Name:_____ Date:_____

Unit 1 Study Guide: Cells & Cellular Processes

**This study guide is a GUIDE and NOT the complete test. Please be sure to use notes, online resources, and worksheets as part of review.*

Concepts/ Questions:

1. All living things can be sorted into one of two groups **based on the fundamental cells that make them up**:

   these two groups are _____ and _____

2. Fill in the table below with at least 4 characteristics for prokaryotes and eukaryotes and then at least 4 shared characteristics

Prokaryotes	Shared Characteristics	Eukaryotes

3. How does the **endosymbiotic theory** explain the creation of eukaryotes? (hint: since this is an evolution question, you must reference WHY this change was beneficial)?

4. What is the difference between a unicellular and multicellular organism? What is the advantage of being a multicellular organism?

   - List three examples of groups of unicellular organisms and three examples of groups of multicellular organisms.
   - Label each of the organisms as prokaryotes or eukaryotes

Unicellular	Multicellular

5. List the three components of **Cell Theory AND the Scientist who discovered each part / Date**

Cell Theory Component	Scientist / Date (from handout)

Cell Part	Function in Cell	Factory Part	Plant/Animal/Both?

Nucleus			
Cytoplasm			
Endoplasmic Reticulum (ER)			
Mitochondria			
Cell Membrane			
Ribosomes			
Golgi Apparatus			
Vacuoles			
Central Vacuole (why is this different than normal vacuole)			
Chloroplasts			
Lysosomes			
Cell Wall			

6. What is the main difference between **passive** and **active transport?**

7. Draw a picture of **simple** and **facilitated** diffusion.

8. What is the driving force that causes all diffusion? Is diffusion passive or active transport?

9. Why is active transport different from diffusion? (Hint: this is why it requires energy)

10. Explain what **endocytosis** and **exocytosis** are and why they are necessary forms of transport.

11. Label each solution in the beaker as "hypertonic, hypotonic, or isotonic compared to the cell inside the beaker. Draw the direction that water will move and what will happen to each cell.