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# BIOLOGY

## Study Guide: Chapter 7.1, 7.2, 7.4

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### Biology: Cells - Structure

#### Define the following terms.

Cell	Germ Cell	Organelle
Cell Membrane	Homeostasis	Prokaryote
Cell Wall	Nuclear membrane	Selectively Permeable
Cytoplasm	Nucleus	Somatic Cell
Eukaryote	Nucleolus	Tissue
Fluid Mosaic model	Organ	

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#### For this OCA, You have your choice of 4 projects: (Choose One)

1. Make a 3 fold pamphlet using a 8.5 by 11 inch piece of paper covering all of the material in chapter 7 on cells. Be sure you cover: cell theory, the different types of cells, the parts of a plant cell and their functions, parts of an animal cell and their functions, and how to study cells (microscopes).
2. Make a study guide using both sides of an 8.5 by 11 inch piece of paper, covering all of the material in chapter 7 on cells.
3. Draw and color a plant, animal, and bacteria cell. Label all of the parts of the cell, and include a detailed description of each part and organelle and its function.
4. Complete the questions below.

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#### Questions for choice 4:

##### Section 7.1 -

1. Trace the development of Cell theory including the contributions of van Leeuwenhoek, Robert Hooke,, Schleiden, Schwann, and Virchow.
  2. Explain the three parts of cell theory.
  3. For each of the following types of microscopes, tell how it works, and its advantages:  
.....Compound Light Microscope - SEM -- TEM -- STM
  4. If you have a microscope with a 10X eyepiece, and you use a 40X objective lens, how much will the object be magnified?
  5. List the differences between Prokaryotic and Eukaryotic Cells.
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6. Explain homeostasis. Why is it important for a cell to maintain homeostasis? What part of the cell helps the cell controls what goes in an out of the cell?
  7. Is the cell membrane (plasma membrane) impermeable, semi-permeable or permeable? What does that mean for the cell?
  8. Draw a simple diagram of the plasma membrane using the fluid mosaic model. Label the various parts.
  9. What does it mean that the membrane is fluid?
  10. What is the role of cholesterol in the plasma membrane?
  11. How do transport proteins work?
  12. What is the purpose of the Cell wall?
  13. Describe the structure of the nucleus of a cell. Include a description of the nuclear membrane, the ..... nucleolus, and chromatin.
  14. What is the Cytoplasm? Describe the function of each of the organelles found in the Cytoplasm:

Ribosomes	Endoplasmic Reticulum (smooth and rough)	Golgi Apparatus
Vacuoles	Lysosomes	Chloroplasts
Mitochondria	Cytoskeleton	Micortubules
Cilia	Flagella	

15. Draw a bacterial cell, a plant cell, and an animal cell showing how they are different from each other.
16. What is the difference between a germ cell and a somatic cell?
17. Describe each of the following levels of organization in Biology, and give an example of each.

Cell - Tissue- Organ - Organ System -

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