Lab Reports

- *Lab reports are due the following week in the lab unless otherwise stated by the instructor. Check the course website & online calendar.*
- *Hand-written lab reports are acceptable*. It is not necessary to type up your lab report on a computer. However, if you wish to use your computer to generate your lab reports, you will need to pay attention to formatting such as: capitalization, and the use of subscript and superscript when typing chemical formulas and symbols. Marks will be deducted for incorrect spelling and improperly formatted chemical formulas and symbols.

1. Cover Sheet

- Title of experiment.
- Student's name and partner's name(s) if the experiment was carried out with partners.
- Date of the Experiment.
- Objective of the experiment (can be copied from the manual).
- Conclusion (in your own words) State, from your observations and measurements taken, how the objectives of the experiment were met. See the Conclusions Writing Guide section of the lab manual.

2. OBSERVATIONS (qualitative) / DATA (quantitative)

- Use the data sheets provided in the lab manual.
- Record data into data sheet directly **in ink, not on a piece of scrap paper, nor on paper towels.**
- Have your instructor check and initial your observation/data before you leave the lab.
- Remember to include the UNITS of the measurements and record the correct number of significant figures of the measurements.
- Any mistakes made in data entry should be crossed out NEATLY with a fine line. Do NOT use white out.

3. CALCULATIONS

- Show one example of each type of calculation. Calculations can be done in pencil.
- Show all *numbers and units used in all calculations and record the final answer with the correct* number of significant figures.

4. GRAPH – if needed

5. RELATED QUESTIONS

- These questions should be answered in a concise and clear manner using proper English and grammar.

Lab Write Up Exercise

- See the Conclusions Writing Guide section of the lab manual.
- Pay attention to English and grammar.

Let's practice and write the conclusion for:

Experiment 25 - Determining the pH of Liquids

Experiment 25 – Determining the pH of Liquids

Objectives:

- -To standardize a pH meter and then use it to measure the pH of different liquids.
- -To classify different substances as acidic, basic, or neutral.

Introduction:

One of the most important analyses in industry is the measurement of the acidity, neutrality, or basicity in chemical processes. Typical industries employing such tests are in resin manufacturing, pulp and paper, mining, food production, pharmaceuticals, and environmental monitoring. Chemical feedstocks, intermediate and finished products, and effluents (waste water, etc.) are all monitored. The water pH affects the environment and this is closely measured as well.

On the pH scale, an acidic solution has a pH less than 7, while a basic solution has a pH greater than 7. A neutral solution has a pH equal to 7.

Procedure:

1. Watch the demonstration on how to standardize a pH meter. Standardize your pH meter.
2. Use the pH meter to measure the pH of the solutions. Record your results in the data table.

Data Table

Solution	*Battery acid*	*Salt*	*Sprite*	*Ammonia*
pH measurement				

Question

1. *Based on the pH measurements classify the solutions as acidic, basic or neutral.*

The lab report should include:

- Cover Page
- The objectives (copy from the lab manual)
- The instructor-signed data collected during the lab
- The answer(s) all the question(s) in the lab manual (unless they are “practice questions”).
- Conclusion

Let's write the conclusion for:

Experiment 25 - Determining the pH of Liquids

Data taken:

Solution	Battery acid	Salt	Sprite	Ammonia
pH	1.04	7.02	4.13	8.30

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Remember, the "Conclusion" summarizes the results and addresses the objectives.

Consult the Conclusion Writing Guide

- Using no more than **6 or 7 proper sentences**, write your conclusion using the suggested keywords for each lab. This means:
    - your conclusion should **not** sound like the lab procedure.
    - key points could be combined, summarized and your results are reported.
    - your conclusion should be written with proper grammar, correct spelling, and proper use of superscript and subscripts.
    - never use 'I' ‘my’, ‘you’, ‘us’ or 'we' in your sentences.
- After you've written your conclusion, read it out loud slowly to make sure what you've written makes scientific sense.

Experiment 25 – Determining the pH of Liquids

In this conclusion, include the following key points by using the following keywords:

- pH
- Standardize a pH meter
- Acidic, basic, neutral

Summarize the classification of the solutions measured

Sample Conclusion

The pH meter was standardized with buffer solutions of pH = 4 and pH = 7. The pH of five different solutions were measured with the meter. Below is a summary of the solutions measured and the classification of each solution as acidic, basic, or neutral.

Solution	Battery acid	Salt	Sprite	Ammonia
pH	1.04	7.02	4.13	8.30
Acidic / Basic / Neutral	acidic	neutral	acidic	basic