Chapter Review

USING KEY TERMS

Complete each of the following sentences by choosing the correct term from the word bank.

cell	organ
cell membrane	prokaryote
organelles	eukaryote
cell wall	tissue
structure	function

1. A(n) ___ is the most basic unit of all living things.
2. The job that an organ does is the ___ of that organ.
3. Ribosomes and mitochondria are types of ___.
4. A(n) ___ is an organism whose cells have a nucleus.
5. A group of cells working together to perform a specific function is a(n) ___.
6. Only plant cells have a(n) ___.

UNDERSTANDING KEY IDEAS

Multiple Choice

7. Which of the following best describes an organ?
   - a. a group of cells that work together to perform a specific job
   - b. a group of tissues that belong to different systems
   - c. a group of tissues that work together to perform a specific job
   - d. a body structure, such as muscles or lungs
8. The benefits of being multicellular include
   - a. small size, long life, and cell specialization.
   - b. generalized cells, longer life, and ability to prey on small animals.
   - c. larger size, more enemies, and specialized cells.
   - d. longer life, larger size, and specialized cells.
9. In eukaryotic cells, which organelle contains the DNA?
   - a. nucleus
   - b. Golgi complex
   - c. smooth ER
   - d. vacuole
10. Which of the following statements is part of the cell theory?
    - a. All cells suddenly appear by themselves.
    - b. All cells come from other cells.
    - c. All organisms are multicellular.
    - d. All cells have identical parts.
11. The surface area–to-volume ratio of a cell limits
    - a. the number of organelles that the cell has.
    - b. the size of the cell.
    - c. where the cell lives.
    - d. the types of nutrients that a cell needs.
12. Two types of organisms whose cells do not have a nucleus are
    - a. prokaryotes and eukaryotes.
    - b. plants and animals.
    - c. bacteria and archaea.
    - d. single-celled and multicellular organisms.

Short Answer

13. Explain why most cells are small.

14. Describe the four levels of organization in living things.

15. What is the difference between the structure of an organ and the function of the organ?

16. Name two functions of a cell membrane.

17. What are the structure and function of the cytoskeleton in a cell?

CRITICAL THINKING

18. **Concept Mapping** Use the following terms to create a concept map: *cells, organisms, Golgi complex, organ systems, organs, nucleus, organelle,* and *tissues.*

19. **Making Comparisons** Compare and contrast the functions of the endoplasmic reticulum and the Golgi complex.

20. **Identifying Relationships** Explain how the structure and function of an organism's parts are related. Give an example.

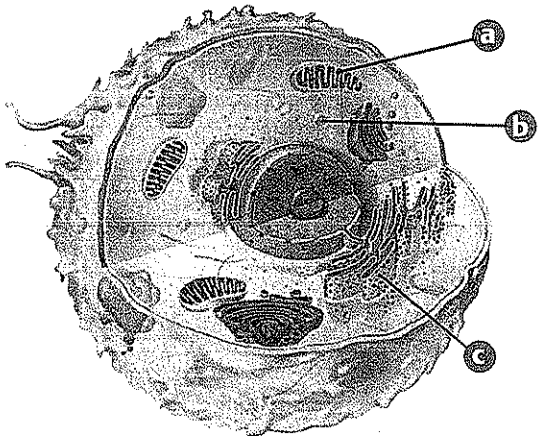
21. **Evaluating Hypotheses** One of your classmates states a hypothesis that all organisms must have organ systems. Is your classmate's hypothesis valid? Explain your answer.

22. **Predicting Consequences** What would happen if all of the ribosomes in your cells disappeared?

23. **Expressing Opinions** Scientists think that millions of years ago the surface of the Earth was very hot and that the atmosphere contained a lot of methane. In your opinion, which type of organism, a bacterium or an archaeon, is the older form of life? Explain your reasoning.

INTERPRETING GRAPHICS

Use the diagram below to answer the questions that follow.



24. What is the name of the structure identified by the letter *a*?

25. Which letter identifies the structure that digests food particles and foreign invaders?

26. Which letter identifies the structure that makes proteins, lipids, and other materials and that contains tubes and passageways that enable substances to move to different places in the cell?