Name _____

Structures of Bacteria and Viruses Answer Key

1. Bacteria are living organisms composed of a single cell, whereas viruses are non-living particles made up of genetic material wrapped in a protein coat.

2. Bacteria are generally larger than viruses. While bacteria can range from 0.2 to 10 micrometers in size, viruses are much smaller, typically measuring between 20 and 300 nanometers.

3. Bacteria reproduce asexually through a process called binary fission, where one parent cell divides into two identical daughter cells.

4. No, viruses cannot reproduce on their own. They require a host cell to replicate and produce more viruses.

5. Antibiotics target specific structures or processes in bacteria, such as cell wall synthesis or protein production, disrupting their growth and killing them.

6. Bacteriophages are viruses that infect bacteria. They have a head containing genetic material (DNA or RNA) and a tail used for attaching to and injecting their genetic material into bacterial cells.

7. A viral capsid is the protein coat that surrounds the genetic material of a virus. It provides protection and helps the virus attach to host cells.

8. The reproductive cycle of a virus is called the lytic cycle. It involves the virus attaching to a host cell, injecting its genetic material, replicating inside the cell, and then causing the cell to burst (lyse), releasing new viral particles.

9. Some common bacterial diseases include strep throat, tuberculosis, urinary tract infections, and pneumonia.

10. Yes, vaccines can protect against both bacteria and viruses. For example, vaccines for diseases like tetanus and diphtheria target bacterial toxins, while vaccines for diseases like measles and influenza target viral proteins.