Lab notebook, procedure outline, prelab assignment and lab report

You will be expected to write up all laboratory experiments in a lab notebook (with printed page numbers and duplicated pages available in campus bookstore) according to the following guidelines.

Before coming to lab you should read the entire experiment and (i) do the Pre-Lab assignment in the lab manual (not lab notebook) and (ii) complete the following in your lab notebook in ink according to the outline below.

- Title and date of the experiment
- Name(s) of Student (leave space for partner’s name to be completed in class) like this:
  Jane Doe (John Johnson - partner)
- Introduction/Purpose section of the experiment
- Procedure section of the experiment
- Data table(s) for recording information - Remember No data table means no credit for the write up.
- Enter the title and the starting page number for each experiment in Table of Contents.

1. Introduction/Purpose

- Describe the overall goals of the experiment. What is it that you are trying to accomplish/determine with the experiment? – limit to 1 or 2 sentences
- Do not forget to include the mathematical formulas and/or balanced chemical equations that form the basis of the experiment in this section.

2. Procedure

- Clearly describe in a step by step fashion the procedure used for the experiment. Another student should be able to perform the experiment from your procedure. Remember that you will be allowed to use only your notebook not your lab manual when doing the experiment.
- Use bullet form and check the list as you proceed with the experiment.

3. Results/Data

- Use a ruler and construct data tables so that data can be shown in an easy to read format. Please present all data tables after the procedure section and do not scatter them all over the procedure pages.
- Pay attention to units and significant figures.
- You will not do any calculations in your notebook – so please understand the difference between data and calculations and leave space for only data in your chart not calculations.

Both your lab notebook and the pre-lab assignment (torn from lab manual) will be collected in the first 5 minutes of class. If the procedure is not written you will be required to leave the room to complete it before beginning the experiment for zero (0) points. If you end up starting the experiment late because of this, you will not be given any extra time to finish the experiment.
• **During the lab** all data collected and observations made must be recorded as you perform each experiment in **ink directly into your lab notebook** (**not** on scratch papers and paper towels to be transferred later). **Never** tear out pages, **nor** use whiteout, **nor** obliterate mistakes. A single line through a mistake is enough. (so that it is still readable like this) and enter the correct data next to or above it. The data collected **must be initialed** by me before you leave. In some experiments, you will be required to get the data signed multiple times at different stages of the experiment (to ensure your experiment is proceeding without any glitch). Neglect of this responsibility will cost you all the points for that lab. Once the lab is complete, and you are now clear on all that is needed in the table, you may redo your data charts. But the original signed data charts should all be intact.

**After the lab work is complete**, you need to perform **Calculations and Analysis of Results and Answer the Assigned Questions**:

This part should be done on the **report sheets**, provided at the end of each experiment in your **lab manual** (**not** in your notebook). If it is a hand out, it will be done on the calculation part of the handout.

- Show all calculations clearly, and with attention to significant figures and units for those experiments that involve calculations. Examples of each calculation should be provided corresponding to the table that depicts that result. You need only show one sample calculation if that calculation is used repeatedly in the analysis of the data.
- What is your percent error if the true value is given? Include answers to any assigned questions and/or analysis of your results.
- Calculate mean and standard deviation if you have enough trials to make these meaningful.
- Answer all Post-Lab Questions neatly in the **lab manual**.

**Conclusion:** Write/Type this in a separated piece of paper and attach it to the report.

- In a brief paragraph, clearly summarize what, if any conclusions you were able to draw from the results of your experiment. Discuss any possible errors that may have occurred during the experiment (please do not write human error). What are the major sources of error? How did these errors affect your results? How could the experiment be improved?

- Your conclusion should relate directly to the purpose or goals of the experiment. Use your data to support/substantiate your conclusion.

Turn in your completed **REPORT SHEETS (from the lab manual)** with your procedure outline torn off from your **lab note book** and stapled to the **front of the REPORT**.