CHEM 130
Vitamin C lab
Fall 2016
50 points

On November 1, we will begin a two week adventure in lab focused on the determination of Vitamin C in a real-world sample. In this lab experiment, you will develop a hypothesis that can be investigated by the determination of Vitamin C, devise and conduct an experiment to test the hypothesis, and evaluate the resulting data to draw conclusions related to the hypothesis. To prepare for and complete the experiment, you will do the following:

1. Read the lab experiment carefully (on chemlab.truman.edu) and, with your normal lab partner(s), come up with an idea for an experiment and a procedural approach utilizing the titration of Vitamin C with DCIP as your method of measurement.   The online lab procedure will give you some perspective. At a minimum, this plan must include:

    a. your hypothesis,
    b. a description how you will prepare your samples
    c. an estimate of the dilution you will need to make in preparing samples
    d. an estimate of how much of your sample you will take to titrate to make sure the DCIP volume is between 20 and 40 mL.
    e. any special equipment you believe you will need to pull this off.

2. You submit your plan electronically either as a Word or pdf file by e-mail (blamp@truman.edu) or a shared Google document to Dr. Lamp by 12:00 noon Thursday, October 27.   One submission per lab partners. I intend to give you feedback no later than in class on October 31. Submission and evaluation of your plan will be worth a maximum of 10 points.

3. Use your plan to prepare your lab notebook for the experiment as you would for any experiment. In-lab check of your lab notebook will be worth a maximum of 5 points.

4. On November 1 and 8, you will implement your procedure in the lab and use the data you collect to address your hypothesis. Realize that you may need to adjust your procedure in lab to deal with unforeseen circumstances. You will record your results in your lab notebook as usual.

5. No later than in lab on November 15, you will submit a lab report using the guidelines on the page attached. Only one report will be required for each lab group. The rubric that will be used to evaluate your reports is attached. This lab report will comprise 30 points of your overall grade.

6. The remaining 5 points for the Vitamin C experiment will be awarded based on on-time submission of your report and creativity in designing a hypothesis to test.

Names_____

Experiment: _____Vitamin C Report_____

Section	Possible Points	Earned points	Comments
Abstract	4		__One-paragraph summary of the paper written in the <u>present</u> tense. __Able to stand alone, separate from the paper. __Briefly introduces the reader to the problem studied. __Scientific approach, major results and primary significance of the findings are be presented.
Introduction	4		__Broad significance of the topic to the chemistry discipline and society in general. __Introduction to the topic within chemistry. __Gives description of the specific problem. __Presents general goals and significance of the experiment or research topic.
Experimental	4		__Logical, coherent recount of the experiment(s) conducted. __Complete enough to replicate your experiment. __Not a step-by-step procedure of the activities carried out during the laboratory period
Results	4		__Results are presented and summarized in a reader-friendly form __Tables and graphs labeled appropriately __Includes description of the data. __Describes any problems encountered during data acquisition. __Gives general description of how the raw data were processed to give the final results.
Discussion	8		__Presents key data. __Convinces the reader of data's reliability. __Presents evidence for assertions. __Discusses numerical results and confidence limits. __Presents an analysis of results and discussion of error. __Compares results to "true value", if available. __Compares experimentally determined uncertainty to expected error. __Suggests specific sources of error, and potential solutions. __Written well, uses complete sentences, minimal spelling and grammar errors.
Conclusions	4		__Summarized the goal(s) of experiment. __Stated whether reached that goal. __Described briefly the implications of study.
References	2		__Compiled at the end of the paper in the References section. __Numbered in the order that they appear in the paper.
Total	30		