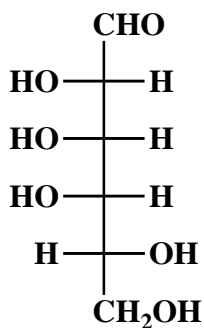


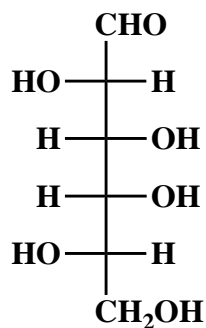
Problem Set 14

1. Draw the most stable conformation of the α -anomer of the pyranose hemiacetal of each of the following two monosaccharides. Denote all 1,3-diaxial interactions clearly.

A. D-(+)-talose

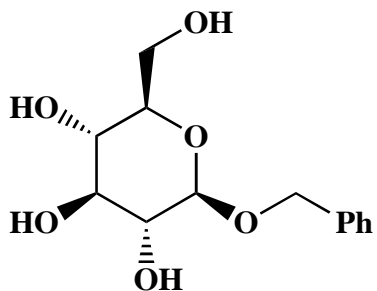


B. L-(-)-galactose

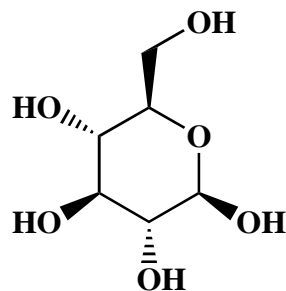


2. Which of the following four carbohydrates are “reducing sugars”? Use a mechanistic rationale to explain your reasoning clearly.

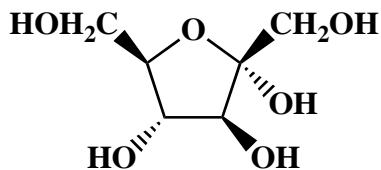
A.



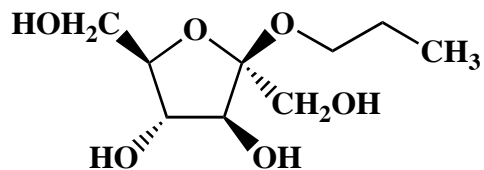
B.



C.



D.



3. Draw **two** distinct mechanisms for the following equilibrium, using the curved-arrow notation to indicate the reorganization of electron density. Denote **all** intermediates, lone pairs, nonzero formal charges, countercharges, and reversibility or nonreversibility. Finally, denote how the starting material and product are related to each other stereochemically.

