Name _____ Class _____ Date _____

SECTION 7-1 REVIEW

LIFE IS CELLULAR

VOCABULARY REVIEW **Define the following terms.**

1. **cell** _____

   _____

2. **eukaryote** _____

   _____

3. **prokaryote** _____

   _____

4. resolution _____

   _____

MULTIPLE CHOICE **Write the correct letter in the blank.**

_____ 1. The work of Schleiden and Schwann can be summarized by saying that

   a. all plants are made of cells.
   b. plants and animals have specialized cells.
   c. all animals are made of cells.
   d. all plants and animals are made of cells.

_____ 2. Which cell structure contains the cell's genetic material and controls many of the cell's activities?

   a. organelle b. nucleus c. cell membrane d. cytoplasm

_____ 3. Cells fall into two broad categories, depending on whether they

   a. have a cell wall.
   b. have a nucleus.
   c. contain genetic material.
   d. contain chloroplasts.

_____ 4. Eukaryotes

   a. are larger than prokaryotes.
   c. have many different specialized organelles.
   c. contain a nucleus.
   d. All of the above.

_____ 5. Who was the first person to identify and use the term "cell"?

   a. Anton van Leeuwenhoek
   c. Matthias Schleiden
   c. Robert Hooke
   d. Theodor Schwann

Name _____ Class _____ Date _____

SHORT ANSWER Answer the questions in the space provided.

1. Explain the similarities and differences between a prokaryotic cell and eukaryotic cell. (p.173)_____

   _____

2. The smallest bacterium is 0.2 micrometers across, while the giant amoeba *Chaos chaos* is 1000 micrometers across. How many time larger is the giant amoeba than the smallest bacterium? (p.172)_____

   _____

3. Are human cells prokaryotic or eukaryotic? Explain your answer. (p.173)_____

   _____

4. State the three parts of the cell theory. (p.170)_____

   _____

   _____

5. Describe the difference between the magnification of a compound light microscope and an electron microscope.

   (p.171)_____

   _____

6. What is the difference between the magnification of a microscope and its resolution? (p171)_____

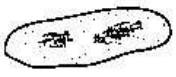
   _____

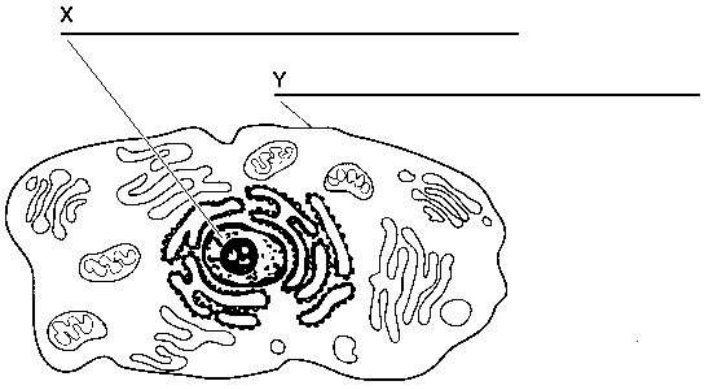
7. Which microscope would a biologist use to see the details inside a bacterium? (compound light microscope,

   dissecting microscope, SEM, or TEM). (p171)_____

STRUCTURES AND FUNCTIONS

1. These figures represent a eukaryotic cell and a prokaryotic cell. In the spaces below the diagrams, indicate which type of cell each diagram represents. (pp.172-173)





a _____

b _____

2. Label the structures X and Y in the above diagram.

Name _____ Class _____ Date _____

SECTION 7-2 REVIEW

EUKARYOTIC CELL STRUCTURE

VOCABULARY REVIEW Distinguish between the terms in each of the following pairs.

1. central **vacuole**, contractile **vacuole** _____

_____

2. **cytoplasm**, **cytoskeleton** _____

_____

3. cilia, flagella (p.181)_____

_____

MULTIPLE CHOICE Write the correct letter in the blank.

_____ 1. Which of the following is not found in the nucleus?

a. cytoplasm b. nucleolus c. chromatin d. DNA

_____ 2. Which structures carry out cell movement?

a. cytoplasm and ribosomes
b. cilia and flagella
c. nucleolus and nucleus
d. chromosomes and chromatin

_____ 3. Which organelle acts like a stomach and breaks down lipids, carbohydrates, and proteins into smaller molecules that the cell can use?

a. lysosome b. Golgi apparatus c. mitochondria. d. endoplasmic reticulum

_____ 4. Which organelle converts the chemical energy stored in food into compounds that are more convenient for the cell to use?

a. ribosome
b. chloroplast
c. mitochondrion
d. endoplasmic reticulum

_____ 5. Organelles that are surrounded by two membranes and contain DNA are the

a. nucleus, the endoplasmic reticulum, and lysosomes.
b. nucleus, the endoplasmic reticulum, and chloroplasts.
c. nucleus, chloroplasts, and mitochondria.
d. endoplasmic reticulum, mitochondria, and the Golgi apparatus.

_____ 6. Condensed, thread-like structures containing genetic information are called

a. ribosomes. b. nuclei. c. mitochondria. d. chromosomes.

Name _____ Class _____ Date _____

SHORT ANSWER Answer the questions in the space provided.

1. What is the difference between the rough ER and the smooth ER? (pp.177-178)_____

   _____

2. What two chemicals make up the organelle called a ribosome? (p.177)_____

   _____

   With what cellular function are they involved? _____

   _____

3. What is the cytoskeleton, and what are two of its major components? (pp.181-181)_____

   _____

4. Describe the internal structural organization shared by both cilia and flagella. (p.181)_____

   _____

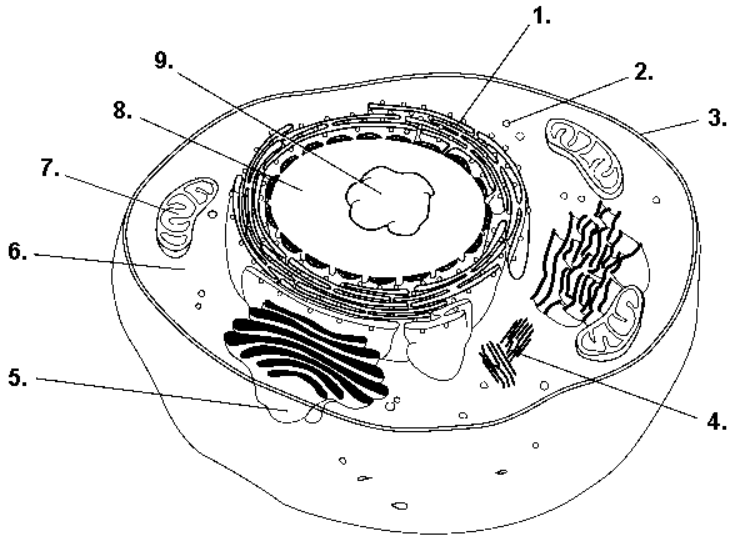
5. What is an organelle? (p.174)_____

   _____

6. What structures make a plant and animal cell different? (p.175)_____

   _____

STRUCTURES AND FUNCTIONS Label each part of the diagram below. Use the following terms: nucleus, centrioles, cytoplasm, cell membrane, free ribosome, mitochondrion, rough ER, Golgi apparatus, and nucleolus. (p.175)



1. Is this an animal or plant cell? Explain your answer. _____

2. Is this a prokaryotic cell or eukaryotic cell? Explain your answer. _____

Name _____ Class _____ Date _____

SECTION 7-3 REVIEW

CELL BOUNDARIES

VOCABULARY REVIEW Distinguish between the terms in each of the following pairs.

1. cell membrane, cell wall _____

_____

2. diffusion, osmosis _____

_____

3. hypertonic, hypotonic _____

_____

4. phagocytosis, pinocytosis _____

_____

MULTIPLE CHOICE Write the correct letter in the blank.

_____ 1. Which of the following is a function of the cell membrane?

a. break down lipids and proteins
b. prevent the cell from exploding
c. store water and salt
d. control which materials can enter or leave a cell

_____ 2. The main function of the cell wall is to

a. support and protect the cell.
b. direct the activities of the cell.
c. store DNA.
d. Both a and c are correct.

_____ 3. Diffusion of water across a selectively permeable membrane is called

a. osmosis. b. diffraction. c. active transport. d. endocytosis.

_____ 4. An animal cell that is surrounded by freshwater will burst because the osmotic pressure causes

a. water to move into the cell.
b. solutes to move into the cell.
c. water to move out of the cell.
d. solutes to move out of the cell.

_____ 5. Cell membranes are constructed of

a. lipid bilayers. b. proteins. c. carbohydrates. d. All of the above.

_____ 6. Which of the following is not an example of active transport?

a. osmosis b. diffusion c. facilitated diffusion d. None of the above.

Name _____ Class _____ Date _____

SHORT ANSWER Answer the questions in the space provided.

1. Why do scientists refer to the cell membrane as a "fluid mosaic model"? (p.182)_____

   _____

   _____

2. How do facilitated diffusion and active transport differ? (pp.187-188)_____

   _____

3. A hypertonic salt solution has a higher concentration of solutes than a red blood cell. Explain what happens when a red blood cell is placed in a hypertonic salt solution (p.186)_____

   _____

4. What are the two functions of the cell membrane? (p.182)_____

   _____

5. What happens to the movement of molecules at equilibrium? (p.184)_____

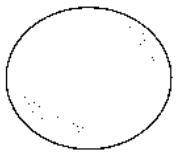
   _____

6. What does it mean that biological membranes are selectively permeable? (p.185)_____

   _____

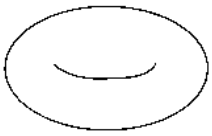
STRUCTURES AND FUNCTIONS The diagram below shows the appearance of a red blood cell and a plant cell in isotonic, hypotonic, and hypertonic environments. Label each environment in the spaces provided. (p186)

RED BLOOD CELL



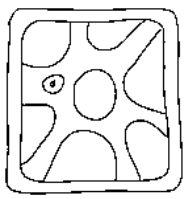
a _____

b _____

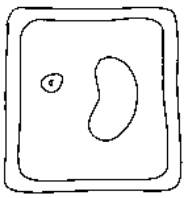


c _____

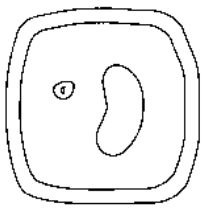
PLANT CELL



d _____



e _____



f _____

Name _____ Class _____ Date _____

SECTION 7-4 REVIEW

THE DIVERSITY OF CELLULAR LIFE

VOCABULARY REVIEW **Define the following terms.**

1. **cell specialization** _____

_____

2. **tissue** _____

_____

3. **organ** _____

_____

4. **organ system** _____

_____

MULTIPLE CHOICE **Write the correct letter in the blank.**

_____ 1. Which one of the following is not a tissue in the human body?

a. stomach b. epithelial c. muscle d. nervous

_____ 2. Cells that control the entry and exit of water, oxygen, and carbon dioxide in plant leaves are called

a. guard cells. b. stomata cells. c. bark cells. d. wood cells.

_____ 3. The process in which cells become restricted to carrying out one or a few functions is called cell

a. reproduction. b. competition. c. specialization. d. transmission.

_____ 4. A group of similar cells that perform a particular function is called a(n)

a. organism. b. organ system. c. tissue. d. organ.

_____ 5. The cells of multicellular organisms are

a. smaller than those of unicellular organisms.
b. specialized to perform particular functions.
c. simpler than those of unicellular organisms.
d. not dependent on one another.

_____ 6. Muscle cells generate force by using an overdeveloped

a. nuclei. b. flagella. c. mitochondria. d. cytoskeleton.

Name _____ Class _____ Date _____

SHORT ANSWER Answer the questions in the space provided.

1. What kind of animal tissue functions in the movement of the organism? (p.191)_____

   _____

2. What kind of plant cells regulate the exchange of gases between the plant and the air around it? (p.192)_____

   _____

3. Is your stomach a tissue, an organ, or an organ system? Explain your answer. (p.193)_____

   _____

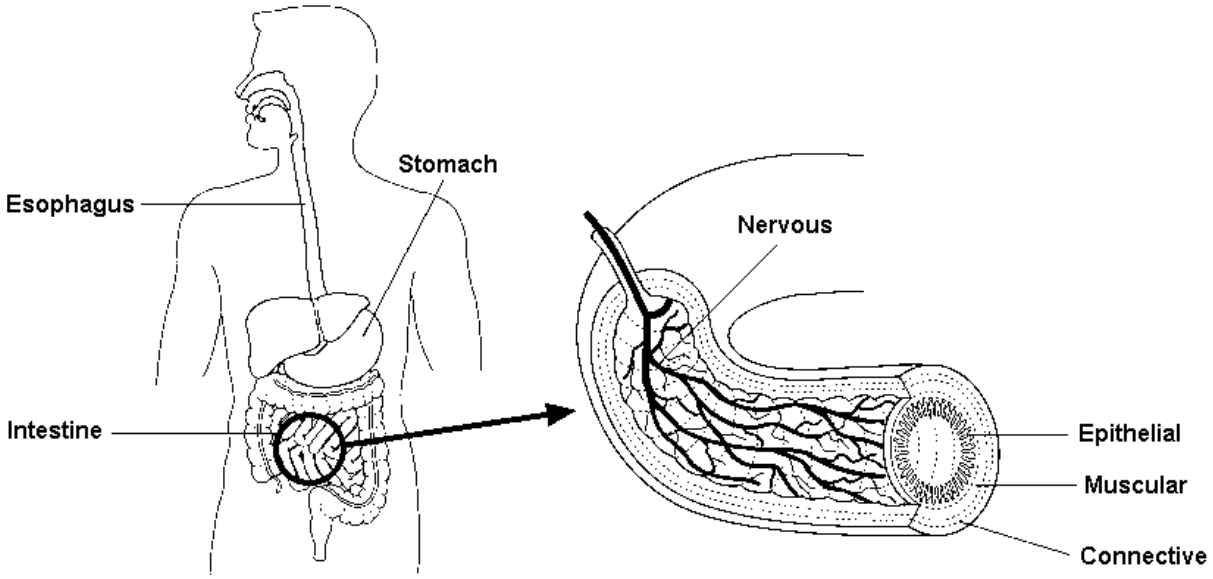
4. Discuss the four levels of organization in multicellular organisms. (pp.192-193)_____

   _____

   _____

   _____

STRUCTURES AND FUNCTIONS Use the figure to answer the following questions. (p.193)



1. The stomach is an example of the level of organization called _____

2. The esophagus, stomach, and intestine together are part of a level of organization called _____

3. The structures shown in the insert (right) show the level of organization called _____

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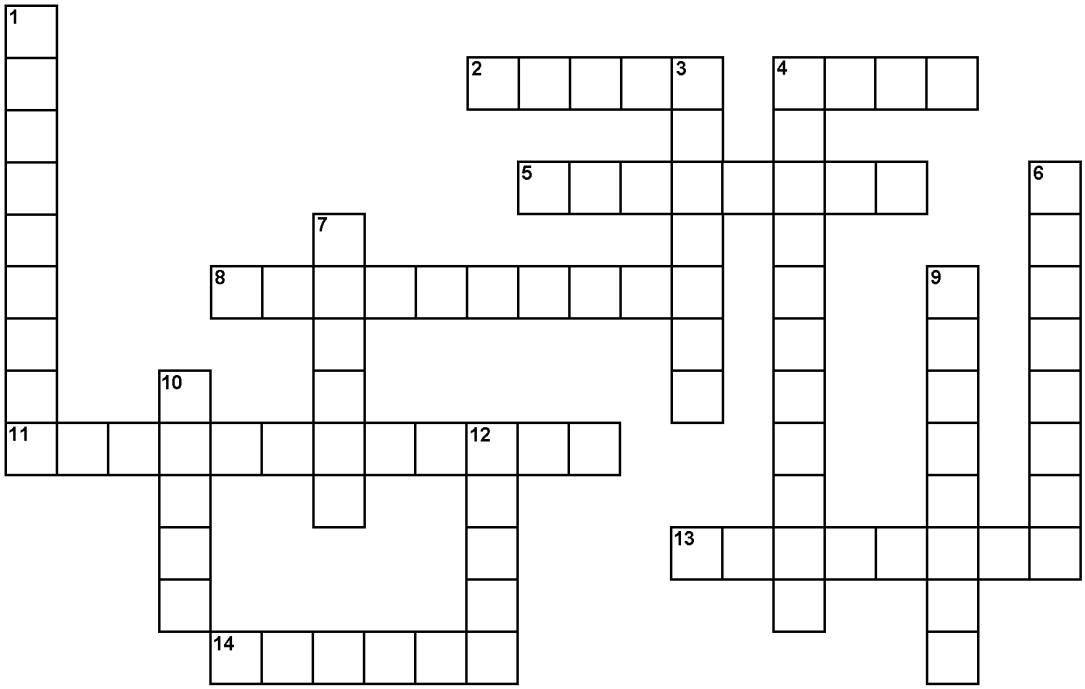
VOCABULARY - CHAPTER 7

The crossword puzzle is a simple way to master some of the more important vocabulary terms in this chapter.



Across

2. an _____ is a structure made up of tissues
4. the smallest living unit
5. tissue used by plants to transport water and sugars
8. a _____ is an organism that lacks a nucleus and other organelles with a membrane
11. aerobic organelles called the “power house” - they produce ATP through cellular respiration
13. an organelle called the “stomach” - site where old organelles and bacteria are digested
14. the _____ ER is the site where lipids are produced

Down

1. a long whip-like thread that is used by some cells for locomotion
3. the “brains” of the cell - site where DNA is located
4. a green organelle used by plants and algae for photosynthesis
6. a cell _____ is its boundary that controls what may enter or exit the cell
7. a spherical, colonial organism with cells that are genetically identical to each other
9. an organelle where proteins are formed in a cell
10. an organelle that wraps and modifies proteins to be sent out of the cell
12. the _____ ER is the site where proteins are produced and sent to the Golgi apparatus for further processing

The following terms are **not** used in this chapter but are found in this puzzle. Use a reference source and look up their meanings so you can complete this vocabulary puzzle. **vascular, and Volvox**.