

**Lab Report**  
**Osmosis and Diffusion**  
BIOL 150L Principles of Biology  
Prof. Lester  
(50 points)

You will use the following format to communicate the results of the laboratory exercise on osmosis and diffusion. Reports must be typed using a 12-point font, double-spaced, one inch margins with pages numbered. The cover page should look as follows:  
(5 points)

**Experiment Title**

Center on the page and capitalize the first letter of each major word.

(3 spaces)

**Your Names** (all group members)

(3 spaces)

**Date**

The succeeding pages should have the following format (headings only, not the text afterwards):

**Background\***

(10 points)

Include a brief description of the relevant theory and the expected outcomes of the experiment. What is the hypothesis (i.e., the problem) being tested? When the experiment is completed, what do you expect to happen? What are your dependent and independent variables? You may use the lab manual or the textbook for supplemental information. **Do not copy verbatim!** Paraphrase and write in your own words. This section should be no more than one or two pages. Your goal is to provide the reader with information on osmosis and diffusion, and expected outcomes.

**Theory – 3 points**

**Hypothesis – 3 points**

**Independent variable – 2 points**

**Dependent variable – 2 points**

**Procedure / Materials and Methods**

(5 points)

Briefly describe the materials and methods / procedures used in the experiment. Write this section in the past tense. **Do not copy from the lab manual.** Write it in your own words, paraphrasing as necessary. This section should be no more than one page. Your goal is to give the reader a good idea of what you did and how you did it. Include Table 1 from the lab manual. Use the computer to make a nice table.

## **Results**

(15 points)

Summarize the results of the experiment in a single paragraph. Display raw data in tables. The graphs must be appropriately labeled and titled (Use TAILS). Your goal is to show the reader your results in a clear manner. Use the computer to reproduce tables 2, 3, and 4 from the lab manual. Use Excel to make two graphs using the data in tables 3 and 4. Make sure tables and graphs fit entirely on one page, do not split tables or graphs over two pages. **Pay attention to formatting.**

**Tables – 6 points total (2 points each)**

**Graphs – 8 points total (4 points each)**

**Isotonic point – 1 point**

## **Discussion and Conclusions\***

(15 points)

This section presents the conclusions and the evidence for each conclusion. The hypothesis should be evaluated using the data obtained from the experiment. Do the data support the hypothesis? Why or why not? Include sources of experimental error that may have contributed to the results. Be sure to discuss the tonicity of the solution (hyper, hypo, iso – tonic) and its effect of the potato at every concentration of the solution used and why it occurs. Your goal is to logically evaluate / interpret your results and draw conclusions based on those results. Your discussion must be at least one full page.

**Hypothesis supported – 3 points**

**Explanation to accept or reject hypothesis – 9 points, explanation must be clear and logical**

**Experimental error – 3 points**

General Considerations:

1. Your group will submit one group lab report. Every member must participate in its creation. Every member must review it and approve it. Each member must sign or initial the cover page by his/her name.
2. Each group member must fill out and sign the Peer Review form. Attach all forms to the group report. Failure to include the Peer Review form will result in a loss of 3 points for that group member.
3. This information represents a general format with which to write a lab report. It includes all of the major sections of information found in any lab report. It is not necessarily standard or universal.

\* The only sources you need to use are the lab manual and the textbook. If you use any outside sources, they must be appropriately cited in the body of your report and then a reference page attached. Either MLA or APA format is acceptable. More information can be found on my web site under Guidelines for Using References.

## Peer Review

Please write the names of all of your team members including yourself and rate the degree to which each team member fulfilled his/her responsibilities in completing this assignment. The possible ratings are as follows:

Rating	Criteria	Score
Excellent	Consistently went above and beyond—tutored teammates, did more work than the other team members	4
Very Good	Consistently did the necessary work, was prepared and cooperative	3
Satisfactory	Usually did the necessary work, acceptably prepared and cooperative	2
Unsatisfactory	Did not contribute much effort or was not very prepared or was uncooperative	1
Unacceptable	No participation	0

*These ratings should reflect each individual's level of participation, effort, and sense of responsibility not his or her academic ability.*

Name of Team Member	Rating/Score

Your signature: \_\_\_\_\_

Your honest input may or may not have an impact on a particular team member's grade. However, should the majority of the team members feel that the other member has performed either unsatisfactorily or unacceptably, that team member will receive a minimum 10% reduction in grade for this assignment, and possibly a zero for a complete lack of participation.

***Your Peer Reviews must accompany your report.***