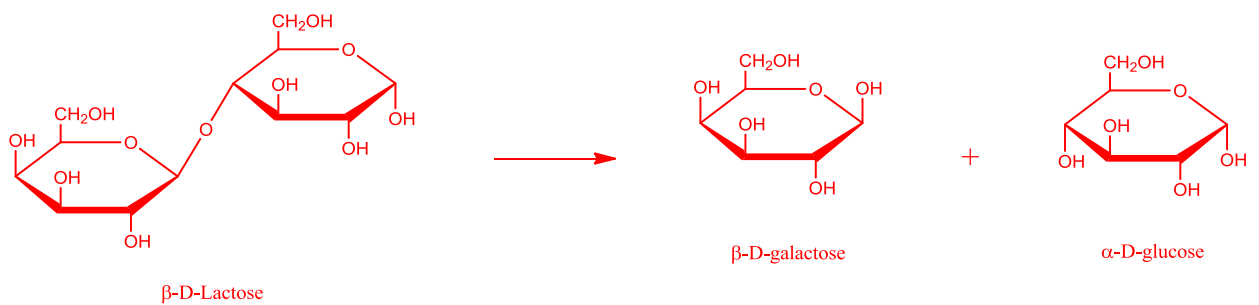
4.

a. α -D-galactose; α -D-glucose

b. α (1 \rightarrow 6)

c. α , because the monosaccharide with the free anomeric carbon is in the alpha conformation.

5.



6. D-glucose