

Chapter 01: Scope of Microbiology
VanMeter: Microbiology for the Healthcare Professional, 2nd Edition

MULTIPLE CHOICE

1. In the sixteenth century a father-and-son team, by the name of _____, produced a compound microscope consisting of a simple tube with lenses at each end.
- van Leeuwenhoek
 - Semmelweis
 - Janssen
 - Hooke

ANS: C REF: p. 3

2. "Animalcules" were first described by
- Robert Hooke.
 - Antony van Leeuwenhoek.
 - Hans Janssen.
 - John Needham.

ANS: B REF: p. 3

3. *Micrographia*, a publication illustrating insects, sponges, as well as plant cells, was published by
- Robert Hooke.
 - Antony van Leeuwenhoek.
 - Hans Janssen.
 - John Needham.

ANS: A REF: p. 3

4. Low-power microscopes designed for observing fairly large objects such as insects or worms are
- electron microscopes.
 - dark-field microscopes.
 - fluorescence microscopes.
 - stereomicroscopes.

ANS: D REF: p. 5

5. A microscope that provides a three-dimensional image of a specimen is a
- dark-field microscope.
 - transmission electron microscope.
 - bright-field microscope.
 - scanning electron microscope.

ANS: D REF: p. 7

6. The tool of choice to observe living microorganisms is the
- bright-field microscope.
 - phase-contrast microscope.

- c. fluorescence microscope.
- d. electron microscope.

ANS: B REF: p. 6

7. Which scientist is most responsible for ending the controversy about spontaneous generation?
- a. John Needham
 - b. Joseph Lister
 - c. Louis Pasteur
 - d. Robert Koch

ANS: C REF: p. 8

8. Fossils of prokaryotes go back _____ billion years.
- a. 4.0 to 5.0
 - b. 3.5 to 4.0
 - c. 2.5 to 3.0
 - d. 2.2 to 2.7

ANS: B REF: p. 9

9. Molds belong to which of the following groups of eukaryotic organisms?
- a. Protozoans
 - b. Archaea
 - c. Fungi
 - d. Algae

ANS: C REF: p. 11

10. The correct descending order of taxonomic categories is
- a. species, domain, phylum, kingdom, order, division, class, genus.
 - b. domain, kingdom, phylum, class, family, order, genus, species.
 - c. domain, kingdom, phylum, class, order, family, genus, species.
 - d. kingdom, domain, phylum, order, class, family, genus, species.

ANS: C REF: p. 10

11. Complex communities of microorganisms on surfaces are called
- a. colonies.
 - b. biofilms.
 - c. biospheres.
 - d. flora.

ANS: B REF: p. 12

12. A relationship between organisms in which the waste product of one provides nutrients for another is called
- a. mutualism.
 - b. competition.
 - c. synergism.
 - d. commensalism.

ANS: D REF: p. 12

13. Which of the following sites of the human body does not have a normal flora?
- Intestine
 - Skin
 - Vagina
 - Blood

ANS: D REF: p. 12

14. Which of the following lack nucleic acids?
- Archaea
 - Viruses
 - Prions
 - Bacteria

ANS: C REF: p. 11

15. The binominal system of nomenclature was originally developed by
- Pasteur.
 - Linnaeus.
 - Martini.
 - Jenner.

ANS: B REF: p. 11

16. Which of the following scientists performed the first vaccination against smallpox?
- Pasteur
 - Jenner
 - Semmelweis
 - Koch

ANS: B REF: p. 9

17. Which of the following diseases is generally caused by contaminated food?
- Mumps
 - Shigellosis
 - Legionellosis
 - Tuberculosis

ANS: B REF: p. 13

18. Which of the following diseases is transmitted via aerosols?
- Psittacosis
 - Shigellosis
 - Leptospirosis
 - Giardiasis

ANS: A REF: p. 14

19. Which of the following organisms is used in the production of cheese?
- Propionibacterium shermanii*
 - Acetobacter aceti*
 - Giardia*

d. *Fusobacterium*

ANS: A REF: p. 14

20. Which of the following scientists discovered the antibiotic properties of *Penicillium*?
- a. Alexander Fleming
 - b. Louis Pasteur
 - c. Joseph Lister
 - d. Edward Jenner

ANS: A REF: p. 15

COMPLETION

1. In a compound light microscope the lens closest to the eye is the _____ lens.

ANS: ocular

REF: p. 3

2. The total magnification of an object viewed with a compound microscope with an ocular lens of $\times 10$ and an objective lens of $\times 40$ is \times _____.

ANS: 400

REF: p. 4

3. Another term for spontaneous generation is _____.

ANS: abiogenesis

REF: p. 7

4. Microorganisms of various species are often organized into complex communities on a surface and are called _____.

ANS: biofilms

REF: p. 12

5. All bacteria are _____ cells.

ANS: prokaryotic

REF: p. 10

6. Cells that contain a nucleus are _____ cells.

ANS: eukaryotic

REF: p. 10

7. The taxonomic resource for information on bacteria is _____.

ANS: *Bergey's Manual of Systematic Bacteriology*

REF: p. 11

8. A relationship in which two organisms benefit is referred to as _____.

ANS: mutualism

REF: p. 12

9. The proteins implicated in spongiform encephalopathy are _____.

ANS: prions

REF: p. 11

10. The cleanup of various industrial wastes by living organisms is referred to as _____.

ANS: bioremediation

REF: p. 15

MATCHING

Match the description below with the correct item from this list.

- a. Observing insects
- b. Three-dimensional images
- c. Cytoplasmic streaming
- d. Fluorescent dye
- e. Ultrathin sectioned specimens

- 1. Scanning electron microscope
- 2. Phase-contrast microscope
- 3. Transmission electron microscope
- 4. Stereomicroscope

- 1. ANS: B REF: p. 7
- 2. ANS: C REF: p. 6
- 3. ANS: E REF: p. 7
- 4. ANS: A REF: p. 5

Match the description below to the correct name from this list.

- a. Robert Koch
- b. Edward Jenner
- c. Louis Pasteur
- d. John Needham
- e. Joseph Lister
- f. Antony van Leeuwenhoek

5. Animalcules
6. Vaccination
7. Aseptic technique
8. Germ theory of disease

- | | |
|-----------|------------------|
| 5. ANS: F | REF: p. 7 p. 8 |
| 6. ANS: B | REF: p. 9 |
| 7. ANS: E | REF: p. 9 |
| 8. ANS: C | REF: p. 8 |