

## Assessment

**Chapter Test****Cell Structure**

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- \_\_\_\_\_ 1. To maximize its surface area-to-volume ratio, a large cell may
- exchange materials with the environment.
  - take a spherical shape.
  - be large in one dimension but small in two.
  - become larger.
- \_\_\_\_\_ 2. What is one difference between prokaryotes and eukaryotes?
- Only eukaryotes are always unicellular.
  - Only prokaryotes have a nuclear membrane.
  - Organelles are found only in prokaryotes.
  - Only eukaryotes contain mitochondria.
- \_\_\_\_\_ 3. An example of a prokaryotic cell is a(n)
- animal cell.
  - plant cell.
  - bacterium.
  - a protist.
- \_\_\_\_\_ 4. A cell's digestive enzymes are stored in
- Golgi apparatus.
  - lysosomes.
  - ribosomes.
  - mitochondria.
- \_\_\_\_\_ 5. Which allow bacteria to adhere to one another?
- a capsule and cell wall
  - a cell wall and flagella
  - flagella and pili
  - pili and a capsule
- \_\_\_\_\_ 6. The interior of a cell is called the
- cytoplasm.
  - cytoskeleton.
  - flagellum.
  - cilium.
- \_\_\_\_\_ 7. How do vesicles help maintain homeostasis in a cell?
- aid cell movement
  - aid colonial cells
  - store and release substances as needed
  - make ribosomes
- \_\_\_\_\_ 8. Cells in multicellular organisms
- are independent.
  - are permanently associated.
  - have unused organelles.
  - do not coordinate activities.

**Chapter Test *continued***

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- \_\_\_\_\_ 9. Which two structures are involved in energy production and use on the cellular level?
- a. chloroplasts and mitochondria    c. Golgi bodies and chloroplasts  
b. mitochondria and Golgi bodies    d. microtubules and mitochondria
- \_\_\_\_\_ 10. Which of these observations helped lead to the cell theory?
- a. All cells have DNA.  
b. Many different types of cells have organelles.  
c. Cells are modified for different functions.  
d. All parts of a plant are made of cells.

**Complete each statement by writing the correct term or phrase in the space provided.**

11. The first scientist to see cells used a(n) \_\_\_\_\_ to look at \_\_\_\_\_.
12. The system of microscopic protein fibers that supports the shape of the cell is called the \_\_\_\_\_.
13. There are two types of ribosomes. \_\_\_\_\_ ribosomes are attached to the surface of another \_\_\_\_\_. They make \_\_\_\_\_ for use \_\_\_\_\_ the cell. \_\_\_\_\_ ribosomes float in the cytosol. They make \_\_\_\_\_ for use \_\_\_\_\_ the cell.
14. A(n) \_\_\_\_\_ is a small sac in a eukaryotic cell that holds a variety of materials. A(n) \_\_\_\_\_ \_\_\_\_\_ is a type of \_\_\_\_\_ in plants and some protists that is filled with fluid.
15. In a plant cell, \_\_\_\_\_ convert energy from organic compounds into ATP. \_\_\_\_\_ use light energy to convert carbon dioxide and water into sugar.
16. Cells that are permanently associated but that do not communicate with one another form a(n) \_\_\_\_\_ .

**Chapter Test *continued***

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**Study the following steps related to protein production and packaging in a eukaryotic cell. Determine the order in which the steps occur. Write the number of each step in the space provided.**

- \_\_\_\_\_ 17. The ER membrane pinches off to encircle the protein.
- \_\_\_\_\_ 18. The vesicle with the protein enters one end of the Golgi apparatus.
- \_\_\_\_\_ 19. In the nucleus, DNA instructions are copied as RNA messages.
- \_\_\_\_\_ 20. Proteins cross the membrane of the rough ER and enter the ER.
- \_\_\_\_\_ 21. The finished protein leaves the other end of the Golgi apparatus in a new vesicle that buds from the organelle's surface.
- \_\_\_\_\_ 22. The finished protein travels through the cytoplasm to the cell membrane.
- \_\_\_\_\_ 23. The vesicle fuses with the cell membrane, releasing the protein out of the cell.
- \_\_\_\_\_ 24. The vesicle holding the protein travels through the endoplasmic reticulum and out into the cytoplasm.
- \_\_\_\_\_ 25. RNA messages travel to bound ribosomes, where proteins are made.
- \_\_\_\_\_ 26. The protein is modified by enzymes.
- \_\_\_\_\_ 27. The finished protein is repackaged, enclosed in a new vesicle.

**Study the following terms related to cell organization in multicellular organisms. In the space after the term, write the definition of the term. Then, determine the order of the terms from least complex to most complex. Write the number related to the order in the space provided.**

- \_\_\_\_\_ 28. tissue \_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_ 29. cell \_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_ 30. organ system \_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_ 31. organ \_\_\_\_\_  
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**Chapter Test *continued***

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**Read each question, and write your answer in the space provided.**

32. What are some examples of cell shape reflecting cell function?

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33. Why can small cells exchange substances with the environment more readily than large cells can?

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34. Why is DNA essential to the functioning of cells? How is DNA protected in eukaryotic cells?

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35. What are four ways prokaryotic cells can vary?

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36. List three ways plant cells differ from animal cells.

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37. Explain why colonial organisms are not considered multicellular organisms.

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