

Exercise 4: Saccharides

1. Sucralose is a noncaloric sugar (taste sweet but is not burned in the body) that is now commonly used in diet products. Sucralose has the structure of sucrose but 3 of the hydroxyl groups have been replaced by chlorine atoms. The three OH positions that have been replaced are the C-4 position of the glucose component and the C-1 and C-6 positions of the fructose component. Draw the structure of Sucralose (in one of its cyclic forms). **Note:** When the hydroxyls were replaced by the chlorines, this was done via an S_N2 mechanistic route.

2. Draw the α and β cyclic forms of D-sorbose and D-mannose. Out of these 4 forms, circle the form that you would consider the most stable. Also indicate which carbons in each form are the **anomeric** carbons.

3. Draw both possible disaccharides of mannose and sorbose complete with an α -1,4'-glycosidic linkage.