

Name _____

Microbiology Facts Answer Key

1. Bacteria are single-celled organisms that can survive independently, while viruses are non-living particles that require a host cell to reproduce.
2. Bacteria are generally larger than viruses. Bacteria can range in size from 0.2 to 10 micrometers, whereas viruses are much smaller, typically ranging from 20 to 300 nanometers.
3. Yes, bacteria are prokaryotic organisms, which means they lack a true nucleus. Their genetic material floats freely in the cytoplasm.
4. No, viruses cannot reproduce on their own. They must invade a host cell and hijack its cellular machinery to replicate.
5. Bacteria reproduce through a process called binary fission, where one bacterium divides into two identical daughter cells.
6. Yes, bacteria can be found in various environments, including soil, water, air, and even inside the human body.
7. No, not all bacteria are harmful. In fact, many bacteria are beneficial and play important roles in human health, such as aiding digestion and producing vitamins.
8. No, antibiotics are only effective against bacterial infections. They do not work against viral infections.
9. No, viruses are not considered living organisms because they lack cellular structure and cannot carry out metabolic processes on their own.
10. Yes, bacteria can develop resistance to antibiotics through genetic mutations or the acquisition of resistance genes. This poses a significant challenge in treating bacterial infections.