Name_____

INSIDE THE CELL

CHAPTER 5 STUDY GUIDE

Section 5.1 Structure of Cells

In your textbook, read about unicellular and multicellular organisms.

Answer the following questions.

1. What is the difference between a unicellular organism and a multicellular organism?

2. Why must a unicellular organism be versatile?

3. Which type of organism-unicellular or multicellular-evolved first?

4. What is a specialized cell?

5. What type of organism needs specialized cells?

6. What are two examples of specialized cells in humans?

Complete the following table by checking the correct column for each example.

Example	Unicellular Organism	Multicellular Organism	Neither
7. human			
8.element			
9. bacteria			
10. amoeba			
11. glucose			
12. plant			
13. insect			

In your textbook, read about organization in living things.

14. Arrange and write the following terms in order from the simplest to the most complex: system cell organ community organism tissue _____

_____

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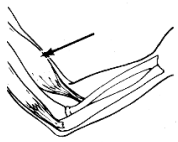
Section 5.1 Structure of Cells continued

15. Write each of the following words under its appropriate category title: *lung, plant, fish, circulatory, heart, liver, mouse, respiratory, dog, brain, digestive, nervous.*

Category: Organ	Category: System	Category: Organism
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

16. Write the term from Exercise 14 to identify each of the following illustrations.

a. 

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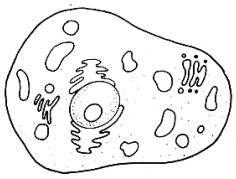
b. 

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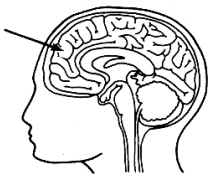
d. 

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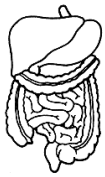
e. 

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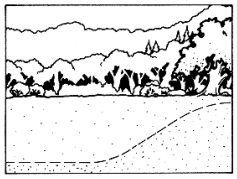
f. 

_____

In your textbook, read about cytoplasm and organization within cells.

Answer the following questions.

17. What name is given to the substance that fills living cells? Of what is it primarily composed?_____

18. What name is given to the specialized structures inside the cell? _____

19. What allows the specialized structures inside the cell to be separated from one another and from the cytoplasm? _____

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Section 5.2 Function and Interaction of Cell Parts

In your textbook, read about cell types and eukaryotic cell organelles.

Answer the following questions.

1. What is the primary difference between a eukaryote and a prokaryote?_____

_____

2. Bacteria are examples of what kind of cells?_____

3. What are four examples of eukaryotes?_____

_____

For each statement below, write <u>true</u> or <u>false.</u>

_____4. Since prokaryotes can synthesize protein, there are many more prokaryotes than there are eukaryotes.

_____5. The endoplasmic reticulum on which ribosomes are located is known as smooth ER.

_____6. When rough and smooth ER are connected, the smooth ER may help in transporting proteins that come from the rough ER.

_____7. Vesicles resemble one another in that they all contain the same type of enzyme.

_____8. Membranes present inside the cell are interchangeable.

_____9. Some eukaryotic cells do not require energy and so do not possess any mitochondria.

Determine if the statement is true. If it is not, rewrite the italicized part to make it true.

10. In eukaryotic cells, the control center is the nucleus, which *is not separated from the rest of the cell.*_____

11. To aid the nucleus in communicating with the rest of the cell, openings called pores allow *DNA to pass between the nucleus and the cytoplasm.*

_____

12. The RNA molecules produced in the *nucleus are known as nucleoli.*

_____

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Section 5.2 Function and Interaction of Cell Parts continued *In your textbook, read about other eukaryotic cell structures.*

Circle the letter of the choice that is the best response or that best completes the statement.

13. Organelles called plastids are found in
a. animals. b. amoebas. c. plants. d. ribosomes.

14. Green pigmented plastids that function in photosynthesis are called
a. chromosomes. b. compounds. c. mitochondria. d. chloroplasts.

15. An amoeba traps and takes in food through the process of a.
phagocytosis. b. exocytosis. c. respiration. d. photosynthesis.

16. Which organelles contain digestive enzymes that break down food? a.
ribosomes b. lysosomes c. mitochondria d. nucleoli

17. A fluid-filled, membrane-bound, structure that stores food, water, and minerals is called a a.
nucleus. b. plasma membrane. c. lysosome. d. vacuole.

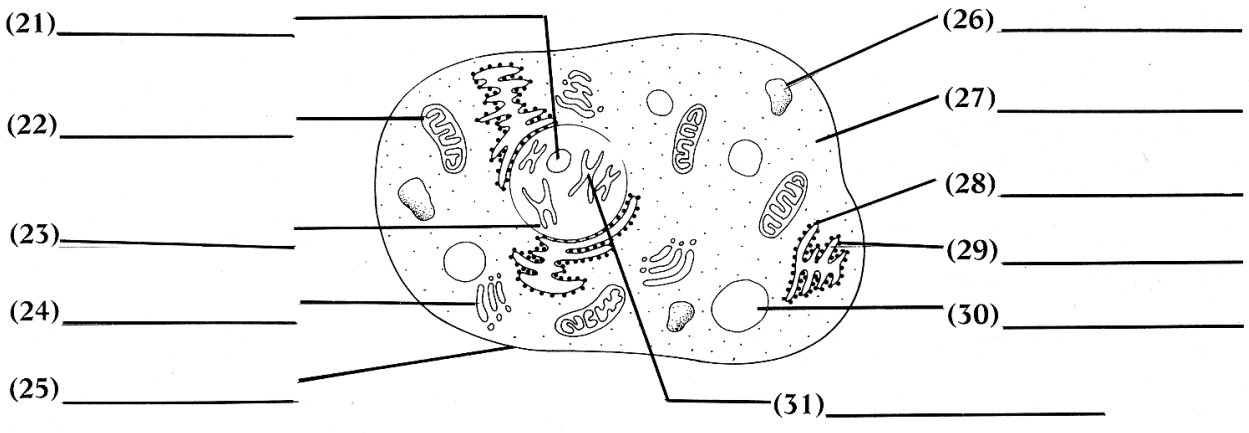
18. Which of these function to remove excess water in many unicellular freshwater protists?
a. plastids b. chloroplasts c. cell walls d. contractile vacuoles

19. The structure that provides a framework for the cell is the a. cilium.
b. flagellum. c. cytoskeleton. d. eukaryote.

20. Microfilaments and microtubules help some unicellular organisms
a. reproduce. b. move. c. eliminate wastes. d. digest food.

Label the parts of this eukaryote cell. Use these choices:

endoplasmic reticulum Goigi bodies lysosome vacuole
mitochondrion nucleus plasma membrane cytoplasm
chromosome nucleolus ribosome vacuole cytoplasm



Section 5.2 Function and Interaction of Cell Parts continued

Answer the following questions.

32. What are three cell organelles that work together?

_____

33. What type of biochemical compound is synthesized, transported, and packaged by the organelles you listed in Exercise 32?

_____

_____

34. Why are many membranes that are present in cells interchangeable? Give an example in your explanation.

_____

_____

35. Which organelles will probably be more abundant than others in an active eukaryotic cell? Explain.

_____

_____

In your textbook, read about evolution of eukaryotes.

Use each of the terms below just once to complete the passage:

evolution DNA nuclei prokaryotes mitochondria organelles symbiotic theory

The first organisms some believed evolved were (36)_____ These simple cells had no (37)_____. Today's bacteria also lack (38) _____ such as ER, Golgi bodies, and most other cell parts.

The explanation of how eukaryotes evolved from prokaryotes is called the (39)_____. It states that some time during the process of (40)_____, some prokaryotic cells were engulfed by other prokaryotic cells to become the ancestors of eukaryotes. Evidence for this explanation comes from having studied. (41)_____and chloroplasts. Both these organelles contain their own (42)_____, RNA, and ribosomes.

INSIDE THE CELL

Chapter 5 Vocabulary

Review the new words in Chapter* 5 *of your textbook.
Unscramble and define the terms below. Choose terms from the following list. Some of the terms in the list will not be used.

centriole	flagella	organ
chloroplast	Golgi body	prokaryote
chromatin	lysosome	ribosome
chromosome	metabolism	symbiosis
cilia	microfilament	system
cytoplasm	microtubule	tissue
endoplasmic	mitochondria	vacuole
reticulum	nucleoli	
eukaryote	nucleus	

1. clusenu_____

2. falegall _____

3. roombise_____

4. nimatroch_____

5. samplocty_____

6. embamtiols_____

7. uclevoa_____

8. grano_____

9. teporkaroy_____

10. terioclen_____

11. lapsochlort_____

12. arekeyuto_____