

CH Ch. 1 TEST
STUDY GUIDE PACKET!

Discovering Cells

Understanding Main Ideas

If the statement is true, write true. If the statement is false, change the underlined word or words to make the statement true.

1. _____ Cells are the basic unit of structure and function in living things.
2. _____ Telescopes are instruments that can magnify very small objects.
3. _____ Cells were first observed by Robert Hooke.
4. _____ Light microscopes use beams of electrons to produce magnified images.
5. _____ Resolution is the condition when objects appear larger than they really are.
6. _____ Magnification is the ability to distinguish details on an object.
7. _____ If a compound microscope has a 10× lens in its eyepiece and a 20× lens in its nosepiece, its total magnification is 100×.

Building Vocabulary

Write the definition of each of these terms in the spaces provided.

8. cell

9. microscope

10. cell theory

Lesson Quiz

Discovering Cells

Fill in the blank to complete each statement.

1. A cell's functions can include obtaining food and water and getting rid of _____.
2. Compound microscopes focus light through _____ to produce a magnified image.
3. A large organism is made up of many millions of _____.
4. A(n) _____ lens has a center that is thicker than its edge.
5. The _____ describes how cells are related to living things.
6. The ability to distinguish between two nearby objects is called _____.

Write the letter of the correct answer on the line at the left.

7. ____ The scientist who determined that all animals are made out of cells was
A Hooke
B Schleiden
C Schwann
D Virchow
8. ____ A compound microscope with a 10× eyepiece and a 40× objective has a magnification of
A 10×
B 40×
C 50×
D 400×
9. ____ Which of the following statements is **NOT** part of the cell theory?
A All cells are produced from other cells.
B Cells can absorb food and oxygen.
C All living things are composed of cells.
D Cells are the basic units of structure and function in living things.
10. ____ The visible field of a microscope is 10 mm wide. How large is an object that takes up $\frac{1}{4}$ of the field?
A 1 mm
B 2.5 mm
C 4 mm
D 5 mm

Review and Reinforce

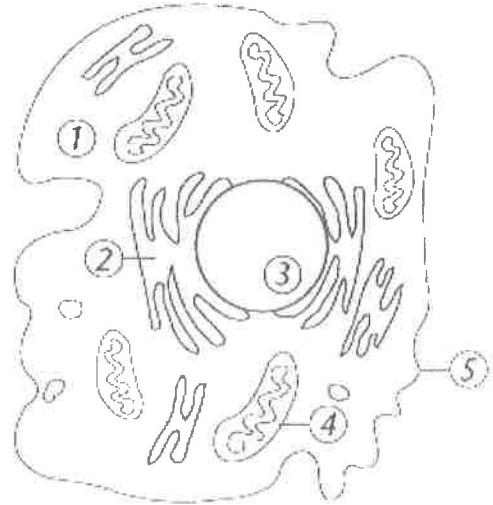
Looking Inside Cells

Understanding Main Ideas

Identify each of the cell structures in the figure.

1. _____
2. _____
3. _____
4. _____
5. _____

Simplified Animal Cell



Building Vocabulary

On a separate sheet of paper, write a definition for each of these terms.

6. tissue
7. chloroplast
8. ribosome
9. nucleus
10. mitochondria
11. organ
12. multicellular

Lesson Quiz

Looking Inside Cells

Fill in the blank to complete each statement.

1. The _____ controls the materials that enter and leave the cell.
2. Ribosomes make _____.
3. The _____ is a large structure that directs the cell's activities.
4. The storage area of a cell is called a(n) _____.
5. A group of organs that work together to perform a major function is called a(n) _____.
6. _____ are tiny cell structures that carry out specific functions in the cell.

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

7. _____ Plant cells have chloroplasts, but animal cells do not.
8. _____ The cell's nucleus is filled with a substance called protein.
9. _____ The specialized cells in a unicellular organism perform specialized jobs.
10. _____ Ribosomes are made in a special region of the nucleus called the nucleolus.

Review and Reinforce

Chemical Compounds in Cells

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. Describe one way that cells use water.

2. Explain why living things store energy in lipids instead of in carbohydrates.

3. Name two ways that living things use proteins.

Name the elements found in each of these compounds.

4. nucleic acid _____

5. lipid _____

6. protein _____

7. carbohydrate _____

Building Vocabulary

On a separate sheet of paper, write a definition for each of these terms.

8. element

9. compound

10. enzyme

Lesson Quiz

Chemical Compounds in Cells

Match each term with its definition by writing the letter of the correct definition in the right column on the line beside the term in the left column.

- | | |
|---------------------|---|
| 1. ___ carbohydrate | a. inorganic compound |
| 2. ___ carbon | b. element found in water |
| 3. ___ water | c. energy-rich organic compound |
| 4. ___ oxygen | d. element that is part of most organic compounds |

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

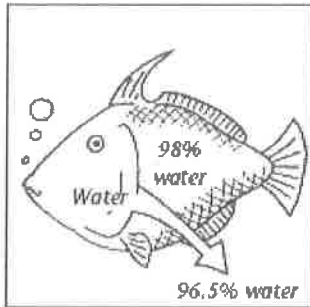
- _____ Sugars and starches are examples of lipids.
- _____ Proteins are part of cell membranes and store energy.
- _____ A(n) enzyme helps speed a chemical reaction.
- _____ Carbohydrates direct cell functions.
- _____ Water makes up one-third of the human body.
- _____ Meat, dairy products, fish, nuts, and beans are all foods that are high in protein.

Review and Reinforce

The Cell in Its Environment

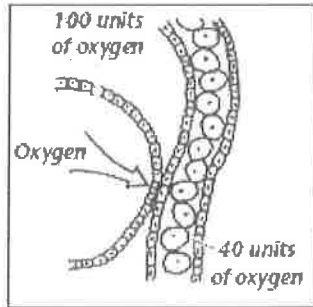
Understanding Main Ideas

Fill in the blank to identify the process illustrated in each of the following figures.



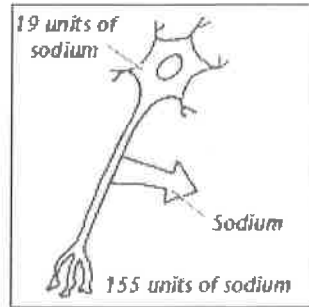
Water moves out of the cells of a saltwater fish and into the ocean.

1. _____



Oxygen moves from the lungs into the bloodstream.

2. _____



Sodium is pumped out of a nerve cell.

3. _____

Answer the following questions on a separate piece of paper.

4. How does active transport differ from passive transport?
5. What makes the cell membrane selectively permeable?

Building Vocabulary

Match each term with its definition by writing the letter of the correct definition in the right column on the line beside the term in the left column.

6. ___ osmosis

7. ___ exocytosis

8. ___ diffusion

9. ___ endocytosis

a. the process by which large molecules are engulfed by a cell

b. the process by which molecules tend to move from an area of higher concentration to an area of lower concentration

c. the process by which large molecules are expelled from a cell

d. the process by which water moves across a selectively permeable membrane

Lesson Quiz

The Cell in Its Environment

Fill in the blank to complete each statement.

1. Water diffusing through a semipermeable membrane is called _____.
2. _____ occurs when a cell engulfs large food particles.
3. The cell membrane is built of a double layer of _____.
4. Facilitated diffusion moves large molecules through _____.
5. The _____ controls the materials that move into and out of a cell.
6. The _____ use energy to pick up specific molecules and carry them across the cell membrane.

Write the letter that best describes the type of transport on the line at the left.

7. ____ Glucose enters a liver cell through a protein channel.
A diffusion
B facilitated diffusion
C osmosis
D active transport
8. ____ Oxygen moves into a contracting heart muscle cell.
A diffusion
B facilitated diffusion
C osmosis
D active transport
9. ____ A nerve cell uses energy to pump sodium out of its cytoplasm into a sodium-rich environment.
A diffusion
B facilitated diffusion
C osmosis
D active transport
10. ____ Water moves out of the skin cells of a person swimming in a freshwater pond.
A diffusion
B facilitated diffusion
C osmosis
D active transport