

Microscopy and Cell Diversity Lab Make-Up

Biology 1102

Name: _____

Section: _____

This exercise replaces your quiz and homework grade for the Introduction to Microscopy and Introduction to Cell Diversity lab. First read through these two sections of your lab manual to familiarize yourself with the concepts and terminology. Most of the following questions require you to look up information either in your lab manual, textbook, or on a website. Your answers must be complete, well thought out, and in your own words. Type your answers on a separate sheet of paper, and leave space for your drawings. You may make your drawings on separate sheets and attach them, but you must clearly identify each drawing with the question number *and* a name label. If you have any questions, feel free to contact your TA.

1. (1/2 pt) How would you determine the magnification of an object you are viewing in the compound microscope?
2. (1/2 pt) Describe what you would do when you have finished using your microscope in lab (you will be using them in future labs).
3. (1 pt) Name two main differences between prokaryotic and eukaryotic cells. Name one example from each group.

For questions 4 and 5, refer to this website:

http://www.biology.arizona.edu/cell_bio/tutorials/pev/page2.html

4. (1/2 pt) Are bacterial cells prokaryotes or eukaryotes?
5. (1/2 pt) List three interesting characteristics of bacteria.
6. (1 pt) What is gram staining useful for? Which color is positive and which is negative?

For questions 7 and 8, refer to this website: <http://waynesword.palomar.edu/lmexer1.htm>

7. (1/2 pt) Find and **draw** the image of *Elodea*, a plant cell. Label the **cell wall, cytoplasm, and chloroplasts**.
8. (1 pt) Find and **draw** the image of human cheek cells, an example of animal cells. Label the **cell membrane, nucleus, and cytoplasm**.
9. (1/2 pt) Find out why methylene blue stain is used to look at some cells under a microscope. (The answer is simple, don't get yourself bogged down in an entire chemistry lesson. Cite your source if you use the internet.)
10. (1 pt) Name at least three structural differences between animal cells and plant cells.

11. (1 pt) Use your lab manual, a textbook, or an internet source (cite your references!) to briefly describe each type of cell motility seen in single-celled organisms:
 - a) pseudopodia
 - b) cilia
 - c) flagella

12. (1/2 pt) Go to this website: www.infovisual.info/02/001_en.html
 Use the image on this website as a model to **draw** a *Euglena*. What is *Euglena*'s form of motility?

13. Go to this website: www.micro.magnet.fsu.edu/moviegallery/pondscum.html
 - a) (1/2 pt) Click on "Amoeba," and watch video number 3. Draw an *Amoeba*. What is *Amoeba*'s form of motility?

 - b) (1/2 pt) Click on "Stentor," and watch video number 2. Draw an *Stentor*. What is *Stentor*'s form of motility?

Note: These videos are *very* cool -- you might want to look at more than just these two.

14. (1 pt) Listed below are some cell structures you've examined. Match the function of each from the choices below:

_____	Cell membrane	a. allows for storage inside the cell
_____	Nucleus	b. hair-like structure that provides motility
_____	Flagellum	c. regulates passage of substances in and out of the cell
_____	Vacuole	d. contains genetic information in the form of DNA

To answer the questions below, utilize your manual as well as the following website:
www.microscopy-uk.org.uk/mag/artmar03/rhtermite.html.

15. (1/2 pt) **Draw** the magnified image of *Trichonympha*.
16. (1/2 pt) Is *Trichonympha* flagellate or ciliate?
17. (1/2 pt) Is *Trichonympha* a eukaryote or prokaryote?
18. (1 pt) What is mutualism?
19. (1 pt) How does a termite benefit from having protozoa like *Trichonympha* living in its hindgut, AND what do the protozoa get out of living there?
20. (1 pt) How does *Trichonympha* digest cellulose?