How to write a lab report for PHYS.1440L

Cover page and objective (5 pts):

Cover page:
Your Name
Course Number and Section Number
Instructor’s Name
Title of Experiment
Date Experiment was performed
Partner’s Name
Objective(s)

Objective(s): Write one or two sentences which state your objective clearly. Compare the objective written in your lab manual with yours.

Introduction (10 pts): Use ALL the equations that were written on the board (You can find them easily in your lab manual). Each equation should have a brief description with clear definitions of all the variables. If there are some derivations show them and explain your steps.

Apparatus and Procedure (10 pts): Very clear!
1. Include a block diagram for each part of the experiment. If your lab consist of five different parts do not forget to provide five different diagrams.
2. Provide a complete list of the equipment used.
3. If you followed the procedure given in the lab manual, just state that in one sentence, that’s it. If not, describe what you did differently and why.

Results and Analysis (20 pts): Consider it as having two different parts.
1. Results: Provide the data that you have collected during the experiment. Do the calculations according to the lab manual. You have to provide sample calculations for every different part of the experiment. Double check the lab manual for calculations and graphing that are needed for every experiment. Sometimes the lab manual wants you to do some extra calculations or specific types of graphing with your data.
2. Analysis: In this part forget your theory for a while (We are not sure about our theory yet). Just describe the data and the results that you have.

If you have a graph, describe the maximum and the minimum points with values, describe the regions where the graph is increasing or decreasing. If you have different graphs for the same experiment compare them in detail.

If you have numbers as a result, describe the changes in your result due to a parameter change, describe how the result and the parameter are related.

For some experiments (Experiment 1 and 6) all you have is plotted lines or dots on a data sheet. Again you have to describe what you see.

You have to analyze and describe your data in detail!
Discussion (10 pts): Take the theory into account!

1. Discuss your results by comparing them with the theory. Is there any difference between your theory and your result? Is your theory acceptable? Explain these.
2. Discuss the experimental uncertainties and errors. Explain the reasons for errors.
3. Answers any questions given in the manual. Label answers to the questions.

Conclusion (5pts): Remember your objective! The Conclusion of the report explains the conclusions that you can draw from your measurements, whether they agree with theoretical predictions. Restate your objective by summarizing it in one or two sentences with your conclusions.

Notes:

1. Do not forget the units (Volts, Amps, Ω, Watt, etc.).
2. See the example,
   
   Active: We heated the solution to 80°C.
   
   Passive: The solution was heated to 80°C.

   Avoid using active voice, you should use passive voice in your lab reports.