

SECTION 19-1 REVIEW

BACTERIA

VOCABULARY REVIEW Distinguish between the terms in each of the following groups of terms.

- 1. **chemoheterotroph, photoheterotroph** _____

- 2. **bacillus, coccus, spirillum** _____

- 3. **chemoautotroph, photoautotroph** _____

- 4. **Gram-positive bacteria, Gram-negative bacteria** _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. Which of the following terms is used to describe the rod-like shape of bacteria?
a. cocci b. bacilli c. spirilla d. filamentous
- _____ 2. One structure you would not find in a bacterial cell is a
a. cell wall. b. cell membrane. c. nucleus. d. chromosome.
- _____ 3. Which of the following is not a method of movement used by bacteria?
a. gliding through a layer of slime c. propulsion by flagella
b. producing a corkscrew-like motion d. expulsion of water from a contractile vacuole
- _____ 4. Archaeobacteria and eubacteria are placed in separate kingdoms because archaeobacteria
a. lack cell walls. c. evolved after eubacteria.
b. have cell walls that contain peptidoglycan. d. have cell walls that lack peptidoglycan.
- _____ 4. Which type of bacteria can live with or without the presence of oxygen?
a. only obligate anaerobes c. facultative anaerobes
b. only obligate aerobes d. all bacteria
- _____ 5. The process by which two living bacteria bind together and transfer genetic material is called
a. conjugation. b. transformation. c. transduction. d. encapsulation.

SHORT ANSWER Answer the questions in the space provided.

1. Why do some bacteria retain the Gram stain while others do not? (p.473) _____

2. What characteristics are predicted when a bacterium retains the Gram positive stain? (p.473) _____

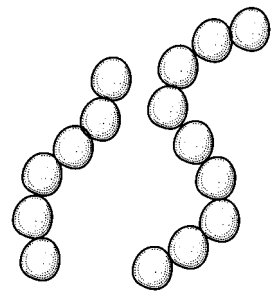
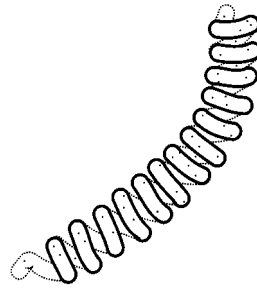
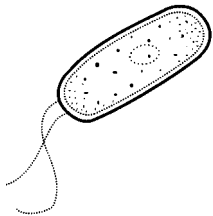
3. Identify two ecologically important characteristics of cyanobacteria. (pp.476-477) _____

4. Explain how aerobic organisms depended on the process of photosynthesis. (p.474) _____

5. What are methanogens, and where do they live? (p.472) _____

6. What are some characteristics of prokaryotes? (p.471) _____

STRUCTURES AND FUNCTIONS Label each drawing below with the most appropriate term from the following list: coccus, streptococcus, spirillum, and bacillus. (p.473)



1. _____
2. _____
3. _____
4. _____

SECTION 19-2 REVIEW

VIRUSES

VOCABULARY REVIEW Define the following terms.

- 1. **virus** _____

- 2. **capsid** _____

- 3. **retrovirus** _____

- 4. **lytic cycle** _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. Viruses can reproduce
 - a. independently of host cells.
 - b. independently of host cells if they first take up organelles from the host cells.
 - c. only within host cells.
 - d. only with the assistance of other viruses.
- _____ 2. Many viruses infect only a certain type of cell because they recognize
 - a. receptor sites on the cell's surface.
 - b. a particular sequence of nucleotides in the cell's genome.
 - c. the shape of the cell.
 - d. other viruses of the same kind inside the cell.
- _____ 3. During the lytic cycle,
 - a. a virus replicates within the host cell for an extended time without killing the cell.
 - b. the host cell's genome is incorporated into the viral capsid.
 - c. a virus replicates within the host cell and soon after kills it.
 - d. one of the enzymes coded for by the viral genome causes the host cell to disintegrate.
- _____ 4. During the lysogenic cycle,
 - a. a virus causes the immediate lysis of the host cell.
 - b. the viral DNA is integrated into the host cell's DNA.
 - c. viral DNA remains within the capsid on the surface of the host cell.
 - d. radiation causes the host cell to become virulent.

SHORT ANSWER Answer the questions in the space provided.

1. Identify two structures that are characteristic of viruses. (pp.478-479) _____

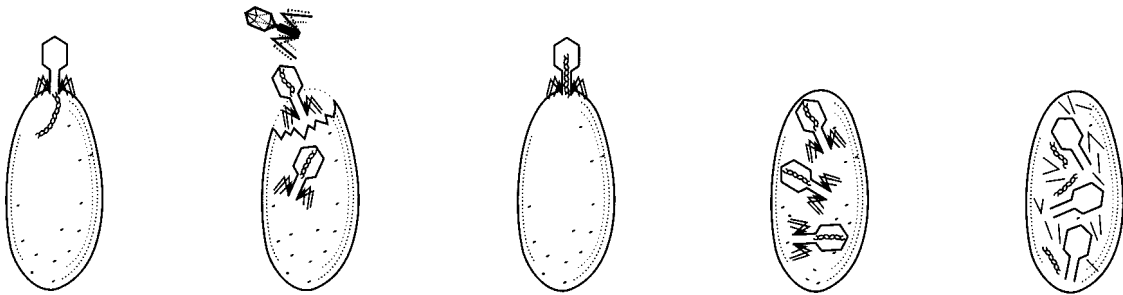
2. Are viruses alive? Explain your answer. (pp.482-483) _____

3. What happens when retroviruses infect a cell? (p.482) _____

4. What are bacteriophages? (p.479) _____

STRUCTURES AND FUNCTIONS The diagrams below represent the five steps in the lytic cycle of a bacteriophage. The order of the drawings has been scrambled. Label the drawings by using the terms below, then arrange the steps in their correct order and briefly describing what is happening in each step. Use the following terms: *assembly*, *replication*, *attachment*, *entry*, and *release*.

- 1st _____
- 2nd _____
- 3rd _____
- 4th _____
- 5th _____



- a.** _____ **b.** _____ **c.** _____ **d.** _____ **e.** _____

SECTION 19-3 REVIEW

DISEASES CAUSED BY BACTERIA AND VIRUSES

VOCABULARY REVIEW Define the following terms.

- 1. **viroid** _____

- 2. **prion** _____

- 3. **pathogen** _____

- 4. **vaccine** _____

- 5. **antibiotic** _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. Antibiotics are compounds that can
 - a. disrupt a virus’s normal metabolism.
 - b. interfere with the reproduction of a virus.
 - c. control a viral infection.
 - d. block the growth and reproduction of bacteria.
- _____ 2. Viruses have more difficulty entering plant cells than animal cells because
 - a. plant cells have tough cell walls.
 - b. animal cells have no membranes.
 - c. nitrogen fixation harms plant cells.
 - d. animal cells have a weaker cell wall.
- _____ 3. A viroid is an infectious particle that contains only
 - a. DNA.
 - b. protein.
 - c. RNA.
 - d. ATP.
- _____ 4. A prion is an infectious particle that contains only
 - a. DNA.
 - b. protein.
 - c. RNA.
 - d. ATP.
- _____ 5. What can a vaccine do when it is injected into the body?
 - a. prompt the body to produce immunity to a disease
 - b. produce toxins that disrupt bacterial metabolism
 - c. use bacterial cells for food
 - d. destroy new pathogens as they arise in the body

SHORT ANSWER Answer the questions in the space provided.

1. How are the causes of tuberculosis and strep throat different? (p.488) _____

2. Explain the four ways to prevent and control bacterial disease or growth. (pp.486-487) _____

3. Name four viruses that can cause diseases that are often fatal. (p.488) _____

4. What is the difference between a viroid and a prion? (p.490) _____

5. What are the two general ways that bacteria cause disease? (p.485) _____

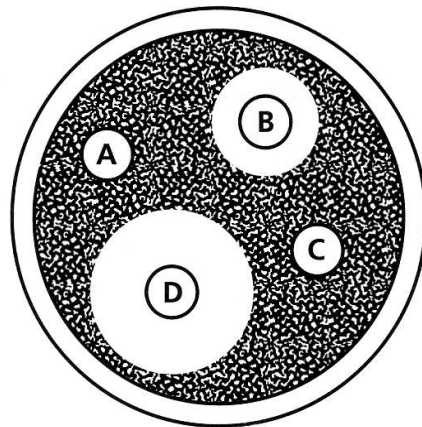
STRUCTURES AND FUNCTIONS The diagram below shows a Petri dish containing a bacterial culture and four paper disks (labeled A - D) treated with different antibiotics. The concentration of all four antibiotics are the same. Dark areas on the dish indicate bacterial growth, and clear areas indicate inhibition of bacterial growth. State whether the bacteria in this culture are **very sensitive**, **moderately sensitive**, or **insensitive** to each antibiotic. Explain your answer. (p.486)

- A. _____

- B. _____

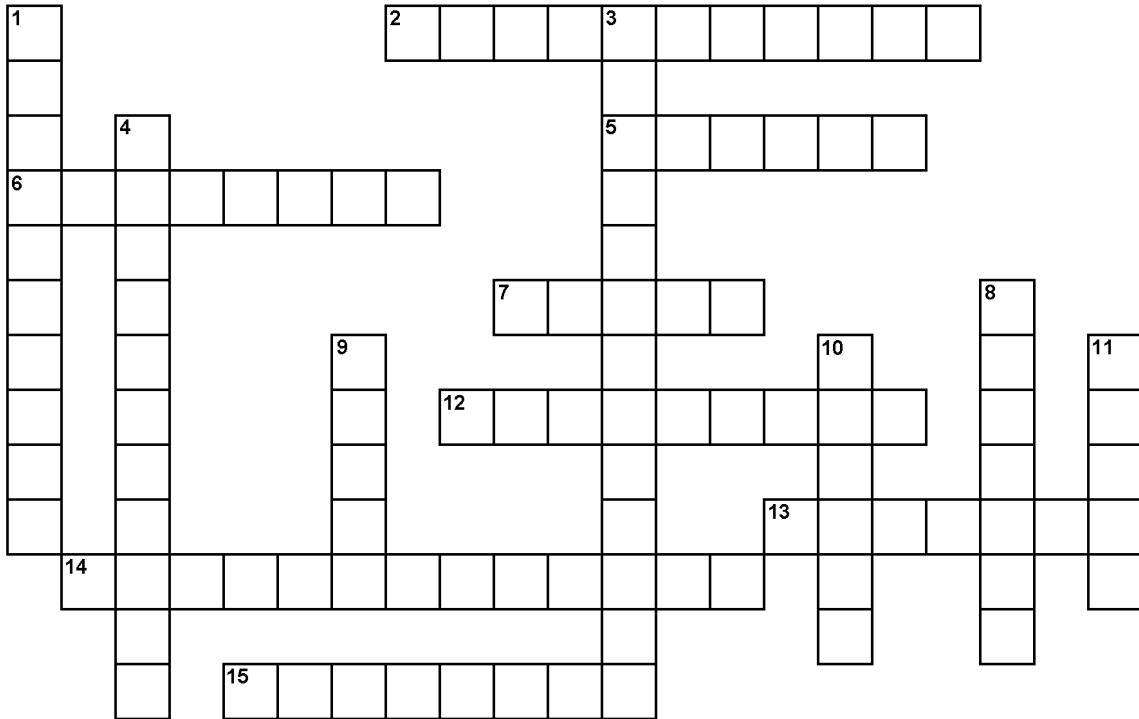
- C. _____

- D. _____



VOCABULARY - CHAPTER 19

The crossword puzzle is a simple way to master some of the more important vocabulary terms in this chapter.



Across

2. drugs that are not effective in viral-disease prevention or treatment
5. the protein covering of a virus
6. place where a virus attaches to a host cell
7. a biologically active particle composed of nucleic acid and proteins
12. the viral nucleic acid becomes integrated into the host cell's DNA during the _____ reproductive cycle
13. Wendell Stanley is best known for his work with the _____ mosaic virus
14. reverse _____ is an enzyme that forms a DNA copy from an RNA copy
15. a membrane on the outside of some viruses that was created when the virus left the infected host cell

Down

1. HIV is a _____ ; it has RNA as its nucleic acid and an enzyme that copies RNA into DNA
3. a virus that attacks or infects bacteria
4. a viral shape made from 20 triangular pieces
8. a virus that has a _____ structure would appear as a spiral shape
9. the _____ cycle occurs when a virus invades and destroys a host cell soon after its entry
10. an infectious RNA molecule that affects plants
11. an infectious protein that is responsible for some diseases like Mad Cow's disease

The following words are **not** in this chapter. Use a reference book and look up the meanings to them. **receptor, transcriptase, envelope, icosahedron, and helical.**