

Study Guide

CHAPTER 18 Section 1: Bacteria

In your textbook, read about the diversity of prokaryotes.

Respond to each statement.

1. **State** one way in which bacteria and archaea are different and one way in which they are the same.

2. **State** one way in which thermoacidophiles and halophiles are different and one way in which they are the same.

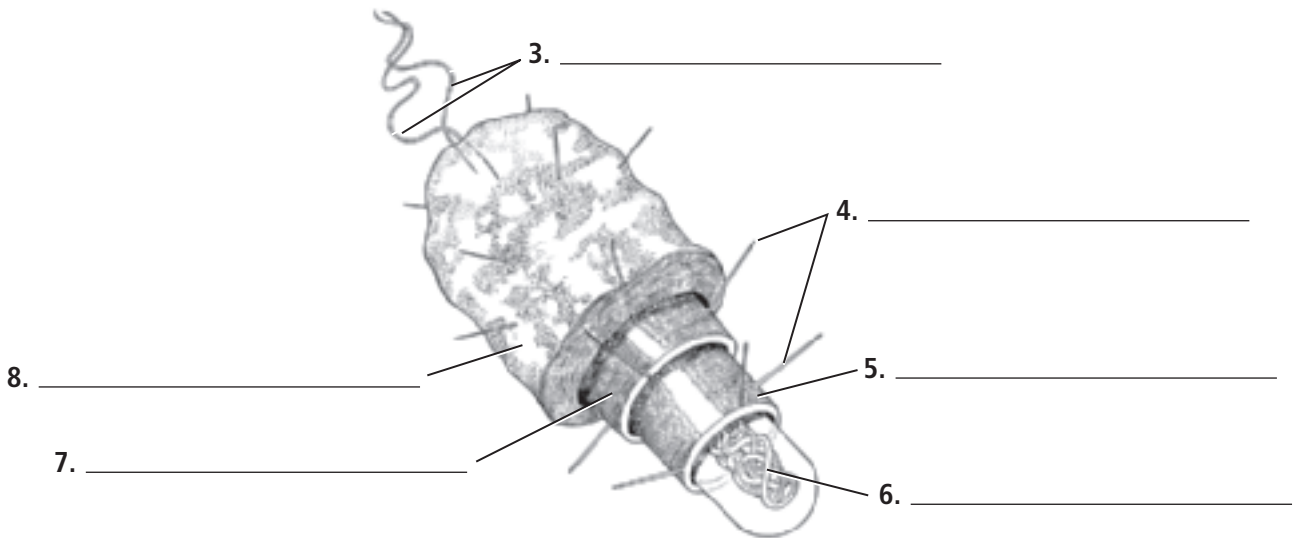
In your textbook, read about prokaryote structure.

Label the diagram of the bacterial cell. Use these choices:

capsule
flagella

cell wall
pili

chromosome
plasma membrane



Study Guide, Section 1: Bacteria continued

In your textbook, read about prokaryote structure, identifying prokaryotes, and survival of bacteria.

Match the definition in Column A with the term in Column B.

Column A	Column B
_____ 9. part of the composition of the cell walls of bacteria	A. nucleoid
_____ 10. dormant bacterial cell	B. plasmid
_____ 11. area of prokaryotic cell containing a large circular chromosome	C. peptidoglycan
_____ 12. small circular DNA in prokaryotic cell	D. endospore

Complete the table below by drawing each type of prokaryote.

Cocci	Bacilli	Spirochetes
13.	14.	15.

In your textbook, read about the ecology of bacteria.

Use each of the terms below only once to complete the passage.

- | | | | |
|-------------|-------------------|--------------|---------------|
| antibiotics | bacteria | decomposers | disease |
| nitrogen | nitrogen fixation | normal flora | symbiotically |
| vitamin K | yogurt | | |

Most (16) _____ are beneficial. Some bacteria are (17) _____ that return vital nutrients to the environment. Certain types of bacteria use (18) _____ gas directly and convert this gas into compounds that plants can use. This process is called (19) _____. Some bacteria called (20) _____ live in and on the human body. *Escherichia coli* live (21) _____ in the gut of humans and produce (22) _____, which humans need for blood clotting. Many food products, such as cheese and (23) _____, are made with the aid of bacteria. Other bacteria make (24) _____. A small percentage of bacteria can cause (25) _____.

Study Guide

CHAPTER 18

Section 2: Viruses and Prions

In your textbook, read about viruses and viral infection.

Match the definition in Column A with the term in Column B.

Column A	Column B
_____ 1. genetic material of a virus	A. virus
_____ 2. virus that causes the common cold	B. bacteriophage
_____ 3. nonliving particle that replicates inside a living cell	C. DNA or RNA
_____ 4. outer layer of virus made of proteins	D. capsid
_____ 5. nervous system disease	E. HIV
_____ 6. a virus that infects bacteria	F. rabies
_____ 7. a cell in which a virus replicates	G. host
_____ 8. a virus that is spread through sexual contact	H. Adenovirus

Complete the table by checking the correct column(s) for each description.

Description	Lytic Cycle	Lysogenic Cycle
9. Viral genes are expressed immediately after the virus infects the host cell.		
10. Many new viruses are assembled.		
11. This cycle is preceded by a virus entering a host cell.		
12. Viral DNA is integrated into the host cell's chromosome.		
13. Viruses are released from the host cell by lysis or exocytosis.		
14. The viral genes can remain dormant for months or years.		

Study Guide, Section 2: Viruses and Prions continued

In your textbook, read about retroviruses.

Use each of the terms below only once to complete the passage.

cancer-causing DNA host cell human immunodeficiency virus (HIV)
nucleus retrovirus reverse transcriptase RNA

Some disease-causing viruses have (15) _____ instead of DNA. This type of virus is called a (16) _____. The best-known virus of this type is (17) _____. Some (18) _____ viruses belong to this group. In the core of the virus is RNA and an enzyme called (19) _____, which is the enzyme that transcribes (20) _____ from viral RNA. Then DNA moves into the (21) _____ of a cell, and the (22) _____ manufactures and assembles new HIV particles.

In your textbook, read about viruses and prions.

Complete the table by checking the correct column(s) for each description.

Description	Viruses	Prions
23. Made of a protein		
24. Replicate in cells of organisms		
25. Made of a nonliving strand of genetic material		
26. Normally live in cells		
27. Cause infection and disease		
28. Cause proteins to mutate		
29. Attach to host cell and enter the cytoplasm		

If the statement is true, write true. If the statement is false, replace the italicized term or phrase to make it true.

30. Mutated prions are shaped like a *rod*.

31. A disease in cattle associated with prions is *mad cow disease*.

32. Abnormal prions cause nerve cells in the *heart* to burst.
