

Active Reading

Section: Viruses

Read the passage below. Then answer the questions that follow.

Viruses are **pathogens**—agents that cause disease. Viruses lack the enzymes necessary for metabolism and have no structures to make proteins. Therefore, viruses must rely on living cells for replication. Before a virus can replicate, it must first infect a living cell.

In bacterial viruses, the cycle of viral infection, replication, and cell destruction is called the **lytic cycle**. After the viral genes have entered the cell, they use the host cell to replicate viral genes and to make viral proteins, such as capsids. The proteins are then assembled with the replicated viral genes to form complete viruses. The host cell is broken open and releases newly made viruses.

During an infection, some viruses stay inside the cells but do not make new viruses. Instead of producing virus particles, the viral gene is inserted into the host chromosome and is called a **provirus**. Whenever the cell divides, the provirus also divides, resulting in two infected host cells. In this cycle, called the **lysogenic cycle**, the viral genome replicates without destroying the host cell.

SKILL: READING EFFECTIVELY

Read each question, and write your answer in the space provided.

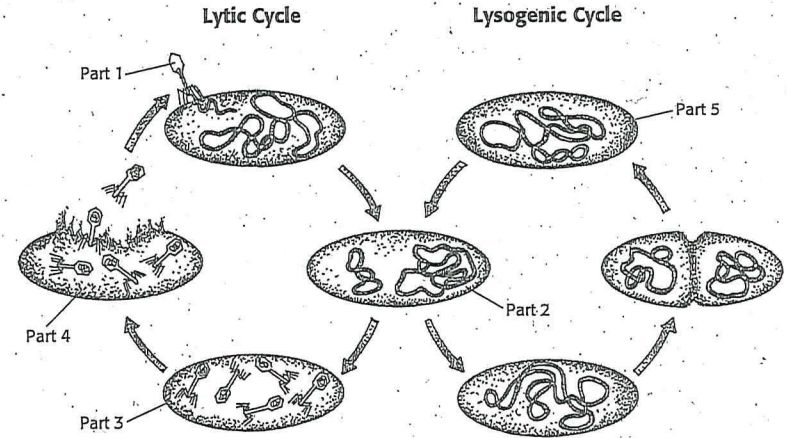
1. Why must viruses rely on living cells for replication?

2. What relationship exists between viruses and pathogens?

3. What sentence expresses the main idea of the second paragraph?

SKILL: INTERPRETING GRAPHICS

The figure below shows the lytic and lysogenic cycles. In the spaces provided, describe what is occurring in each numbered part of the figure.



4. Part 1: _____

5. Part 2: _____

6. Part 3: _____

7. Part 4: _____

8. Part 5: _____

In the space provided, write the letter of the phrase that best completes the statement.

- _____ 9. Viruses cause damage when they
- a. invade cells.
 - b. replicate inside cells.
 - c. remain inside a host cell.
 - d. Both (a) and (b)