

Biology 106L Practical 1 Study Guide:

Reminder, this is for my personal class only, other tests will have different questions and different things to study!

A bit about the exam: This will be a **closed note exam**. We will all meet on zoom at **2pm on Monday, March 8th**. I will give you directions to take the exam on canvas and will be available for questions through zoom until all tests are turned in.

Just a reminder, that this is a helpful guide to orient your studying. This by no means is specifically what is on the practical, but I made it to help you understand what you should have absorbed and understood “IN LAB”. If you do not remember these things, you should review them.

Please review all organisms and characteristics of the organisms that we looked at IN LAB (your iBook and slideshows). **It helps to organize your studying by Lineage, Phylum and then Class.**

Specific things that my help to review for each chapter:

Chapter 1: *Saccharomyces*

Review the following

- Basic parts of a microscope
- The three major groups of organisms
- Rotifer information – how do they move?
- The difference between sporangia and hyphae and what they look like

Chapter 2: *Escherichia*

Review the following

- Difference between prokaryotes and eukaryotes
- Difference between heterotrophic and autotrophic
- Types of sizes and shapes of bacteria that we have covered (three different types)
- The difference between gram positive and gram negative bacteria (and how to visually see the difference)
- How nitrogen fixing bacteria works
- Two types of cyanobacteria: *Oscillatoria* and *Anabaena*
- Domain Archaea – what are two different types that we discussed in the slides?

Chapter 3: *Paramecium*

Review the following

- Correct biological nomenclature
- Information we have discussed on phylogeny and be able to understand examples
 - What is monophyletic
 - What is polyphyletic
 - What is paraphyletic
- Synapomorphy vs. symplesiomorphy
- Know the seven eukaryotic lineages (this is for all chapters)
 - Know which organisms we have looked at fall under which lineage!

- Amoeba feeding and movement
- *Trypanosoma* and *Trichomonas vaginalis* type of movement (how does it move?) and what disease it causes
- Be able to visually identify radiolarians based on photos from slides vs foram (foraminifera)
- Be able to identify *Paramecium*, *Euplotes*, and *Vorticella* and now how they move
- Know what lineage *Achlya* falls under

Chapter 4: *Volvox*

Review the following:

- Facts on the slides about 'Algae'
- Know the lineage and phylum for the following organisms, be able to identify them from image (from slides)
 - Dinoflagellates
 - Diatoms
 - *Euglena*
 - Chlorophyta
 - *Volvox* (this is the genus)
 - Rhodophyta
 - Chlorophyta
 - Phaeophyta
 - *Fucus*
 - *Porphyra*
 - *Corallina*
- *Dinoflagellata* is known for causing bioluminescence
- Review the type of morphology that Rhodophyta has
- Phaeophyta is famously known for the kelp forests along the coast of California
- Be able to identify the difference between gametic, zygotic and sporic lifecycles

Chapter 5: *Physcomitrella*

Review the following:

- Important characteristics of moss & ferns
- What does oogamous mean?
- What is poikilohydric and homeohydric
- Look at the labeled photo of the mosses in your lecture slides – be able to identify the sporophyte vs. the gametophyte
- Know the moss reproductive structures
- Be able to visually identify the types of liverworts as well as the liverwort reproductive structures and sexual organs
- Understand the general plant tissue system – what is xylem used for and what is phloem used for
 - Review the fern leaf epidermal peel photo and be able to identify stomata
- Know the fern life cycle

Chapter 6: *Arabidopsis*

Review the following:

- Review all of the phyla in this chapter – be able to write them
- Review pine reproduction
 - can you tell a male and female pinecone apart?
- Parts of a flower

Make sure to review your lab reports, common equations, and how to correctly read significant difference when looking at error bars. These ideas could also be on the exam.

Also review what happened in the antibiotic resistance lab, there may be a question on this and what causes antibacterial resistance.

Review what the intermediate disturbance hypothesis is.

Good luck studying!

Amanda