1.5. Post-lab questions: Lab #1 Chem 4524 (turn in before leaving lab)

(20 pts total)

Your name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**0) Which of these are expected to polarize light : (circle all that apply)**

methyl chloride 2-butanol D-sucrose cyclohexyl fluoride

**1) What is the difference between [α]DT and α ?**

* **[α]DT is the specific rotation which is the observed rotation per c=(g solute/mL solution and per decimeter of cell path length, d.**

[α]DT = α

d(dm) c(g/mL)

* + **is just the observed rotation under any condition (what you measure)**

1. **Which condition(s) as seen through the eyepiece correspond to not being at the right analyzer angle to measure the optical rotation ?**

*( circle your answer(s))*

3) **Given that you dissolved 5 grams of a sugar into 50 mL, and observed an optical rotation of -11o using a 5 cm (0.5 dm) cell, what is the specific rotation of the sugar ?**

[α]DT = α = -11. =-220o

d(dm) c(g/mL) 0.5\*(5/50)

**4a) Given that Bob, an unknown sugar, produces an observed rotation**

**of +10o can we legitimately refer to Bob as a D-Bob ?**

**YES NO**

**4b) Explain why you chose the answer you did in 3a.**

The assignment of D to a compound is due to an arbitrary protocol related to molecular structure. Rotation + or – is completely unrelated to this protocol

Any observed specific rotation of sugars within 30% error received full credit