

THE LAB PRACTICAL

In this practical exam, your goal is to use well-planned experiments to determine which parts of the following statement are true (if any):

“The solution in tube _____ contains an enzyme that converts polysaccharides into monosaccharides.”

In effect, I am presenting you with a hypothesis and you will try to get evidence to support or contradict that hypothesis. In particular, I will be looking for the following:

- Understanding of how to perform controlled experiments
- Understanding of the structures and functions of the biomolecules involved
- Understanding of the lab tests that can be used to provide information about those biomolecules
- Skill, comfort and safety in your use of lab techniques
- A clear, concise prelab that is prepared in advance of the lab (you will not work in the lab without this)
- Well organized results/observations
- A discussion in which your results are thoughtfully interpreted

The Details...

On Lab day I will give you a test tube containing a solution. You will have one period in the lab in which to gather as much evidence as needed to support or contradict each part of the above statement.

The following will be available to you:

Biomolecule indicators (chemical test solutions), Bunsen burners, hot-plates, ice, water, acids & bases, solutions known to contain glucose, starch, oil, protein, pepsin, amylase, catalase, beakers, test tubes, thermometers, Erlenmeyer flasks, squeeze pipets. Let me know ahead of time if you will need something else.

You may use your book and your notes to help you design your experiments, but you may not bring them into the lab. In addition, your experimental design must be your own. You may not discuss your approach to this problem with others.

Some Suggestions

- You will almost certainly need to perform more than one experiment in order to address the entirety of the hypothesis presented. Consider making some if, then statements that will help direct your experimentation. For example...
 “If I get a positive result in the fat test, then I will proceed to”
 “If I get a negative result in the fat test, then I will ...”
- Don't worry about what others are doing. There will be several different solutions and they will give different results.
- Do not assume anything about what your solution contains. Ask yourself “are there other ways I could get this result?”
- If you decide that you should have done something differently when you are writing your discussion, go ahead and explain what you would do, why and what you would expect to find for partial credit.