Name Date Class

Chapter 18 **Viruses and Bacteria**

Reinforcement and Study Guide

Section 18.1 Viruses

In your textbook, read about the characteristics of a virus.

For each item in Column A, write the letter of the matching item in Column B.

Column A		Column B
_____	**1.** Genetic material of a virus	**a.** virus
_____	**2.** Where a virus attaches to a host cell	**b.** T4 phage
_____	**3.** Nonliving particle that replicates inside a living cell	**c.** DNA or RNA
_____	**4.** A virus's protein coat	**d.** capsid
_____	**5.** Interlocks with a molecular shape in a host cell's plasma membrane	**e.** receptor site
_____	**6.** Layer that surrounds the capsid of some viruses	**f.** envelope
_____	**7.** A virus that infects *E. coli* bacteria	**g.** host
_____	**8.** A cell in which a virus replicates	**h.** attachment protein

In your textbook, read about viral replication cycles.

Complete the table by checking the correct column for each statement.

Statement	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. Reverse transcriptase is used to make DNA from the RNA of a retrovirus.		
15. A provirus is replicated along with the host cell's chromosome.		

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

DNA	**white blood cells**	**lysogenic**
lytic	**AIDS**	**proviruses**

Many disease-causing viruses have both lytic and **(16)** _____ cycles. For example, when HIVs infect **(17)** _____, the viruses enter a lysogenic cycle. Their genetic material becomes incorporated into the **(18)** _____ of the white blood cells, forming **(19)** _____. When this happens, the white blood cells still function normally, and the person may not appear ill. Eventually, the proviruses enter a **(20)** _____ cycle, killing the white blood cells. As a result, the person loses the ability to fight diseases and develops **(21)** _____.

In your textbook, read about viruses and cancer, plant viruses, and the origin of viruses.

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

_____ **22.** Some viruses can change normal cells to *tumor* cells.

_____ **23.** Retroviruses and the papilloma virus, which causes *hepatitis B*, are examples of tumor viruses.

_____ **24.** *All* plant viruses cause diseases in plants.

_____ **25.** The first virus ever identified was the plant virus called *tobacco mosaic vi*

_____ **26.** The patterns of color in some flowers are caused by *tumor* viruses.

_____ **27.** Tumor viruses contain genes that are found in *normal* cells.

_____ **28.** Scientists think viruses originated from *their host cells.*

Section 18.2 Archaebacteria and Eubacteria

In your textbook, read about the diversity of prokaryotes and about the characteristics of bacteria.

Answer the following questions.

1. What are three types of environments in which archaebacteria are found? _____

_____

2. In what three ways do eubacteria obtain nutrients? _____

_____

3. How does a bacterium's cell wall protect it? _____

_____

4. Where is the genetic material of a bacterium found? _____

_____

5. What structure do some bacteria use to move? _____

6. What is the difference between gram-positive bacteria and gram-negative bacteria? _____

_____

_____

_____

7. What are three different shapes of bacteria? _____

8. Describe the three growth patterns of bacteria and state the prefix used to identify each growth pattern.

_____

_____

Identify the type of bacterial reproduction described. Use these choices: binary fission, conjugation.

_____ **9.** Bacterium with a new genetic makeup is produced.

_____ **10.** Circular chromosome is copied.

_____ **11.** Genetic material is transferred through a pilus.

_____ **12.** Two identical cells are produced.

_____ **13.** Sexual reproduction occurs.

In your textbook, read about adaptations in bacteria and the importance of bacteria.

Circle the letter of the choice that best completes the statement.

14. Scientists think the first bacteria on Earth were
a. aerobic. **b.** anaerobic. **c.** fatal. **d.** oxygen-dependent.

15. Bacteria that are obligate anaerobes release energy from food by
a. cellular respiration. **b.** using oxygen.
c. using nitrogen. **d.** fermentation.

16. As an endospore, a bacterium
a. produces toxins. **b.** dries out. **c.** causes diseases. **d.** is protected.

17. Botulism is caused by endospores of *C. botulinum* that have
a. been killed. **b.** produced toxins.
c. germinated. **d.** reproduced.

18. Nitrogen is important because all organisms need it to make
a. proteins. **b.** ATP. **c.** DNA. **d.** all of these.

19. The process by which bacteria use enzymes to convert nitrogen gas into ammonia is called
a. nitrogenation. **b.** atmospheric separation.
c. nitrogen fixation. **d.** eutrophication.

20. Bacteria return nutrients to the environment by breaking down
a. dead organic matter. **b.** inorganic materials.
c. enzymes and sugar. **d.** nitrogen in legumes.

21. Bacteria are *not* used to make
a. vinegar. **b.** jams. **c.** cheese. **d.** yogurt.

22. Bacteria are responsible for the following diseases:
a. strep throat and tetanus. **b.** gonorrhea and syphilis.
c. tuberculosis and diphtheria. **d.** all of these.

23. Due to reduced death rates from bacterial diseases and improved sanitation and living conditions, the average person born in the United States today will live to be about
a. 25 years old. **b.** 50 years old.
c. 75 years old. **d.** 90 years old.