

# General Biology –Chapter 4 Review

## Mary Stangler Center for Academic Success

*This review is meant to highlight basic concepts from Chapter 4. It does not cover all concepts presented by your instructor. Refer back to your notes, unit objectives, labs, handouts, etc. to further prepare for your exam.*

1. What are the 3 components of the cell theory?
2. Several scientists contributed to the development of the cell theory – describe how Robert Hooke contributed to this theory. Who proposed the cell theory?
3. What happens to the rate of diffusion across a cell's surface when the cell gets larger? Why?
4. Explain the Endosymbiotic Theory.

Fill in the blank/ True or False : Prokaryotes

5. Bacteria have membrane bound organelles. True or False?
6. The outer boundary present in all prokaryotes is the cell wall. True or False?
7. All cells have a nucleus for housing DNA. True or False?
8. The two domains of prokaryotes are \_\_\_\_\_ and \_\_\_\_\_.
9. Most bacterial cell walls contain a material called \_\_\_\_\_ that adds strength.
10. The \_\_\_\_\_ is a layer of polysaccharides that lie outside some cell walls in bacteria.
11. Prokaryotes contain ribosomes for synthesizing proteins. True or False?
12. Prokaryotes have a cell wall in place of a cell membrane. True or False?
13. If a bacterium has a thick peptidoglycan wall it will stain \_\_\_\_\_ in color when using a Gram stain technique. This is considered to be Gram \_\_\_\_\_.

Fill in the blank/True or False: Eukaryotes

14. Eukaryotic cells have membrane bound organelles. True or False?
15. All Eukaryotes have a cell wall. True or False?
16. All Eukaryotes are multicellular. True or False?
17. Plants cells are generally easy to differentiate from an animal cell by their large central \_\_\_\_\_.
18. Cells with a high energy demand will have many \_\_\_\_\_ to power the cell.
19. The organelle that aids in digestion of intracellular materials is the \_\_\_\_\_.
20. The organelle that contains hydrogen peroxide is the \_\_\_\_\_.
21. The organelle that makes more ribosomes is called the \_\_\_\_\_; it is found in the nucleus.
22. The cytoskeleton is for materials transport and giving support to the cell. True or False?
23. The \_\_\_\_\_ modifies and packages materials, produced by other structures, into vesicles for transport.
24. Protein synthesis occurs when a \_\_\_\_\_ reads the genetic code carried by RNA.
25. Plants have \_\_\_\_\_ which is the site of photosynthesis.
26. The smooth endoplasmic reticulum is the site of \_\_\_\_\_ synthesis.
27. The attachment of \_\_\_\_\_ gives the rough endoplasmic reticulum its appearance.
28. Mitochondria have an inner membrane called \_\_\_\_\_.
29. Chloroplasts have stacks of \_\_\_\_\_ called \_\_\_\_\_.
30. If a cell is autotrophic and eukaryotic, it must contain the following organelle:\_\_\_\_\_.