### Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_ Mods: \_\_\_\_\_

### 2.2 Prokaryotic and Eukaryotic Cells /Endosymbiosis Practice

1. Plant cells, algae, and fungi have cell walls usually composed of cellulose or chitin. ( True/False )
2. Based on current scientific evidence, Prokaryotic cells evolved before eukaryotic cells. ( True/False )
3. Prokaryotic cells do not have their DNA housed in a nucleus. ( True/False )
4. Prokaryotic cells do not have DNA. ( True/False )
5. Bacterial cells lack a nucleus. ( True/False )
6. All prokaryotes have “tail-like” flagella. ( True/False )
7. Prokaryotic cells can make up multicellular organisms. ( True/False )
8. Cells without a nucleus are eukaryotic cells. ( True/False )
9. Eukaryotic organisms can be unicellular or multicellular. ( True/False )
10. Prokaryotic cells are more complex that eukaryotic cells. ( True/False )
11. Prokaryotic cells can have “membrane- bound organelles". ( True/False )
12. Plant cells have cell walls, prokaryotic cells do not. ( True/False )
13. Animal cells can have chloroplasts, plant cells do not. ( True/False )
14. Some prokaryotic organisms can do photosynthesis, these organisms have chloroplasts. ( True/False )
15. Some prokaryotic organisms can do photosynthesis, these organisms have chloroplasts. ( True/False )
16. Based on current, scientific evidence, prokaryotes likely evolved from eukaryotes by a process known as “endosymbiosis” ( True/False )
17. Some eukaryotic cells have “tail-like” flagella. ( True/False )
18. Chloroplasts are found only in photosynthetic eukaryotic cells. ( True/False )
19. Chloroplasts are found only in photosynthetic eukaryotic cells. ( True/False )
20. All plant cells have chloroplasts. ( True/False )
21. All plant cells have cell walls. ( True/False )
22. Only animal cells have a large sap vacuole. ( True/False )
23. Prokaryotic cells are structurally different from eukaryotic cells. Which of the following structures are associated with prokaryotic cells but not eukaryotic cells?
    1. ribosomes
    2. pili
    3. capsule
    4. B and C
24. Prokaryotic cells are significantly less advanced than their eukaryotic counterparts. Which organelle do they have in common?
    1. Lysosomes
    2. Ribosomes
    3. Mitochondria
    4. All of the above
25. Bacterial DNA is found in
    1. Nucleoid (region)
    2. Nucleus
    3. Mitochondria
    4. They don’t have DNA!
26. Ribosomes manufacture \_\_\_\_\_ molecules.
    1. Lipid
    2. Starch
    3. Protein
    4. None of the above
27. Which type of cell is usually the largest?
    1. Prokaryote B. Eukaryote

28. Make a Venn diagram or another graphic organizer for prokaryotic cells and eukaryotic cells. Compare and contrast them in terms of cell parts they can have. Show which can have the following organelles: Ribosomes, Plasma Membrane, Mitochondria, Nucleus, Lysosome, Cytoplasm, and Endoplasmic Reticulum

1. Give an example of both, a prokaryotic organism and a eukaryotic organism
   1. Give an example of one eukaryotic cell
2. What does it mean for an organelle to be “membrane-bound”?
   1. Name one:
   2. Can prokaryotic cells have any organelle that is bound by its own membrane?
3. Compare plant cells and animal cells below.
   1. Provide at least two similarities
   2. Provide at least three differences between them
4. Name the **three domains of life**. Circle the only one that consists of eukaryotic organisms. (the other two consist of all the prokaryotic organisms that have been identified!)
5. Based on current scientific evidence, **which two organelles** have features that indicate they were once free-living prokaryotes before they were “engulfed” and began residence inside of another prokaryote to form the first eukaryotes.
6. What is the evolutionary advantage to having compartments (“membrane-bound organelles”) vs. having no membrane-bound organelles? **Circle all that apply.**
   1. Life can now be smaller
   2. Life now has a greater capacity to do “functions”
   3. Life can be bigger and more complex because cells can do more reactions to maintain life
   4. Some chemical reactions must occur across a membrane; membrane-bound organelles provide more area for these reactions to occur