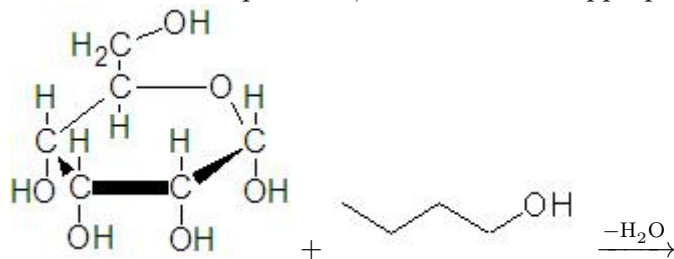


Name: _____

Date: _____

- [4 pt] 1. Complete the following reaction. Draw an arrow to any hemiacetal, hemiketal, acetal, or ketal carbons in the reactants and products, and label them appropriately.



- [3 pt] 2. List at least 3 characteristics of a typical oxidation reaction?

- [3 pt] 3. List at least 3 characteristics of a typical reduction reaction?

- [4 pt] 4. Draw **AND** name the product that occurs when L-mannose is mildly oxidized.

- [4 pt] 5. Draw **AND** name the product that occurs when L-mannose is reduced

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- [6 pt] 6. Starting with the proper D-tetrose, show the steps for the synthesis of D-Glucose by the Kiliani-Fischer synthesis. Only include the reactions that lead to the production of the "correct" product, and ignore the reaction that produces the "wrong" products.
- [6 pt] 7. What is meant by term "reducing sugar"? What are the 3 structural groups or features that must exist in a molecule to be considered a "reducing" sugar? Name and draw an example of each functional group.