

# Sample Questions, Study Guide for AP BIOLOGY

## Semester 1, LAB FINAL EXAM

The laboratory final is only going to cover the labs that are in the green AP Biology lab manual.

So far this year we have completed the following labs:

**1A, 1B, 2 all, 3 all, 4 all, 6 all, 7 all, 8 all**

If you have been keeping all of the lab manual pages (and other handouts related to each lab), you should have all of the materials you will need to study for the laboratory final.

You will not be asked to conduct a lab or to demonstrate laboratory skills.

The test's format is short answer and calculations related to each lab. Questions may require you to graph, calculate, predict, analyze data, and/or define processes or vocabulary terms related to each lab.

Many of the short answer questions are very similar to the questions asked after each lab.

Any calculations you will be asked to do will be similar to the lab manual questions and at an equivalent difficulty level. Any graphs, slopes, graph interpretations, graph conclusions, predictions etc. will be similar to the graphs/data seen in the lab manual.

You will be allowed to use a calculator.

It might be very helpful to re-read the introduction to each of the above labs so as to review the concepts and vocabulary related to the experiments conducted during each lab. Results of each lab as well as background of the concepts covered in each lab are important to review.

Pages 147-161 may help you as well. Also, since you spent so much time on the lab conclusions, re-read them. You concluded each lab carefully in each conclusion, there is a lot of info. covered in your conclusions.

### **EXAMPLES of how to study for the lab final:**

#### **In Lab 1...**

From reading the overview, objectives, and introduction information for both sections 1A and 1B there are a few important vocab. words and concepts that you will remember...

Diffusion, osmosis, active/passive transport, hypertonic, hypotonic, isotonic, both solute size and concentration gradient's effect on movement across a membrane.

After reviewing Lab 1A, you will remember that the starch was too big, but the iodine, water and glucose were small enough to move across the membrane. The experimental portion of the lab was to test for the presence of various substances (in the bag and in the beaker) after the allotted time. In this experiment, both diffusion and osmosis were observed but not measured... we have no idea of the bag's mass or the molarities etc.. We know there is still a concentration gradient for the starch since, due to the small pores in the membrane, starch is prevented from moving out of the bag.

Notice questions 1-5 are all asking you to explain the processes and the results. There were no graphs drawn and quantifiable data collected but the concepts of osmosis and diffusion were demonstrated.

For Lab 1B, data was collected and a graph was generated. In this lab osmosis was measured. Look at the graph you drew and try to understand why the data is linear? (due to experimental errors, you may have to look at the ideal data line on the graph.) Why did we use % change and not just direct mass? Apply the lab by trying to predict what might happen if we did the same experiment, with the same tubes and same molarities but instead of soaking them in water, we soaked them in a 0.4 M sucrose solution. Which bags would lose weight, which would stay the same and which would gain weight? Which are hypotonic, hypertonic, and isotonic? What would the curve look like if you were graphing % change in mass as before? Where would the 0.4 M bag appear on this graph? Try it...

Look over questions 1-5 on pages 7-8. Can you still answer them? Do they still make sense? If so, good! Move on to lab 2 now.

(Also, be sure you can determine the difference between the independent variable and the dependent variable in experiments... Which is the X axis and which is the Y axis?)