**Biology A Final Exam Study Guide**

**DUE DATE IS: \_\_\_\_/\_\_\_\_\_/\_\_\_\_**

**Scientific Method**

1. What are the steps in the scientific method?

2. Define hypothesis and give an example of one.

3. Why is it important to have a control group in an experiment?

4. Students who spend more time studying get better grades on their finals. What is the independent variable in this hypothesis? Dependent variable? What’s the difference between the two?

5. Differentiate between experiment, hypothesis, theory, and law.

6. What is qualitative data? Quantitative data? Give example of each.

7. What is the difference between eukaryote and prokaryote?

8. Describe these organelles: nucleus, mitochondria, chloroplast, cytoplasm, golgi apparatus, lysosome, chromosome, ribosome.

9. Give 3 difference between plant and animal cells.

10. Describe the structure of the plasma membrane.

11. What is a protest?

12. Protozoans can be divided into 3 categories. Describe: flagellates, ciliates, pseudopods.

13. What is cell theory?

14. Describe abiogenesis and biogenesis.

15. What role did Redi, Needham, Spallazani, and Pasteur play in probing biogenesis.

16. What should have happened in the frog respiration lab as the water temps increased?

17. Be able to identify the parts of a microscope.

18. How do you determine the total magnification of an object viewed under a microscope?

19. What four things should you do when done using a microscope?

20. When should you use the coarse adjustment knob?

**Ecology**

1. What role do decomposers play in a food chain?

2. Explain how energy is transferred within an ecosystem.

3. What are abiotic and biotic factors? Give example of each.

4. Give three types of symbiosis- example of each.

5. What is succession? Describe example of succession.

6. What is natality, mortality, emigration and immigration? How do they work together to control population size?

7. Define ecosystem, community, population.

8. Define a limiting factor.

9. What indicates bacteria growing in your pond infusion jar.

10. What is carrying capacity? What factors can affect it?

11. What makes up an ecosystem?

**Cell Unit**

12. Explain what happens during the light cycle and Calvin cycle of photosynthesis.

13. If a cell doesn’t have enough mitochondria, what will happen to the cell and WHY?

14. Describe the differences between aerobic and anaerobic respiration.

15. Name 3 types of complex carbohydrates and an example of food for each.

16. Describe 3 types of solutions. (Hyper-, Hypo-, and Isotonic)