

Name: _____ Period: _____ Date: _____

Cells Unit Study Guide Answers

1. What are the 4 characteristics of life. Give an example of each.

Have cells- everything living organisms are made of these microscopic units

Need energy- living organisms need to be supplied with energy in order for their cell parts to function. The energy could come from the sun or from food.

Respond to environment- living things change and adapt to the changing conditions inside and outside of their body.

Reproduce and develop- living things grow and change over time.

2. Explain what homeostasis means and give at least one example.

Homeostasis means the regulation and maintenance of constant internal conditions. For example, glucose is regularly absorbed by the cells when there are a high level of glucose in the body and glucose is released by liver cells when glucose level is low. These events happen in order to keep glucose level at a normal range in the body.

3. Describe the 3 principles of the Cell Theory.

* All organisms are made of cells.

* All existing cells are produced by other living cells.

* The cell is the most basic unit of life.

5. What is an organelle? And why would it be better to have organelles?

An organelle is specialized subunit within a cell that performs a certain function. It is better to have specialized organelles because performing one job is more efficiently and faster than doing many jobs at once. Because of the specialized organelles, the cell itself is able to function faster.

6. What is Biodiversity? High Biodiversity is found where?

Biodiversity is the variation of life. High biodiversity is found near the equator or in warmer temperatures.

7. Why do plants have a cell wall?

Cell walls are stronger and more rigid(not flexible) than cell membranes. Since plants need to be upright, having cell walls help them grow and stay upright as the cell walls stack on top of each other.

8. Why are chloroplasts only in plant cells? Cells do not consume like animals do and so they have chloroplasts to help them take the sun's energy and convert it into useable energy through the process of photosynthesis.

9. What is the difference between Smooth and Rough ER?

Smooth ER produce lipids (fat) and steroids while the rough ER is the location where proteins are made because of the ribosomes attached.

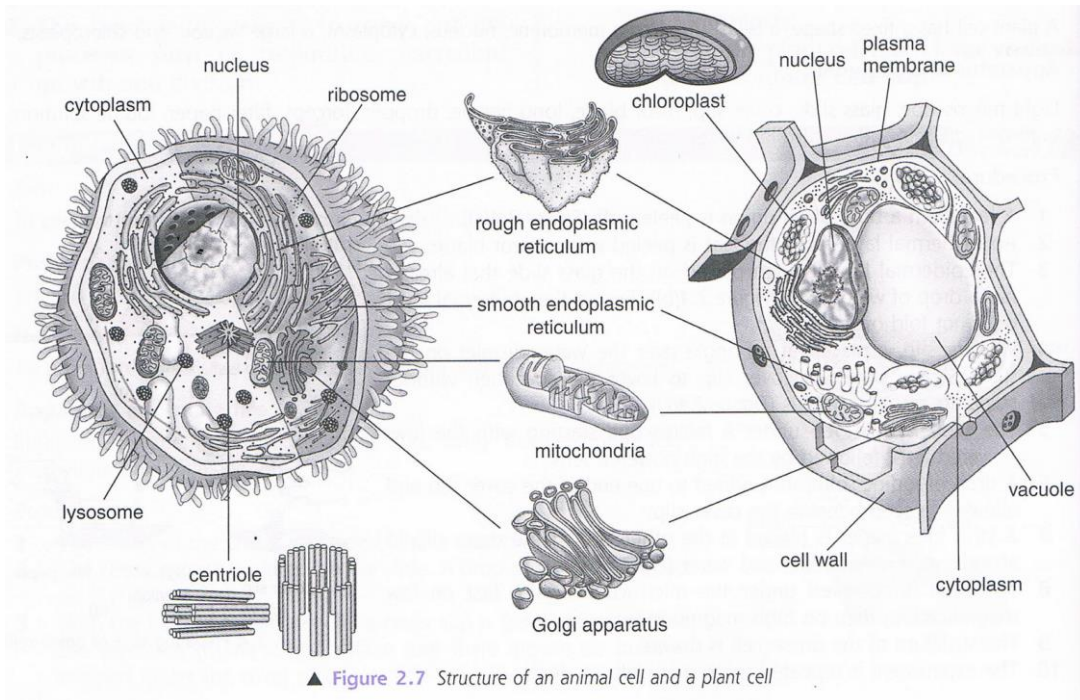
10. Explain how the nucleus, Rough Endoplasmic Reticulum, Ribosomes, vesicles, and Golgi apparatus work together to transport proteins.

(see Protein Secretion notes). There are 4 steps.

11. What is the role of lysosomes?

Lysosomes contain enzymes that break down large unneeded materials into smaller ones.

12. Label the following diagram and be sure to know the function(s) and how each organelle looks like:



nucleus, genetic material, ribosomes, mitochondria, chloroplasts, endoplasmic reticulum (rough and smooth), Golgi apparatus, cytoplasm, cell membrane, cytoskeleton, vesicles, lysosomes, cell wall, and central vacuole.

**Know the venn diagrams: prokaryote vs. eukaryote, plant vs. animal.

**Know the functions of all the structures and organelles of a plant and animal cell.