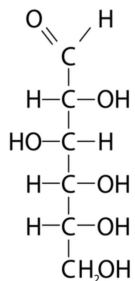


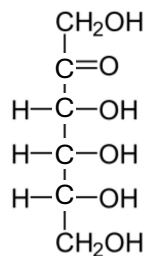
## Exercise 2: Carbohydrates

### Extra Practice

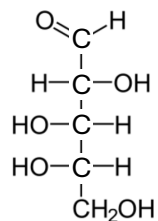
Below are the linear structures of D-Glucose, D- Psicose and L-Arabinose.



D-Glucose



D- Psicose



L-Arabinose

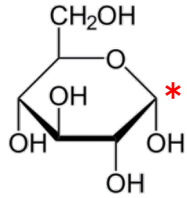
a) Draw the cyclic structures of each sugar in alpha ( $\alpha$ ) stereoisomeric form and indicate the location of anomeric carbon. (In the case of L-Arabinose, draw a structure as pyranose)

b) Trehalose (glucose- $\alpha(1 \rightarrow 1)\alpha$ -glucose) is a disaccharide assembled from **2 D-Glucose** through  **$\alpha(1-1)\alpha$  O-glycosidic linkage**. Draw the structure of this disaccharide based on the cyclic forms of each monosaccharide building block.

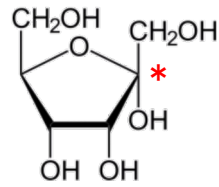
c) Vicianose (arabinose- $\alpha(1 \rightarrow 6)$   $\beta$ -glucose) is another disaccharide assembled from **1 L-Arabinopyranose** and **1 D-Glucose** building blocks using the  **$\alpha(1-6)\beta$  O-glycosidic bond**. Draw the structure of this disaccharide based on the cyclic forms of each monosaccharide building block.

## Answers

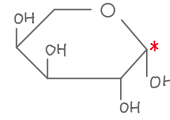
a) Draw the cyclic structures of each sugar in alpha ( $\alpha$ ) stereoisomeric form and indicate the location of anomeric carbon.



$\alpha$ -D-Glucose



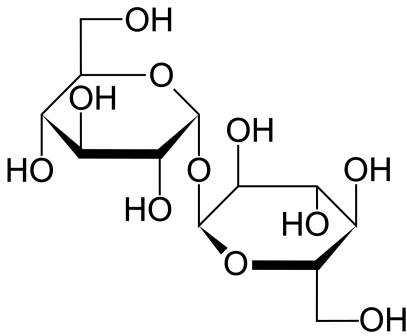
$\alpha$ -D- Psicose



$\alpha$ -L-Arabinopyranose

\* : anomeric carbon

b) Trehalose (glucose- $\alpha(1\rightarrow1)\alpha$ -glucose)



c) Vicianose (arabinose- $\alpha(1\rightarrow6)$   $\beta$ -glucose)

