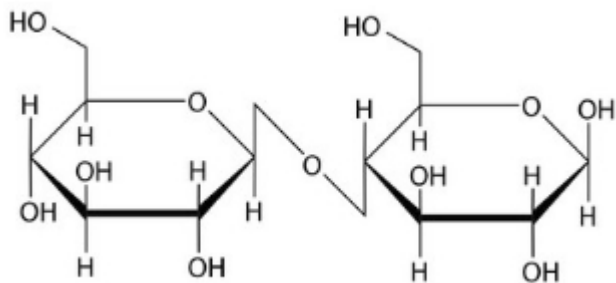


Name: \_\_\_\_\_

Date: \_\_\_\_\_

[5 pt] 1. Answer the following questions about the disaccharide shown below:



- (a) Is it  $\alpha$  or  $\beta$  anomer? (Draw an arrow pointing to the carbon that determines this). 1(a) \_\_\_\_\_
- (b) Is the left monosaccharide a furanose or a pyranose? 1(b) \_\_\_\_\_
- (c) Is the right molecule a furanose or a pyranose? 1(c) \_\_\_\_\_
- (d) What type of glycosidic bond connects the two monosaccharides? 1(d) \_\_\_\_\_
- (e) Circle any hemiacetal carbon(s), and place a square around any acetal carbon(s).

[5 pt] 2. Draw the Haworth formula for  $\beta$ -D-glucopyranosyl-(1,4)- $\alpha$ -D-galactopyranose.[5 pt] 3. Draw the Haworth formula for  $\beta$ -D-galactopyranosyl-(1,6)- $\beta$ -D-mannopyranose.

[5 pt] 4. What is meant by the term mutarotation? Of the disaccharides sucrose and lactose, which show mutarotation. Explain why each does or does not show mutarotation.

