Chemistry 30B **Experiment 11**

Lab Partner:_____ Name:_____

_____

Fehling's Test

Substance	**Observations**	**Positive or negative test?**
Glucose		
Fructose		
Lactose		
Sucrose		
Starch		
Unknown number:		

Barfoed's Test

Substance	**Observations – include time needed for ppt (if any)**	**Positive or negative test?**
Glucose		
Fructose		
Lactose		

Substance	Observations – include time needed for ppt (if any)	Positive or negative test?
Sucrose		
Starch		
Unknown number:		

Seliwanoff's Test

Substance	Observations – include time needed for color change (if any)	Positive or negative test?
Glucose		
Fructose		
Lactose		
Water		
Unknown number:		

Iodine Test

Substance	Observations	Positive or negative test?
Glucose		
Fructose		
Lactose		
Sucrose		
Starch		
Water		
Unknown number:		

Fermentation Test

Substance	Observations	Positive or negative test?
Glucose		
Fructose		
Lactose		
Sucrose		
Starch		

Substance	Observations	Positive or negative test?
Water		
Unknown number:		

Hydrolysis of Sucrose (Fehling's Test)

Substance	Observations of Fehling's test	Positive or negative test?
Hydrolyzed sucrose (neutralized)		

Hydrolysis of Starch

Substance	Observations	Positive or negative test?
Hydrolyzed starch and Fehling's solutions		
Hydrolyzed starch and iodine solution		

Questions

1. According to the results of each part of the experiment, identify your unknown and explain your reasoning.

2. Compare the results you obtained for the Fehling's test of sucrose to the Fehling's test of hydrolyzed sucrose. Explain your results.

3. Compare the results you obtained for the Fehling's test of starch to the Fehling's test of hydrolyzed starch. Explain your results.

4. Compare the results you obtained for the iodine test of starch to the iodine test of hydrolyzed starch. Explain your results.

5. What is meant by the term "reducing sugar"?

6. What is the purpose of testing water in the Seliwanoff's test and the iodine test?

7. Draw the ring structures for α-D-fructose and for β-D-fructose.

8. An unknown carbohydrate gave a red precipitate when tested with Fehling's reagent, turned red when reacted with Seliwanoff's reagent, and quickly gave a red precipitate when reacted with Barfoed's reagent. What conclusions can be made about this carbohydrate? Explain.

9. What test could be used to differentiate between sucrose and lactose? Explain.

10. What test could be used to differentiate between glucose and starch? Explain.

11. What test could be used to differentiate between glucose and fructose? Explain.

12. Why don't all of the disaccharides undergo fermentation with yeast?