

**Chapter 7 Cell Structure and Function** **Section Review 7-1**

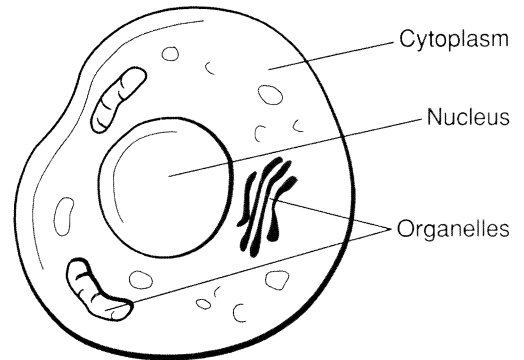
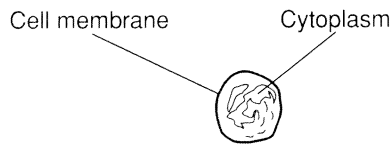
**Reviewing Key Concepts**

**Completion** *On the lines provided, complete the following sentences.*

1. All \_\_\_\_\_ are composed of cells.
2. Cells are the basic units of \_\_\_\_\_ and \_\_\_\_\_ in all organisms.
3. New cells are produced from \_\_\_\_\_.
4. The cells of eukaryotes have a \_\_\_\_\_; the cells of \_\_\_\_\_ do not.
5. Eukaryotic cells also have dozens of specialized structures called \_\_\_\_\_.

**Reviewing Key Skills**

**Classifying** *On the lines provided, label each cell as either prokaryotic or eukaryotic.*



6. \_\_\_\_\_ 7. \_\_\_\_\_

8. **Calculating** The smallest bacterium is 0.2 micrometers across, while the giant amoeba *Chaos chaos* is 1000 micrometers across. How many times larger is the giant amoeba than the smallest bacterium?

\_\_\_\_\_

\_\_\_\_\_

9. **Comparing and Contrasting** Explain the similarities and differences between a prokaryotic cell and a eukaryotic cell.

\_\_\_\_\_

\_\_\_\_\_

10. **Applying Concepts** Are human cells prokaryotic or eukaryotic? Explain your answer.

\_\_\_\_\_

\_\_\_\_\_

**Chapter 7 Cell Structure and Function** **Section Review 7-2**

**Reviewing Key Concepts**

**Matching** *On the lines provided, match the structure with its function in the cell.*

- a. cell wall
- b. nucleus
- c. cytoskeleton
- d. endoplasmic reticulum
- e. Golgi apparatus
- f. chloroplast
- g. mitochondrion

- \_\_\_\_\_ 1. controls most cell processes and contains DNA
- \_\_\_\_\_ 2. uses energy from food to make high-energy compounds
- \_\_\_\_\_ 3. provides support and protection for the cell
- \_\_\_\_\_ 4. maintains cell shape with a network of protein filaments
- \_\_\_\_\_ 5. uses energy from sunlight to make food molecules
- \_\_\_\_\_ 6. assembles components of the cell membrane and modifies some proteins
- \_\_\_\_\_ 7. attaches carbohydrates and lipids to proteins using enzymes

**Reviewing Key Skills**

8. **Inferring** Plants have cells that contain chloroplasts. Why must their cells contain mitochondria as well?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. **Using Analogies** In some ways, a cell is analogous to a factory. Create an analogy describing the job of a lysosome within a cellular "factory."

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. **Comparing and Contrasting** What structures make plant and animal cells different?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**Chapter 7 Cell Structure and Function** **Section Review 7-3**

**Reviewing Key Concepts**

**Short Answer** *On the lines provided, answer the following questions.*

1. What are two functions of the cell membrane?

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2. What happens to a high concentration of water molecules on one side of a cell membrane during the process of diffusion?

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3. What is osmosis?

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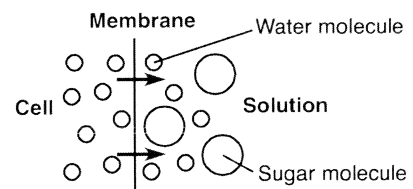
**Completion** *On the lines provided, complete the following sentences.*

4. During the process of \_\_\_\_\_, a molecule such as glucose must use a protein channel to cross through a cell membrane.
5. For a molecule to move from an area of low concentration to high concentration, the process of \_\_\_\_\_ must occur.

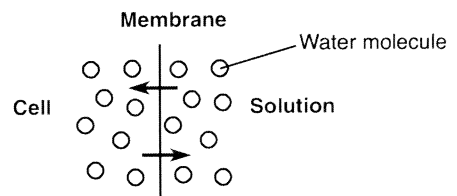
**Reviewing Key Skills**

**Interpreting Graphics** *On the lines provided, identify each diagram as showing an isotonic, a hypotonic, or a hypertonic solution inside the cell and describe how the concentration of water molecules will affect the shape of the cell.*

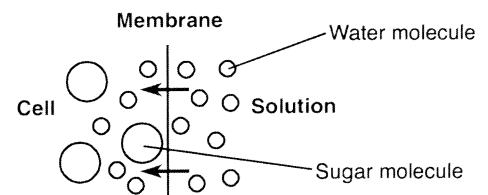
6. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



7. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



8. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



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**Chapter 7 Cell Structure and Function** **Section Review 7-4**

**Reviewing Key Concepts**

**Short Answer** *On the lines provided, answer the following questions.*

- 1. Why do multicellular organisms contain specialized cells?  
\_\_\_\_\_  
\_\_\_\_\_
- 2. Give two examples of specialized cells and explain the cell's unique role in the human body.  
\_\_\_\_\_  
\_\_\_\_\_

**Identifying Structures** *On the lines provided, place the following terms in order from smallest to largest level of organization.*

- \_\_\_\_\_ 3. tissues
- \_\_\_\_\_ 4. organ systems
- \_\_\_\_\_ 5. organs
- \_\_\_\_\_ 6. individual cells

**Reviewing Key Skills**

- 7. **Comparing and Contrasting** Compare the activities of a specialized cell in a multicellular organism to those of a unicellular organism.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 8. **Using Analogies** The specialized cells in a multicellular organism have unique roles to play. Create an analogy that describes a situation in which specific organisms or objects have unique roles in a system.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 9. **Applying Concepts** Is your tongue a tissue, an organ, or an organ system? Explain your answer.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 10. **Comparing and Contrasting** How are tissues and organs different?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**Chapter 7 Cell Structure and Function**

**Chapter Vocabulary Review**

**Matching** *On the lines provided, match the term with its definition.*

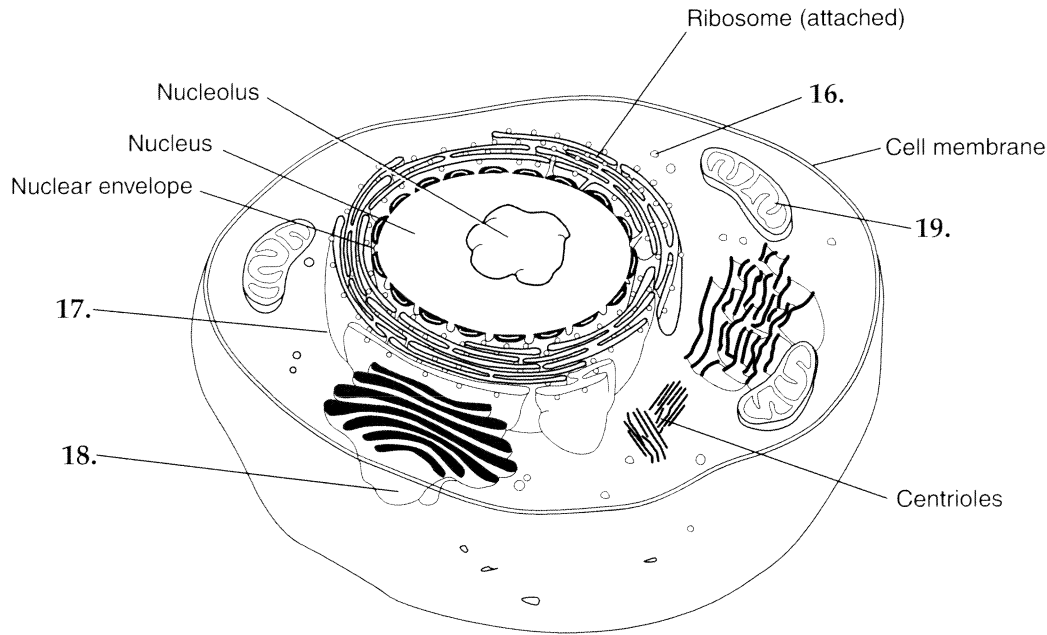
- |                        |   |
|------------------------|---|
| _____ 1. cell          | a. organism whose cells contain a nucleus                                     |
| _____ 2. cell membrane | b. granular material visible within the nucleus                               |
| _____ 3. cell wall     | c. the basic unit of all forms of life  |
| _____ 4. nucleus       | d. specialized structures within a cell that perform important cell functions |
| _____ 5. cytoplasm     | e. organism whose cells do not contain a nucleus                              |
| _____ 6. prokaryote    | f. strong layer around the cell membrane that protects the cell               |
| _____ 7. eukaryote     | g. process by which extensions of cytoplasm engulf large particles            |
| _____ 8. organelle     | h. large structure that contains the cell's genetic information               |
| _____ 9. chromatin     | i. thin, flexible barrier around the cell                                     |
| _____ 10. phagocytosis | j. material inside the cell membrane, not including the nucleus               |

**Multiple Choice** *On the lines provided, write the letter that best completes the sentence or answers the question.*

- \_\_\_\_\_ 11. The small dense region in the nucleus where the assembly of ribosomes begins is called the  
 a. nucleolus.                      b. nuclear envelope.  
 c. chloroplast.                    d. vacuole.
- \_\_\_\_\_ 12. The hollow tubes of protein, about 25 nanometers in diameter, that help maintain the shape of the cell are called  
 a. microfilaments.                b. mitochondrion.  
 c. microtubules.                  d. ribosomes.
- \_\_\_\_\_ 13. Which organelles can use energy from sunlight to create energy-rich food molecules?  
 a. lysosomes                        b. Golgi apparatus  
 c. vacuoles                        d. chloroplasts
- \_\_\_\_\_ 14. What is the process by which material is taken into the cell by infoldings of the cell membrane?  
 a. diffusion                        b. endocytosis  
 c. osmosis                         d. exocytosis
- \_\_\_\_\_ 15. The fourth, and highest, level of organization in a multicellular organism is  
 a. cell specialization.            b. a tissue.  
 c. an organ system.               d. an organ.

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**Labeling Diagrams** *On the lines provided, label the structures found in an animal cell that correspond with the numbers in the diagram.*



16. \_\_\_\_\_

17. \_\_\_\_\_

18. \_\_\_\_\_

19. \_\_\_\_\_

**Completion** *On the lines provided, complete the following sentences.*

20. The distinct, threadlike structures that contain the genetic information of the cell are called \_\_\_\_\_.
21. Molecules tend to move from an area of high concentration to an area of low concentration in a process known as \_\_\_\_\_.
22. When some substances can pass across them but others cannot, biological membranes are said to have \_\_\_\_\_.
23. The process in which water diffuses through a selectively permeable membrane is called \_\_\_\_\_.
24. The process by which a protein channel allows molecules to cross the cell membrane is called \_\_\_\_\_.
25. The process that requires an input of energy to help material move from an area of lower concentration to an area of greater concentration is called \_\_\_\_\_.