

# TEST BANK

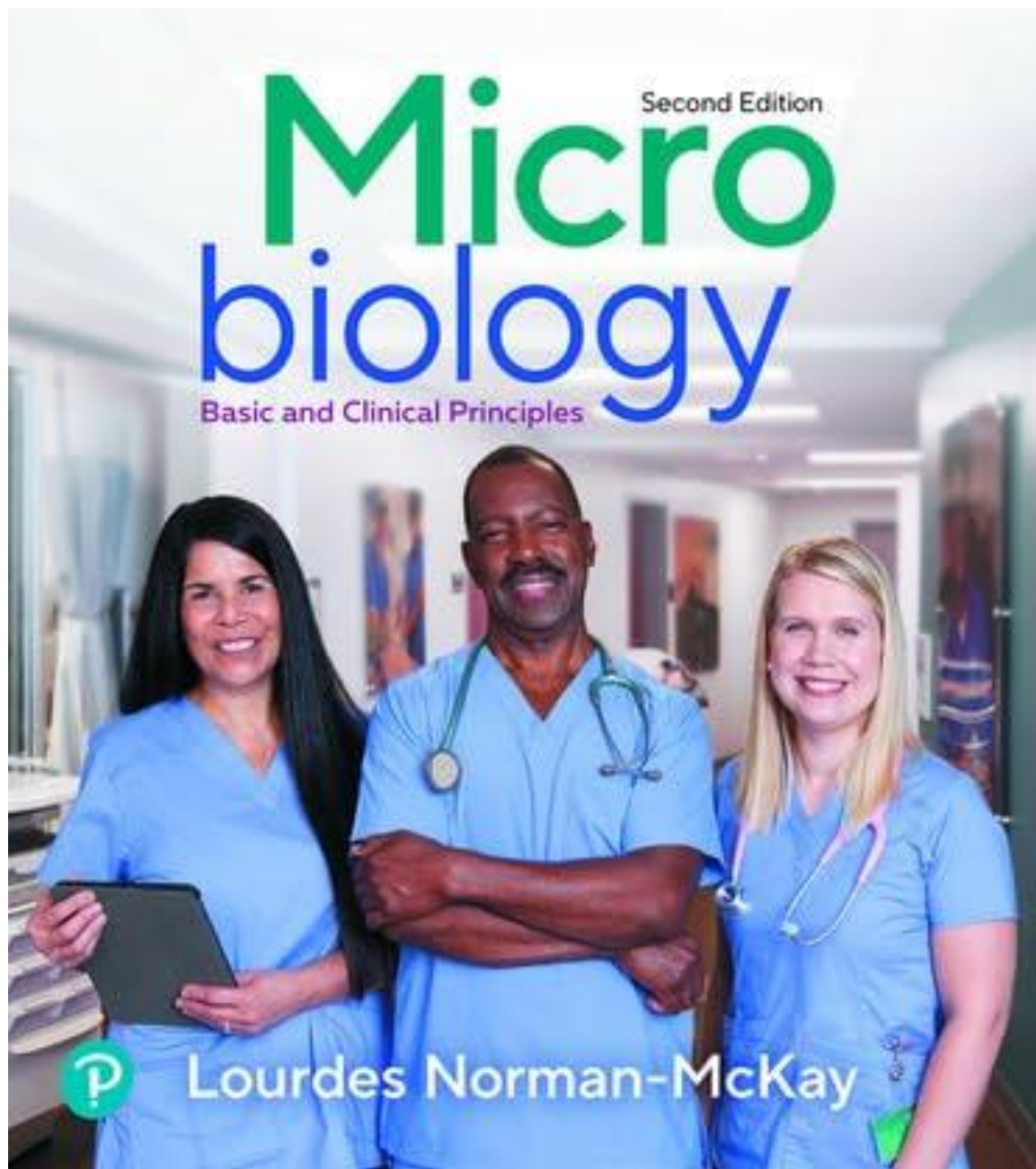
# Microbiology

Basic and Clinical Principles

Lourdes P. Norman-McKay

---

**2<sup>nd</sup> Edition**



## **Table of Contents**

- 1.Introduction to Microbiology
- 2.Biochemistry Basics
- 3.Introduction to Prokaryotic Cells
- 4.Introduction to Eukaryotic Cells
- 5.Genetics
- 6.Viruses and Prions
- 7.Fundamentals of Microbial Growth and Decontamination
- 8.Microbial Metabolism
- 9.Principles of Infectious Disease and Epidemiology
- 10.Host-Microbe Interactions and Pathogenesis
- 11.Innate Immunity
- 12.Adaptive Immunity
- 13.Immune System Disorders
- 14.Biomedical Applications: Vaccines, Diagnostics, Therapeutics, and Molecular Method
- 15.Antimicrobial Drugs
- 16.Respiratory System Infections
- 17.Skin and Eye Infections
- 18.Nervous System Infections
- 19.Digestive System Infections
- 20.Urinary and Reproductive System Infections
- 21.Cardiovascular and Lymphatic Infections

**Microbiology: Basic & Clinical Principles, 2e (Norman-McKay)**  
**Chapter 1 Introduction to Microbiology**

1.1 Multiple Choice Questions

1) Which of the following is **not** a microorganism?

- A) bacteria
- B) archaea
- C) fungi
- D) mosquito
- E) helminth

Answer: D

Chapter/Section: 1.1

Learning Outcome: 1.1

Bloom's Taxonomy: 1-2: Remembering/Understanding

2) When do opportunistic pathogens tend to cause disease?

- A) when the host is weakened
- B) when the host has recently traveled to a remote area
- C) when the host is young
- D) when the host is pregnant
- E) when the host didn't wash with soap

Answer: A

Chapter/Section: 1.1

Learning Outcome: 1.2

Bloom's Taxonomy: 1-2: Remembering/Understanding

3) Which of the following could be used as evidence for spontaneous generation?

- A) Uncovered meat will give rise to maggots.
- B) The meat in gauze-covered jars will not give rise to maggots.
- C) The broth in Pasteur's S-necked flasks did not spoil.
- D) Tilting Pasteur's S-necked flasks did spoil the broth.
- E) Flies lay eggs that develop into maggots.

Answer: A

Chapter/Section: 1.1

Learning Outcome: 1.3

Bloom's Taxonomy: 1-2: Remembering/Understanding

4) \_\_\_\_\_ showed that biogenesis is responsible for the propagation of life.

- A) Louis Pasteur
- B) Robert Hooke
- C) Antonie van Leeuwenhoek
- D) Joseph Lister
- E) Carl Linnaeus

Answer: A

Chapter/Section: 1.1

Learning Outcome: 1.3

Bloom's Taxonomy: 1-2: Remembering/Understanding

5) Robert Koch helped establish the germ theory of disease by discovering that anthrax was caused by a bacterial microorganism. After he isolated and purified the same bacteria from several diseased animals, what would be the next step in order to show that this bacteria caused anthrax?

- A) perform physiological testing
- B) introduce the bacteria into a new mouse to see if it established the same infection
- C) visualize the bacteria with an electron microscope
- D) culture the bacteria on Petri dishes
- E) find out if antibiotics treat the diseased animals

Answer: B

Chapter/Section: 1.1

Learning Outcome: 1.4

Bloom's Taxonomy: 1-2: Remembering/Understanding

6) How many principles are there in Koch's postulates of disease?

- A) 1
- B) 2
- C) 3
- D) 4
- E) 5

Answer: D

Chapter/Section: 1.1

Learning Outcome: 1.4

Bloom's Taxonomy: 1-2: Remembering/Understanding

7) Aseptic technique can be used for all of the following **except**

- A) preventing healthcare-acquired infections.
- B) safely studying microbes in the laboratory.
- C) keeping samples pure for studying.
- D) replacing gloves instead of hand washing when time is short.
- E) limiting the spread of diseases.

Answer: D

Chapter/Section: 1.1

Learning Outcome: 1.5

Bloom's Taxonomy: 1-2: Remembering/Understanding

8) Which of the following individuals does **not** correctly match with their contribution to microbiology?

A) Ignaz Semmelweis: First developed aseptic techniques to decrease mortality rates from childbed fever

B) Joseph Lister: Developed the first anesthetic solution for use in surgeries

C) Florence Nightingale: Established the use of aseptic techniques in nursing practices

D) Robert Koch: Developed criteria for determining the causative agent of an infectious disease

E) Louis Pasteur: Showed that biogenesis is responsible for the propagation of life

Answer: B

Chapter/Section: 1.1

Learning Outcome: 1.6

Global LO: G2

Bloom's Taxonomy: 3-4: Applying/Analyzing

9) The scientific method starts with a(n)

A) hypothesis.

B) prediction.

C) observation.

D) question.

E) proposal.

Answer: D

Chapter/Section: 1.1

Learning Outcome: 1.7

Global LO: G1

Bloom's Taxonomy: 1-2: Remembering/Understanding

10) Inference-observation confusion occurs when someone

A) jumps to a conclusion.

B) cannot understand your accent.

C) remembers events wrong.

D) lies about what happened.

E) incorrectly assesses a patient.

Answer: A

Chapter/Section: 1.1

Learning Outcome: 1.7

Global LO: G1 | G2

Bloom's Taxonomy: 3-4: Applying/Analyzing

11) \_\_\_\_\_ predict what happens, while \_\_\_\_\_ explain how and why something occurs.

- A) Theories; laws
- B) Hypotheses; conclusions
- C) Laws; theories
- D) Observations; hypotheses
- E) Observations; conclusions

Answer: C

Chapter/Section: 1.1

Learning Outcome: 1.7

Global LO: G1

Bloom's Taxonomy: 1-2: Remembering/Understanding

12) Which of the following is the correct way to type a scientific name?

- A) *escherichia coli*
- B) Escherichia Coli
- C) escherichia coli
- D) *Escherichia coli*
- E) Escherichia coli

Answer: D

Chapter/Section: 1.2

Learning Outcome: 1.10

Bloom's Taxonomy: 1-2: Remembering/Understanding

13) What is the order of the taxonomic hierarchy from least specific to most specific?

- A) species, genus, order, family, class, phylum, kingdom, domain
- B) domain, kingdom, phylum, class, order, family, genus, species
- C) class, order, phylum, kingdom, domain, genus, family, species
- D) domain, phylum, order, kingdom, class, family, genus, species
- E) domain, order, class, kingdom, phylum, species, family, genus

Answer: B

Chapter/Section: 1.2

Learning Outcome: 1.8

Bloom's Taxonomy: 1-2: Remembering/Understanding

14) All of the following are reasons to classify a new strain of bacteria **except**

- A) mutations.
- B) gene transfers.
- C) take up genetic material from their environment.
- D) 50% different genetic material.
- E) genetic variant.

Answer: D

Chapter/Section: 1.2

Learning Outcome: 1.9

Bloom's Taxonomy: 1-2: Remembering/Understanding

15) Why can't prokaryotic species be defined as a group of similar organisms that could sexually reproduce together?

- A) Bacteria reproduce asexually.
- B) Bacteria are all too different to be considered similar.
- C) The mating rituals of bacteria have not been studied enough.
- D) They can be.
- E) We can't see them in enough detail to tell how similar they really are yet.

Answer: A

Chapter/Section: 1.2

Learning Outcome: 1.8 | 1.10

ASM LO: 1.4

Bloom's Taxonomy: 1-2: Remembering/Understanding

16) Normal microbiota are responsible for all of the following **except**

- A) training our immune system.
- B) producing vitamins for us.
- C) helping us digest foods.
- D) inducing spontaneous mutations in our genome.
- E) impacting our moods and brain functions.

Answer: D

Chapter/Section: 1.2

Learning Outcome: 1.12

ASM LO: 5.4

Bloom's Taxonomy: 1-2: Remembering/Understanding

17) Which of the following does **not** contribute to shifts in our normal microbiota?

- A) hormonal changes
- B) diet
- C) age
- D) proper hand-washing technique
- E) our general environment

Answer: D

Chapter/Section: 1.2

Learning Outcome: 1.12

ASM LO: 5.4

Bloom's Taxonomy: 1-2: Remembering/Understanding

18) Microbes and humans have evolved a variety of \_\_\_\_\_ relationships, including \_\_\_\_\_ where microbes help the host.

- A) commensal; mutualism
- B) symbiotic; parasitism
- C) symbiotic; commensalism
- D) dynamic; commensalism
- E) symbiotic; mutualism

Answer: E

Chapter/Section: 1.2

Learning Outcome: 1.11

ASM LO: 5.4

Bloom's Taxonomy: 1-2: Remembering/Understanding

19) Carriers of the sickle-cell gene

- A) are more likely to die from a malaria infection.
- B) are more susceptible to contracting malaria.
- C) have a survival advantage in areas where malaria is common.
- D) are often found in high concentrations in U.S. cities.
- E) experience painful changes in nerve cell shape.

Answer: C

Chapter/Section: 1.2

Learning Outcome: 1.13

Bloom's Taxonomy: 1-2: Remembering/Understanding

20) Which of the following is **true** about bioremediation?

- A) Bioremediation never harms the environment.
- B) Bioremediation will use genetically-modified organisms to break down the chemicals found in the spill zone.
- C) The Environmental Protection Agency documents a handful of chemical spills per year in the United States alone.
- D) Antibiotics are used to seed the spill zone to prevent growth of unwanted microbial species.
- E) Nitrogen, sulfur, phosphate, and sometimes iron supplements are added to the spill zone to encourage microbial growth.

Answer: E

Chapter/Section: 1.2

Learning Outcome: 1.15

ASM LO: 6.3

Bloom's Taxonomy: 1-2: Remembering/Understanding

21) All of the following are or can be produced by microbes **except**

- A) food like chocolate.
- B) drugs like penicillin.
- C) consumer products like biodegradable plastics.
- D) electronics like computer memory.
- E) biofuels like diesel.

Answer: D

Chapter/Section: 1.2

Learning Outcome: 1.15

ASM LO: 6.3

Bloom's Taxonomy: 1-2: Remembering/Understanding

22) All of the following may involve biofilms **except**

- A) kidney stones.
- B) inner ear infections.
- C) atherosclerosis.
- D) endocarditis.
- E) Influenza.

Answer: E

Chapter/Section: 1.2

Learning Outcome: 1.14

Global LO: G2

ASM LO: 5.2

Bloom's Taxonomy: 3-4: Applying/Analyzing

23) When \_\_\_\_\_ bacteria attach to a surface and begin to replicate, creating multiple layers, sticky communities called \_\_\_\_\_ may form.

- A) planktonic; biofilms
- B) pathogenic; quorums
- C) plaque; microbiota
- D) infectious; flora
- E) matrix; cavities

Answer: A

Chapter/Section: 1.2

Learning Outcome: 1.14

ASM LO: 5.2

Bloom's Taxonomy: 1-2: Remembering/Understanding

24) Which of the following statements is **true**?

- A) Media for bacterial growth only comes in a few varieties.
- B) Picking which type of media format to use depends only on the space available.
- C) Picking which type of media to use depends on how much money the researcher is willing to spend.
- D) Agar is used as a solidifying agent for bacterial culture media.
- E) Scientists were not able to grow bacteria in the lab until the creation of the Petri dish.

Answer: D

Chapter/Section: 1.3

Learning Outcome: 1.16

Bloom's Taxonomy: 1-2: Remembering/Understanding

25) When practicing aseptic culturing techniques, it is important to keep all of the following in mind **except**

- A) as long as nothing unintended touches the media, there will be no contamination.
- B) the media used to grow the specimen is sterile.
- C) all of the instruments and lab ware that directly touch the specimen is sterile.
- D) surrounding surfaces are decontaminated before and after handling cultures.
- E) gloves and other protecting clothing may be required depending on the specimen being used.

Answer: A

Chapter/Section: 1.3

Learning Outcome: 1.17

Bloom's Taxonomy: 1-2: Remembering/Understanding

26) A biological safety cabinet minimizes the chances of contaminating cultures by all of the following **except**

- A) limiting access to inside the cabinet.
- B) maintaining a specific flow of filtered air.
- C) readily being decontaminated using UV light.
- D) regular surface cleaning with an antimicrobial solution.
- E) consistent flame sterilization on the inside surfaces.

Answer: E

Chapter/Section: 1.3

Learning Outcome: 1.17

Bloom's Taxonomy: 1-2: Remembering/Understanding

27) The goal of the streak plate technique is to

- A) compare all of the colonies on a plate with a mixed culture.
- B) visualize all of the colonies on a plate from a pure culture.
- C) isolate a pure culture for study from a single colony.
- D) spread out a thick layer of bacteria and isolate the bacteria that outcompete the rest.
- E) compare how the shape, color, and margin differ in colonies from a pure culture.

Answer: C

Chapter/Section: 1.3

Learning Outcome: 1.18

Bloom's Taxonomy: 1-2: Remembering/Understanding