**Unit 2 Part 1 Study Guide**

**Biology**

1. List 3 things all cells have. 2. List the 3 components of The Cell Theory

 A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Label the following cell.



4. Decide whether the following are a prokaryote or a eukaryote.

 A. Plant: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ B. Bacterium: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 C. Tree: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ D. E. coli: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 E. Blood Cell: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ F. Pig Skin Cell: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 G. Cheek Cell: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ H. Salmonella: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. What is the main difference between a prokaryote and eukaryote?

6. Only eukaryotic cells have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bound nucleus and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bound organelles.

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a structure that regulates what enters and leave the cell, is very

 fluid, encloses the contents of a cell, and is selectively permeable.

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a structure that performs a particular function in a cell.

9. Can a prokaryote have a cell wall? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are tiny hair-like structures that can line the outside of a cell.

11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is filled with enzymes that break down old organelles or parts of a cell.

12. What types of cells will have flagella? (plant? animal? bacteria?)

13. The Nuclear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a double membrane that surrounds the nucleus. It has

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through it that allow for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and RNA to leave.

14. If the cell was a city, what would the power house be? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 a. What type of cell in the human body would have a lot of these? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. What is the organelle found in plants only which is the site of photosynthesis? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16. In plants, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is responsible for holding water. When the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is full, the

 plant is happy, and when the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is empty, the plant looks sad (droops).

17. The cell’s chromosomes are found in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

18. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the major structural sugar found in the cell wall of plants.

19. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 tissue 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 organ system

20. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ transport requires no energy from the cell and always flows from high to low.

21. Putting food color in a beaker of water demonstrates what process of passive transport? \_\_\_\_\_\_\_\_\_\_\_

22. If you have swollen gums, why would it help to rinse with salt water?

23. Once a solution has reached equilibrium, do the molecules quit moving or continue to move?

24. Does diffusion only happen across a membrane?

25. Match the following. Some may have more than one match.

 A. Diffusion D. Endocytosis

 B. Osmosis E. Exocytosis

 C. Facilitated Diffusion F. Sodium-Potassium Pump

1. Passive Transport 6. Water through a semi-permeable membrane

2. Active Transport 7. Requires energy from ATP

3. Low 🡪 High 8. Potassium ions

4. CO2 and O2 9. Uses vesicles (sacs)

5. Uses no ATP