Name _____

Adaptability of Bacteria and Viruses Answer Key

1. Yes, transduction is a process in which bacteria can transfer genetic material from one bacterium to another using viruses called bacteriophages.

2. Some bacteria are capable of chemosynthesis, a process in which they obtain energy by oxidizing inorganic compounds, such as hydrogen sulfide or ammonia.

3. No, viruses are typically specific to either animal cells or plant cells. There are different viruses that infect animals and plants.

4. Ribosomes in bacteria are responsible for protein synthesis, where they translate the genetic information in mRNA into specific amino acid sequences.

5. Yes, some viruses can enter a dormant state called latency, where they integrate their genetic material into the host cell's genome and remain silent for extended periods.

6. Yes, some bacteria can produce and release exotoxins, which are toxic substances that can cause damage to host cells or tissues.

7. Viruses recognize their host cells by attaching to specific receptors on the surface of the host cell. These receptors are often proteins or other molecules.

8. Yes, bacteria can form symbiotic relationships with other organisms, such as mutualistic relationships where both the bacteria and the host benefit.

9. Yes, certain viruses, called archaeal viruses or archaeophages, can infect and replicate within archaeal cells.

10. Yes, bacteria can develop resistance to antibiotics through genetic mutations or the acquisition of resistance genes, leading to the evolution of antibiotic-resistant strains.