Unit Exam Answer Key

Cell Structure & Function

**Matching**

1. Controls most cell processes and contains the hereditary information A. Ribosomes

of DNA

1. Synthesizes proteins for export from the cell B. Golgi Apparatus
2. Small particles of RNA and protein found throughout the cytoplasm C. Mitochondria
3. Modifies, sorts, and packages proteins D. Endoplasmic Reticulum
4. Converts the chemical energy stored in food into compounds that are E. Nucleus

more convenient for the cell to use

1. Captures the energy from sunlight and converts it into chemical energy A. Lysosomes
2. Organelle that stores materials such as water, salts, proteins, and B. Centrioles

carbohydrates

1. Performs the vital function of removing ‘junk’ in the cell C. Vacuoles
2. Network of protein filaments that help the cell maintain its shape D. Chloroplasts
3. Located near the nucleus and help to organize cell division E. Cytoskeleton

**True/False**

1. \_\_True\_\_ Osmosis is the diffusion of water through a selectively permeable membrane.
2. \_\_False\_\_The function of a cell wall has the same function as a cell membrane.

**Multiple Choice**

1. Cell theory states:
   1. All living things are composed of cells
   2. Cells are the basic units of structures and functions in living things
   3. New cells are produced from existing cells
   4. All of the above
2. The four levels of organization in multicellular organisms are:
3. Cells, muscles, tissues, and organs
4. Fat, muscles, tissues, and organs
5. Cells, tissues, organs, and organ systems
6. Cells, muscles, fat, and organ systems
7. A cell wall is found in:
8. Plant cells
9. Animal cells
10. Both A and B
11. None of the above
12. A cell membrane is a flexible structure because it must:
13. Help a cell move
14. Regulate what enters and leaves the cell
15. Help the cell maintain its shape
16. Remove the ‘junk’ inside the cell

**Short Answer**

1. Give 2 differences and 2 similarities between prokaryotes and eukaryotes.

Differences:   
Prokaryotes-do not contain a nucleus, generally smaller and simpler

Eukaryotes- do contain a nucleus, generally larger and more complex

Similarities:

They are surrounded by a barrier called a cell membrane.

At some point in their lives, they contain the molecule that carries biological information-DNA.

1. Provide three organelles found in a plant cell not found in an animal cell. Provide one organelle found in an animal cell not found in a plant cell.

Plant cells: chloroplasts, central vacuole, cell wall

Animal cells: lysosomes

1. Describe what happens during diffusion.

Diffusion causes many substances to move across a cell membrane but does not require the cell to use energy.