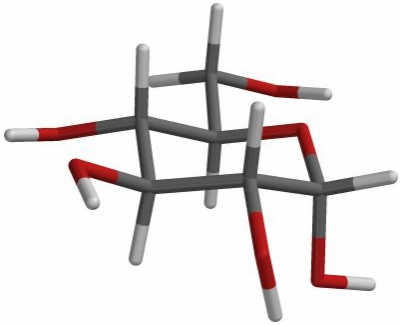

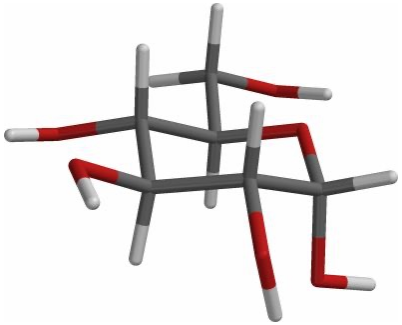

Chem 109 C

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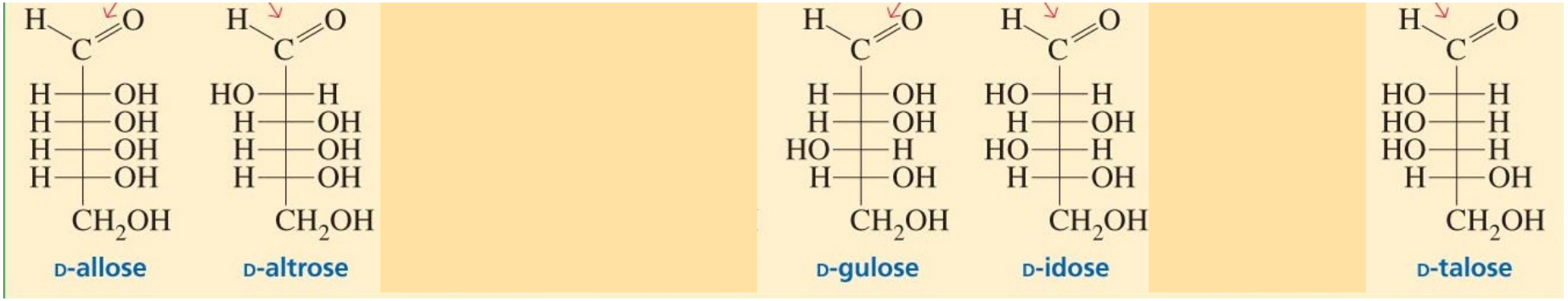
Chapter 21 Practice Problems set 2

Practice problem 1

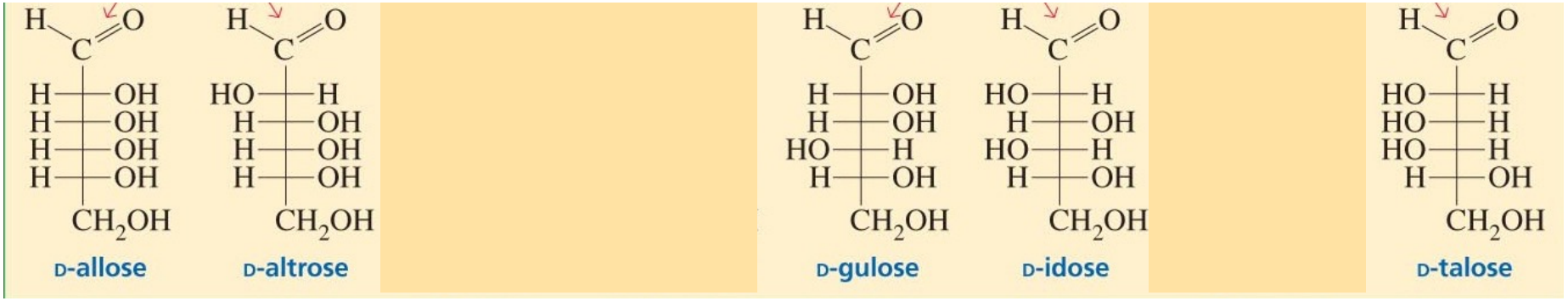
Predict whether L-altrose exists preferentially as a pyranose or a furanose. (Hint: in the most stable arrangement for a ring, all the adjacent substituents are trans)



Practice problem 2

Draw Haworth projections and conformational drawings for

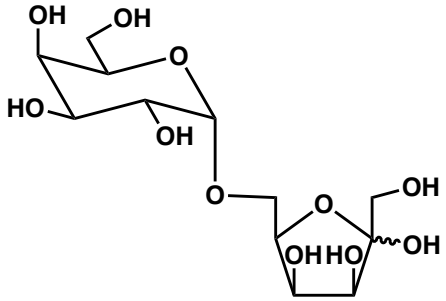
- α-D-gulopyranose
- β-D-galactopyranose
- α-D-ribopyranose
- propyl α-D-ribofuranoside and propyl α-L-ribofuranoside



Practice problem 3

Disaccharide X is hydrolyzed to D-hexoses A and B. All sugars (X, A, B) give a positive Tollens test (oxidized with Ag_2O). A reacts with Br_2 (decolorizes), and B does not. Under aqueous basic conditions, A gives some amount of B. When A is treated with $NaBH_4$, an optically inactive product is formed. Wohl degradation of A followed by reduction with $NaBH_4$ gives an optically active product.

When X is treated with excess CH_3I, Ag_2O and an α-glycosidase, A methylated at positions 2,3,4, and 6 is formed, along with B methylated at positions 1, 3, and 4.



Provide the structure of X