Guidelines for Lab Follow-up Work

Overview:

1. Expectations for a specific lab's follow-up will be found at the end of a lab's protocol.
2. A specific follow-up work may not require *all* the sections of a typical lab report.
3. All submitted work must be completed according to these guidelines.
4. Submit required sections in the proper order - as listed below.
5. Use a passive voice (no personal pronouns).
6. Write the text in the past tense. Example: "The solution was stirred until there was a color change."
7. Spelling and grammar, chemical notations, and scientific symbols count. For each mistake, 0.5 may be deducted up to a maximum of 4 mistakes (= 0/2).
8. Include page numbers (ex. Page 1 of 4).
9. Submit your work on Moodle as a pdf to avoid issues with numbers and equations.
10. Due ONE week following the lab at the beginning of the lab time (unless otherwise stated).

Title Page: (2 pts)[1]

- Each lab follow-up starts with a title page with the following information centered.
    - Brief title (1-2 lines) in your own words, AND states exactly what was studied; ex. *Lab 21: Identify an unknown substance using melting and boiling points in ℃*.
    - Your name and Partner's name
    - Teacher's name
    - Name of the institution
    - Name of the course
    - Course number
    - Group number
    - Date submitted (due date)
- See the last page of this document for an example.

Purpose: (2 pts)

- Stated in your own words and in complete sentences.
- Do *not* copy given objectives.

Introduction: (5 pts)

- Written as an essay (unless stated otherwise).
- Provides background information about the lab.
- Demonstrates understanding of the purpose of the lab in relation to the protocol.
- If required, include a hypothesis.

[1] Distribution of points is only given as an example.

Procedure: (5 pts)

- Written in complete sentences and in paragraphs.
- Equipment, chemicals, and quantity used are stated in context of the protocol.
- Do not include lists. Example: "Using an analytical balance, 4.0 g of NaCl was measured using a weigh boat."
- Separate ideas or parts of the protocol in different paragraphs (do not write one long paragraph).

Results and Observations: (15 pts)

- Include *all* data - observations and/or measurements - in Tables and/or Figures.
- **Tables:**
    - Organizes data.
    - Numbered independently from figures, and in sequence.
    - Descriptive title *above* the table clearly indicates what is being shown.
        - Ex. *Table 1: Volume, mass, and density of the NaCl solution.*
    - Include 1-2 sentences that describe *trends* of the data and observations. Do not simply restate what is on the table.
    - Do NOT analyze the data in this section.
    - More than one table is allowed.
- **Figures:**
    - Visually represents results (ex. graphs, etc.).
    - Numbered independently from tables, and in sequence.
    - Descriptive title *below* the figure clearly indicates what is being shown.
        - Ex. *Figure 1: Temperature-dependent UV-V adsorption spectra of D1E1 (1 x 1^{-5} M) in methanol. Temperatures between 20.0 and 70.0℃ at 10.0℃ increments.*
    - For graphs:
        - Label axes and include units.
        - Use an appropriate scale.
        - Include a trendline (best fit line or curve).
        - Display the trendline equation and R^2 value.
    - Include 1-2 sentences that describe *trends*.
        - What is the trendline equation and R^2 value? What do they tell you about the relationship between the variables?
    - Do NOT analyze the data in this section.
    - More than one graph is allowed.
- **Other information:**
    - Refer to calculations in the appendix when appropriate.
        - Ex. *Calculations for the limiting reagent are found in Appendix A*
    - Include significant figures and uncertainties where applicable.

- The written text of this section should focus on the highlights in the data and direct the reader to specific Tables and Figures.
- Include the time and date the lab was done.
- Include constants of the experiment (ex. room temperature, pressure...)

Analysis: (20 pts)

- As instructed for a specific lab - either follow-up questions or written as an essay.
- What does the data mean and how does it relate to the purpose of the lab?
- Use data and look for patterns and relationships.
- Include examples of the data to support statements.
- Compare the results to what is found in other studies and/or theoretical values.
- Use and include at least 2 references (do not refer to class notes or the textbook).
- Address significant sources of error.
- Suggests improvements to the protocol.

Conclusion: (5 pts)

- Summarize (~10 lines) the results in context of the purpose or hypothesis.
- Suggest future scientific enquiries to further the knowledge of this topic.

Citations: (3 pts)

- Use the NAME-YEAR system as presented by CSE (Council of Science Editors): https://www.scientificstyleandformat.org/Tools/SSF-Citation-Quick-Guide.html
- Citations can be electronically generated using the following:
  1) Free CSE Citation Generator: https://www.mybib.com/tools/cse-citation-generator
  2) References ribbon in Word document (APA style).
  3) Some websites include a link that generates a citation.

Appendix: (15 pts)

- Sample calculations:
  - Include informative titles, formulas, units, and significant figures.
  - A picture of hand-written calculations can be used.
- Tables or diagrams from other sources, which are properly cited.
- Include a digital record of each page of the Lab Notebook for the corresponding experiment.
  - Each page from the Notebook should take a full page in the report and be legible and clear.
  - Include the signature of the teacher or lab technician signed the day of the lab.

SAMPLE COVER PAGE

Centre all information.
Use Times New Roman, 12-point font with 1-inch margins.

COLLÉGIAL INTERNATIONAL
SAINTE-ANNE

Lab #5: Determining the Concentration of a Solution Using Spectroscopy.

Jack Brown and Jill Blue
General Chemistry
202-SN1-RE
Group 01

Ms. Silkauskas

December 31, 2000