

Ch 7. Cell Structure & Function. Biology. Landis

Handle _____

Section 7-1 Life Is Cellular (pages 169-172)

This section explains what the cell theory is. It also describes the characteristics of two categories of cells, prokaryotes and eukaryotes.

The Cell Theory (pages 169-170)

1. What was Anton van Leeuwenhoek the first to see in the 1600s?
2. What did a thin slice of cork seem like to Robert Hooke when he observed it through a microscope?
3. What did the German botanist Matthias Schleiden conclude?
4. What did the German scientist Theodor Schwann conclude?
5. How did Rudolph Virchow summarize his years of work?
6. What are the three concepts that make up the cell theory?

Basic Cell Structures (page 171)

7. Complete the table about structures that are common to most cells.

COMMON CELL STRUCTURES

Structure	Description
Cell membrane	
Cell wall	
Nucleus	
Cytoplasm	

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Prokaryotes and Eukaryotes (page 172)

8. Complete the table about the two categories of cells.

TWO CATEGORIES OF CELLS

Category	Definition	Examples
	Organisms whose cells lack nuclei	
	Organisms whose cells contain nuclei	

9. What is an organelle?

10. Are all eukaryotes large, multicellular organisms?

Section 7-2 Cell Structures (pages 173-183)

This section describes the functions of the major cell structures.

Cell Wall (pages 173-174)

11. In what organisms are cell walls found?

Nucleus (pages 175-176)

12. What is the function of the nucleus?

13. What important molecules does the nucleus contain?

14. The granular material visible within the nucleus is called

15. What does chromatin consist of?

16. What are chromosomes?

17. Most nuclei contain a small, dense region known as the

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Cytoskeleton (page 176)

18. What is the cytoskeleton?

Organelles in the Cytoplasm (pages 177-180)

19. What is the difference between rough ER and smooth ER?

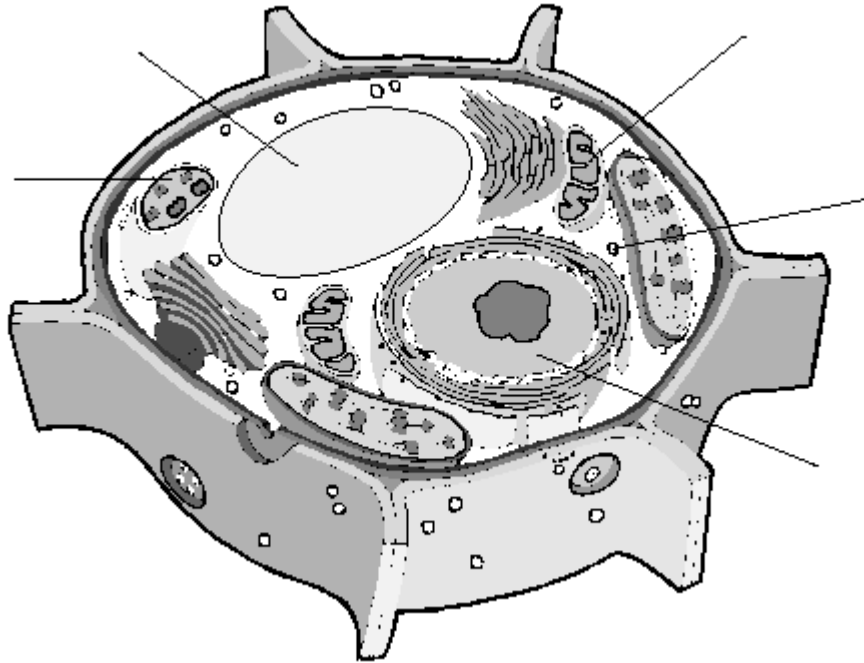
20. Match the organelle with its description

Organelle	Description
Ribosome	a. Uses energy from sunlight to make energy-rich food
Endoplasmic reticulum	b. Stack of membranes in which enzymes attach carbohydrates and lipids to proteins
Golgi apparatus	c. Uses energy from food to make high-energy compounds
Lysosome	d. An internal membrane system in which components of cell membrane and some proteins are constructed
Vacuole	e. Saclike structure that stores materials
Chloroplast	f. Small particle of RNA and protein that produces protein following instructions from nucleus
Mitochondrion	g. Filled with enzymes used to break down food into particles that can be used

21. The process that occurs in chloroplasts is called

22. Label the structures on the illustration of the plant cell.

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The Cell as a Factory (page 182)

23. Match the cell structure with the part of a factory it is like.

Cell Structure	Factory Part
Cytoskeleton	a. Oil-burning furnaces
Nucleus	b. Customization shop
Ribosome	c. Solar power plants
Golgi apparatus	d. Steel beams and columns
Chloroplasts	e. Factory machines
Mitochondria	f. Main office

Comparing Cells (page 183)

24. Circle the letter of each structure that animal cells contain.

- a. chloroplasts b. lysosomes c. cytoskeleton d. ER

25. Circle the letter of each structure that plant cells contain.

- a. cell wall b. ER c. lysosomes d. chloroplast

Section 7-3 Movement Through the Membrane (pages 184-189)

This section describes the main functions of the cell membrane. It also explains what happens during diffusion and explains what osmosis is.

Cell Membrane (page 184)

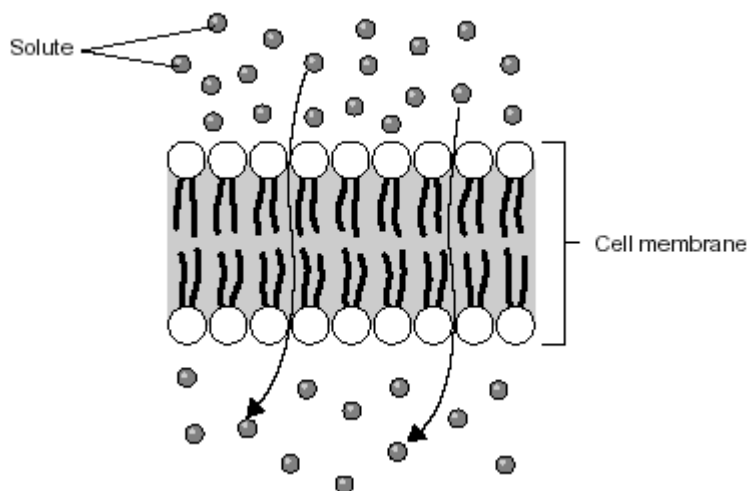
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26. What are the functions of the cell membrane?

Diffusion (page 185)

27. What is diffusion?

28. The molecules of solute in the illustration are moving through the cell membrane from top to bottom. INDICATE WITH LABELS which side of the membrane has a high concentration of solute and which has a low concentration.



Osmosis (pages 186-187)

29. What is osmosis?

30. When will water stop moving across a membrane?

31. On which side of a selectively permeable membrane does osmosis exert a pressure?

Facilitated Diffusion (page 188)

32. What happens during the process of facilitated diffusion?

Active Transport (page 189)

33. What is active transport?

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Section 7–4 The Diversity of Cellular Life (pages 190–193)

This section explains what cell specialization is. It also describes the four levels of organization in multicellular organisms.

Unicellular Organisms (page 190)

34. Circle the letter of each sentence that is true about unicellular organisms.
- a. Some types of algae are single-celled.
 - b. They include prokaryotes and eukaryotes.
 - c. Some even live within the human body.
 - d. They can grow but cannot reproduce.

Multicellular Organisms (page 191)

35. What is cell specialization in a multicellular organism?

Levels of Organization (pages 192–193)

36. What are four levels of organization in a multicellular organism?

37. What is a tissue?

38. What are the four main types of tissue in multicellular organisms?

39. What is the function of epithelial tissues?

40. Circle the letter of each type of connective tissue.

- a. blood b. skin c. bone d. lymph

41. Groups of tissues that work together to perform a specific function are called a(an)

42. What is an organ system?

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