Objectives to Review for Lab Practical Exam.

Use your laboratories and notes in your lab notebook to guide your completion of these techniques. Each of these techniques was covered in lab. Be prepared to actually perform these tasks during the lab practical. You will need a calculator for this exam.

These tasks have not been assigned to a specific lab since many were covered in several labs throughout the year.

- Convert between metric units (base unit → milli → micro → nano → pico)
- Calculate mass of solute to make a molar solution (M) at a given volume (formula 1)
- Use \( C_1V_1 = C_2V_2 \) to calculate dilutions and % solutions (formula 2)
- When given instructions to make a solution, identify whether you will need formula 1 or formula 2
- Calculate microscopic power (formula 3)
- Calculate percent change (formula 4)
- Explain how to calculate the rate of enzyme activity or cell proliferation.
- Correctly prepare a molar solution using the correct equipment and techniques.
- When given a dilution, correctly dilute a given solution.
- Correctly pipette specific volumes.
- Find a cell or organism under the microscope, correctly focus and view it at 10X and 40X.
- Prepare a wet mount of cells and stain with methylene blue
- Count the number of cells on a hemocytometer and calculate the cells/mL in the solution (formula 5)
- Calculate averages and standard errors in a given set of data using Microsoft Excel (formula 6 and 7)
- Given a set of data, use Microsoft Excel to make a correctly labeled graph with trendlines and error bars.
- Formulate a hypothesis about a question, given prior information.
- Design an experiment to test a given hypothesis with proper controls, experimental groups, and conditions.
- Using aseptic technique, transfer and spread bacteria to agar plates
- Given a gene or protein sequence, identify a gene using BLAST