Every job is a self portrait of the person who did it. Let your signature be excellence.

Lee Martin

- Laboratory reports are individual writing assignments, not group projects, so do all your own calculations, graphing and writing or it will be considered plagiarism.
- Laboratory reports, including all graphs and tables, must be printed not handwritten.
- Any time you use a fact or an idea from another source including verbal conversations and correspondence, the source must be cited as (author, date of publication) immediately after the information you obtained from this source. Do not quote sentences verbatim from your sources as this is not Shakespeare.
- Each section should be written up as a clear, concise essay, not a list of answers to the points listed under each section below. The listed points are merely to show you what should be included in your report.
- The hypotheses and predictions are done before you do the experiment, so don't see what you got for results and then write your hypotheses to fit.
- You are expected to use proper grammar and correct spelling. Use the tutors in the Center for Reading and Writing (L211) if you are weak in these areas.
- Proofread your report before handing it in.
- Fill out the Checklist for Peroxidase Laboratory to be sure you have included all the requested items and attach to your report.

**TITLE** – 5 points
- Laboratory reports should have a separate title page
- Is the title informative, complete and comprehensible? (Does it include items mentioned below?) – 1 point
- Name of the enzyme – 1 point
- Scientific name of the organism from which the enzyme was extracted. Scientific names are always italicized and the second part of the name, the species epithet, is lower case. – 1 point
- Conditions tested – 2 points

**ABSTRACT** – 11 points
- Is the abstract well organized, and easily understandable by the reader? Does it cover all the necessary information? – 1 point
- Briefly what was the purpose of this experiment and how did you do it? (See below for things to include.) – 1 point
- Name of the enzyme – 1 point
- Organism from which the enzyme was extracted – 1 point
• How was enzyme activity measured? – 1 point
• Temperatures (including boiling) tested and the results you got. Describe results as the trend seen as temp increased – easy to visualize on your derivative graph – 2 points
• pHs tested and the results you got. Describe results as the trend seen as pH increased – again, easy to visualize on your derivative graph – 2 points
• Name of the competitive inhibitor tested and the results you got – 2 points

INTRODUCTION – 20 points
• Does the introduction present the necessary background information in a clear, concise, well organized manner? (See background material to be included below.) – 2 points
• What is an enzyme – 2 points
• Explanation of enzyme structure (Hint: what kinds of molecules are the majority of enzymes and how are these molecules structured) – 3 points
• How do enzymes function? – 3 points
• What reaction does peroxidase catalyze (include substrate and product(s))? – 1 point
• Is the purpose of the current work clearly stated? – 1 point
• What are your hypotheses and predictions for the effect on enzyme activity of the various factors being examined? Since a hypothesis is an educated guess, on what knowledge did you base your hypotheses?
  Temperature – 2 points
  Boiling – 2 points
  pH – 2 points
  Hydroxylamine – 2 points

MATERIALS AND METHODS – 2 points
• Source of the protocol - include author, title, publisher, date of publication, pages – 1 point
• Any changes to the lab protocol that would be necessary for another researcher to know to carry out your work themselves. This does not include changes that don’t influence the outcome of the work such as the guaiacol being in the hood instead of on the lab bench for example, since where the guaiacol bottle is in the lab will not influence the final results. However changing amounts used or test factors will influence final results – 1 points

RESULTS – 35 points
• Table/Figure 1 – Temperature – 7 points
• Table/Figure 2 – Temperature rate (derivative) graph - column 1 page 74 of lab manual - 4 points - See page 437 in Appendix B of your lab manual to learn how to do a rate (derivative) graph
• Table/Figure 3 – pH graph – 7 points
• Table/Figure 4 – pH rate (derivative) graph – column 2 page 75 of lab manual - 4 points
• Table/Figure 5 – Boiled extract – 4 points
• Table/Figure 6 – Hydroxylamine graph – 4 points
• Brief written description in paragraph form of what your tables/graphs showed. (Refer to figure numbers in your description so your reader knows which graph you are describing.) This is all in one place, not divided up under the individual figures.- 5 points

DISCUSSION - 18 points

• Was the discussion clear and organized? Did the results support the initial hypotheses or not? The discussion should include the author’s reasoning for why he/she got the results he/she did. Remember that a discussion is not just a repeat of the results. (See below for items that should have been covered in this report.) – 3 points
• Does each result fit your hypotheses for the effect of the various temperatures (4°C, 23°C, 32°C, 48°C) on the activity of the peroxidase enzyme? Give possible reasons why or why not? What is the overall trend seen? - 4 points
• Do your results fit your hypothesis for the effect boiling the extract would have on the activity of the peroxidase enzyme? Give possible reasons why or why not? – 3 points
• Does each result fit your hypotheses for the effect of the various pHs on the activity of the peroxidase enzyme? Give possible reasons why or why not? Recommend you read #3 in column 1 page 84 of your lab manual – 3 points
• Does each result fit your hypotheses for the effect of hydroxylamine treatment on peroxidase activity? Give possible reasons why or why not? – 3 points
• Include any further work that you feel would be needed to test your explanations. – 2 points

Note: Do not write in the discussion that you proved your hypotheses. Hypotheses are never proven since you can’t examine every case through time and space. Hypotheses are supported.

CITATIONS – 2 points
• Use format in Appendix D (page 445) of the laboratory manual. Note there is an error on page 447 column 1. Book titles should be italicized.

WRITING -7 points
• Your sentences make sense and you were concise. Again if you have trouble writing well go to the Center for Reading and Writing in the library for help - 3 points
• No more than five grammar/misspelling/punctuation/typographical errors - 4 points

Hints
Do not randomly capitalize words in mid-sentence. Words are capitalized only if derived from the name of an individual.
Make sure you know when to use its and when to use it’s.
Know when to use affect and when to use effect.