**Aldehydes and Ketones Homework**

Please use your lab sheet to answer the following questions:

1) What functional group is shared between aldehydes and ketones?

2) Draw a sample aldehyde and ketone.

3) What is a nucleophile? Please describe this in terms of oxygen. Drawing a reaction may be helpful.

4) Look up a nucleophilic addition reaction. How would you define it? Drawing a reaction may be helpful.

5) Demonstrate how acetone and 2,4 DNP exhibit a nucleophilic reaction.

6) The final product involves the use of the hydronium ion as a catalyst. Illustrate and describe how this works.

7) What is a hemiacetal?

8) What is an acetal?

9) Using chemical structures, illustrate an example of the formation of a hemiacetal.

10) What type of reaction occurs when aldehydes are exposed to chromic acid?

11) How does chromic acid distinguish between aldehydes and ketones?

12) What other compounds can also react with chromic acid?

13) Describe how to properly perform a chromic acid test.

14) How do you make Tollen’s reagent?

15) Why is it important to dispose of the Tollen’s reagent as soon as you are done using it?

16) How does Tollen’s reagent theoretically distinguish between aldehydes and ketones?

17) How would you recognize a positive Tollen’s test?

18) Describe the type of chemical reaction that occurs during the iodoform test.

19) Which particular ketone type reacts to the iodoform test?

20) Which aldehyde can react and give a positive iodoform test?

Please make a chart below and record the results for each aldehyde and ketone tested below. This is good practice because it is the kind of thing you will have to demonstrate when you complete your final.