Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 1 Study Guide:

Vocabulary – Please be familiar with these terms, especially the functions of the organelles:

bacteria, cell, cell membrane, cell theory, cell wall, chloroplast, compound light microscope, cytoplasm, diffusion, electron micrograph, endoplasmic reticulum, eukaryotic cells, Golgi body, lysosome, metabolism, mitochondria, nucleus, organelle, organism, osmosis, prokaryotic cells, ribosome, scanning electron, microscope, selectively permeable membrane, vacuole, virus

Key Concepts:

* The 5 Characteristics of Living Things (1.1)
* Important components of a microscope and their functions (1.1)
* The Cell Theory (1.2)
* The components of a cell, (organelles) and their functions. (1.2)
* Similarities and differences between plant and animal cells (1.2)
* Reactants and products of both cellular respiration and photosynthesis (1.2)
* Similarities and differences between eukaryotic and prokaryotic cells (1.2)
* Diffusion is the movement of particles from an area of higher concentration to an area of lower concentration. (1.3)
* Osmosis is the movement of water from an area of higher concentration to an area of lower concentration. (1.3)

Practice questions:

1. List the five characteristics of living things.
2. What is the proper way to carry a microscope?
3. How does a cell make its energy? What organelle performs this function?
4. Summarize the key points of the cell theory.
5. Describe one difference between bacteria and viruses.
6. What are two difference and two similarities between a prokaryotic and eukaryotic cell?
7. Why is the cell considered to be the basic unit of life?
8. Why are vacuoles larger in plant cells than animal cells?
9. Why do you think the openings in cell membranes are different sizes?
10. Animal cells do not have chloroplasts. Explain why.
11. How are the equations for cellular respiration and photosynthesis related? Be specific.
12. Describe the process of diffusion using an example of your choice.
13. Describe osmosis. Why is it important to a cell?
14. Which way will water flow through the membrane of a plant cell for each of the following situations
15. The plant cell is placed in a solution where the concentration of water equals the concentration of water inside the cell.
16. The plant cell is placed in a solution where the concentration of water is greater than the concentration of water inside the cell.
17. The plant cell is placed in a solution where the concentration of water is less than the concentration of water inside the cell.
18. Explain what is wrong with the following statement and write a new, correct statement. “When equilibrium is reached, particles stop moving back and forth through the cell membrane”.
19. Why does your skin wrinkle up if you spend too much time in a warm bath?
20. Explain what will happen when a wilted piece of celery is placed in water.
21. During class, someone peels an orange. Why will everyone in the class not smell the orange at the same time?