

# Chapter 1

# Test Answers

b  
Recall

1. Which of the following pairs is mismatched?
  - a. Ehrlich—chemotherapy
  - b. Koch—aseptic surgery
  - c. Pasteur—proof of biogenesis
  - d. Jenner—vaccination

d  
Analysis

2. Which of the following is a scientific name?
  - a. IGAS
  - b. Flesh-eating bacteria
  - c. Group A streptococcus
  - d. *Streptococcus pyogenes*
  - e. Streptococci

a  
Recall

3. Which of the following is *not* a kingdom in the five-kingdom system?
  - a. Virus
  - b. Monera
  - c. Fungi
  - d. Plant
  - e. Animal

c  
Recall

4. Which of the following is true about fungi?
  - a. All are procaryotic.
  - b. All are multicellular.
  - c. All require organic material for growth.
  - d. All grow using sunlight and carbon dioxide.
  - e. All are plants.

a  
Recall

5. Which of the following is *not* true about protozoa?
  - a. They have rigid cell walls.
  - b. They are classified by their method of locomotion.
  - c. All are unicellular.
  - d. All have complex cells.
  - e. All are eucaryotic.

e  
Recall

6. Which of the following is true about viruses?
  - a. They are not composed of cells.
  - b. They cannot metabolize nutrients.
  - c. They cannot reproduce themselves.
  - d. They have DNA or RNA.
  - e. All of the above.

d  
Analysis

7. Which of the following is probably true about all the experiments that proved spontaneous generation?
- Air was lacking.
  - Too much heat was applied.
  - The food source could not support life.
  - Microorganisms were already present.
  - All of the above.

e  
Understanding

8. Regarding Pasteur's experiments with the S-neck flask, which of the following statements is true?
- There was air involved.
  - There was a food source involved.
  - Any possibility of contamination was removed.
  - All microorganisms were killed before beginning.
  - All of the above.

c  
Analysis

9. Which of the following is true about insect control by microorganisms?
- The insects develop resistance to the microorganisms.
  - The microorganisms are permanent in the environment.
  - The microorganisms are specific for the insect pest.
  - The microorganisms may cause disease in other animals.
  - This technique is just as dangerous as the use of chemical pesticides.

b  
Recall

10. Which of the following pairs is mismatched?
- Hooke—cell theory
  - van Leeuwenhoek—germ theory
  - Lister—aseptic surgery
  - Pasteur—fermentation
  - None of the above

Recall

Match the following choices to questions 11 through 14. Choices may be used once, more than once, or not at all.

- van Leeuwenhoek
- Hooke
- Pasteur
- Koch
- None of the above

c

11. Disproved the theory of spontaneous generation.

b

12. Observed cells in plant material.

a

13. First to observe microorganisms with a microscope.

d

14. Proved that microorganisms cause disease.

a  
Recall

15. Which of the following is a scientific name?  
 a. *Mycobacterium leprae*  
 b. Hansen's bacillus

b  
Analysis

16. Which of the following is *not* a kingdom in the five-kingdom system?  
 a. Monera  
 b. Algae  
 c. Protista  
 d. Plant  
 e. Animal

b  
Analysis

17. Which of the following statements is untrue?  
 a. All bacteria lack nuclear membranes.  
 b. All fungi are multicellular.  
 c. All protozoa are unicellular.  
 d. All viruses are parasites.  
 e. All fungi have nuclear membranes.

a  
Recall

18. Which of the following statements is true?  
 a. Viruses cannot reproduce outside of a host cell.  
 b. Bacteria cannot move.  
 c. Fungi are plants.  
 d. Protozoa have rigid cell walls.  
 e. Algae are parasites.

a  
Analysis

19. Which of the following findings was essential for Jenner's vaccination process?  
 a. A weakened microorganism may produce immunity.  
 b. A weakened microorganism will not cause disease.  
 c. Someone who recovers from a disease will not acquire that disease again.  
 d. Disease is caused by viruses.  
 e. Vaccination provides immunity.

e  
Analysis

20. Which of the following requirements was necessary for Pasteur to disprove spontaneous generation?  
 a. Providing a food source that would support growth  
 b. Supplying air  
 c. Keeping microorganisms out  
 d. Removing microorganisms that were initially present  
 e. All of the above

a  
Analysis

21. Which of the following pairs is mismatched?  
 a. Immunologist—studies ecology of *Legionella pneumophila*  
 b. Virologist—studies human immunodeficiency virus  
 c. Microbial ecologist—studies bacteria that degrade oil  
 d. Microbial physiologist—studies fermentation of sourdough bread  
 e. Molecular biologist—studies recombinant DNA

e  
Recall

22. Which of the following pairs is mismatched?
- a. Chemotherapy—treatment of disease
  - b. Pathogen—disease causing
  - c. Vaccine—a preparation of microorganisms
  - d. Penicillin—antibiotic
  - e. Normal microbiota—harmful

d  
Recall

23. Which of the following is *not* part of the study of microbiology?
- a. Bacteria
  - b. Fungi
  - c. Viruses
  - d. Insects
  - e. Helminths

c  
Recall

24. Sourdough bread differs from conventional bread during leavening because
- a. Yeasts produce carbon dioxide and ethyl alcohol.
  - b. Yeasts produce acid.
  - c. *Lactobacillus* produces acids.
  - d. Acids are added to it during rising.
  - e. Of the temperature and humidity.

e  
Analysis

25. Which of the following is *not* an example of biotechnology?
- a. Bacterial production of French bread
  - b. Bacterial degradation of a dead animal
  - c. Bacterial production of yogurt
  - d. Bacterial production of vinegar
  - e. None of the above

d  
Understanding

26. Genetic engineering can be used to make all of the following *except*
- a. Vaccines.
  - b. Human hormones.
  - c. Drugs.
  - d. Life.
  - e. None of the above.

b  
Analysis

27. The best definition of biotechnology is
- a. The development of genetic engineering.
  - b. The use of living organisms to make desired products.
  - c. Curing diseases.
  - d. The use of microorganisms in sewage treatment.
  - e. All of the above.

a  
Analysis

28. You are observing a cell through a microscope and note that it has no apparent nucleus. You conclude that it most likely
- a. Has a peptidoglycan cell wall.
  - b. Has a cellulose cell wall.
  - c. Moves by pseudopods.
  - d. Is part of a multicellular animal.
  - e. None of the above.

## Recall

Use the following choices to answer questions 29 through 32. Choices may be used once, more than once, or not at all.

- a. Alga
- b. Bacterium
- c. Fungus
- d. Helminth
- e. Virus

a

29. A nucleated, green cell that moves by means of flagella.

e

30. An agent that reproduces in cells but is not composed of cells and contains RNA as its genetic material.

c

31. A multicellular organism that has chitin cell walls and absorbs organic material.

d

32. A multicellular organism that has a mouth and lives in an animal host.

d

## Analysis

33. In the name *Escherichia coli*, *coli* is the

- a. Kingdom.
- b. Family.
- c. Genus.
- d. Specific epithet.
- e. None of the above.

b

## Recall

34. Which of the following pairs is mismatched?

- a. Lancefield—immunology
- b. Weizmann—virology
- c. Dubos—antibiotics
- d. Jacob and Monod—microbial genetics
- e. Winogradsky—microbial ecology

b

## Analysis

35. Which of the following does *not* belong with the others?

- a. Recycling elements
- b. Human diseases
- c. Sewage treatment
- d. Bioremediation
- e. Insect control

d

## Analysis

36. You are looking at a white cottony growth on a culture medium. Microscopic examination reveals it is multicellular. You can conclude all of the following about this organism *except* that it

- a. Has cell walls.
- b. Has DNA enclosed in a nucleus.
- c. Is eucaryotic.
- d. Is a bacterium.
- e. Absorbs organic nutrients.

e  
Recall

37. All members of the following groups contain DNA *except*
- a. Bacteria.
  - b. Fungi.
  - c. Helminths.
  - d. Protozoa.
  - e. Viruses.

c  
Understanding

38. Which one of the following does *not* belong with the others?
- a. Cellulose
  - b. Chitin
  - c. Nucleus
  - d. Peptidoglycan

a  
Recall

39. All of the following have cell walls *except*
- a. Animalia.
  - b. Eubacteria.
  - c. Fungi.
  - d. Plantae.
  - e. None of the above.

c  
Understanding

40. Which of the following does *not* belong with the others?
- a. Animalia
  - b. Fungi
  - c. Helminth
  - d. Plantae
  - e. Protista

c  
Analysis

41. Fungi differ from bacteria because fungi
- a. Have cell walls.
  - b. Have DNA.
  - c. Have a nucleus.
  - d. Spoil food.
  - e. None of the above.

a  
Analysis

42. Archaea differ from eubacteria because archaea
- a. Lack peptidoglycan.
  - b. Lack nuclei.
  - c. Use organic compounds for food.
  - d. Reproduce by binary fission.
  - e. None of the above.

d  
Analysis

43. Bacteria differ from viruses because bacteria
- a. Have DNA and RNA.
  - b. Have cells.
  - c. Can live without a host.
  - d. All of the above.