

Microbiology Learning Objectives C6  
Microbial Growth

1. What is the temperature range for most bacteria (given in the Celsius scale)? How will the temperatures above or below this range affect bacterial growth?
2. What is the most common method of preserving household food supplies?
3. How is the pH of a culture media controlled?
4. What is plasmolysis? How may this be used to control bacterial growth? Example?
5. What is nitrogen fixation?
6. How are microbes classified on the basis of oxygen requirements? Obligate aerobes? Facultative anaerobes? Obligate anaerobes?
7. How do aerobes avoid damage caused by toxic forms of oxygen?
8. What is a biofilm? How do biofilms form? Why are biofilms a problem in medicine? What is the most common biofilm in humans?
9. What is the purpose of a culture medium? What do we call the isolated areas of bacterial growth on a solid growth medium?
10. What terms are used to describe bacterial growth?
11. What two things must be provided by the growth medium to support bacterial growth?
12. Can all bacteria be grown on artificial laboratory media? Explain.
13. What is the difference between selective and differential media?
14. Explain how the streak plate method can be used to isolate a pure culture?
15. Will freezing kill a bacteria? What is the difference between deep-freezing and lyophilization (freeze drying)?
16. What is binary fission? What organisms use binary fission?
17. What is the difference between direct and indirect methods of measuring cell growth?

18. How do hypertonic solutions of salt or sugar preserve food?
19. What occurs to bacterial growth at the log, stationary, and death phases?
20. What pH do most bacteria prefer?
21. When is penicillin most effective? Why?
22. What is bacterial generation time?