

## BIOLOGY 11 – PRE-LAB EXERCISE

# 2+4

Name:

Lab Day & Time:

### Microscopy / Cell Structure & Function

#### Lab 2: Microscopy

1. What two types of microscope will we be using in this laboratory exercise?

What are the relative advantages for each of these types of microscope?

2. What other type of microscope is described in the Lab Manual?

What advantage does this type of microscope have over our microscopes?

3. Why is a compound microscope called “compound”?

4. Define **magnification**.

Define **resolution**.

5. Look at **Figure 2.5** in your *Lab Manual*. Identify the indicated parts and label the blanks on the picture of the microscope. Identify the parts of the microscope described by the following function:

A moveable platform that allows accurate positioning of the slide.

The part of the microscope that you look into.

The objective lenses are attached to this rotating component.

The control knob that is used to focus the image, but only used with the lowest-power objective.

The control lever used to adjust the light shining through the subject.

The objective to be in place both when beginning to use the microscope and when putting it away.

## Lab 4: Cell Structure & Function

6. What are the two main macromolecule components of a cell membrane?

What is the plasma membrane?

In addition to the plasma membrane, where are other cell membranes?

7. Study **Figure 4.1** and **Table 4.1** in your *Lab Manual*. Identify the cell component or organelle described by the following structure and/or function:

Membranous canals without ribosomes often used for lipid synthesis.

Place where the genetic information is stored.

Organelles with a double membrane that produce most of the cell's energy (ATP).

Stack of saccules functioning to process and distribute molecules.

Small sacs used to transport substances among organelles and the cell membrane.

Microtubules and filaments responsible for the shape and movement of the cell and its parts.

Ribosome-studded saccules and canals used for protein synthesis.

Membranous vessel containing digestive enzymes.

8. Define:  
selectively permeable.

diffusion..

osmosis.

dialysis.

facilitated transport.

active transport.

tonicity.

9. Read "**Experimental Procedure: Tonicity in Potato Strips**" in Laboratory 4 of your *Lab Manual*.

What are two standard variables in this exercise?

What is the independent variable in this exercise?

What is the dependent variable in this exercise?

If you used animal tissue, like blood, instead of potato in this experiment, what would you predict would happen to its cells when immersed in pure water?