

Table of Contents

- Chapter 01 Introduction to Microbes and Their Building Blocks
- Chapter 02 Tools of the Laboratory: Methods for the Culturing and Microscopic Analysis of Microorganisms
- Chapter 03 Bacteria and Archaea
- Chapter 04 Eukaryotic Cells and Microorganisms
- Chapter 05 Viruses and Prions
- Chapter 06 Microbial Nutrition and Growth
- Chapter 07 Microbial Metabolism
- Chapter 08 Microbial Genetics and Genetic Engineering
- Chapter 09 Physical and Chemical Control of Microbes
- Chapter 10 Antimicrobial Treatment
- Chapter 11 Interactions Between Microbes and Humans
- Chapter 12 Host Defenses I: Overview and Innate Defenses
- Chapter 13 Host Defenses II: Adaptive Immunity and Immunization
- Chapter 14 Disorders in Immunity
- Chapter 15 Diagnosing Infections
- Chapter 16 Infectious Diseases Affecting the Skin and Eyes
- Chapter 17 Infectious Diseases Affecting the Nervous System
- Chapter 18 Infectious Diseases Affecting the Cardiovascular and Lymphatic System
- Chapter 19 Infectious Diseases Affecting the Respiratory Systems
- Chapter 20 Infectious Diseases Affecting the Gastrointestinal Tract
- Chapter 21 Infectious Diseases Affecting the Genitourinary System
- Chapter 22 One Health: The Interconnected Health of the Environment, Humans, and Other Animals

Microbiology Fundamentals: A Clinical Approach, 4e (Cowan)

Chapter 1 Introduction to Microbes and Their Building Blocks

- 1) When humans manipulate the genes of microorganisms, the process is called _____.
- A) bioremediation
 - B) genetic engineering
 - C) epidemiology
 - D) immunology
 - E) taxonomy

ANSWER: B

Section: 01.01

Topic: Microbial Roles; Basics of Genetic Engineering

Bloom's: 01. Remember

ASM Topic: Module 04 Information Flow

ASM Objective: 04.05 Cell genomes can be manipulated to alter cell function.

- 2) Which of the following is not considered a microorganism?
- A) Mosquito
 - B) Protozoan
 - C) Bacterium
 - D) Virus
 - E) Fungus

ANSWER: A

Section: 01.01

Topic: Taxonomy of Microorganisms

Bloom's: 01. Remember

ASM Topic: Module 01 Evolution

ASM Objective: 01.02 Mutations and horizontal gene transfer, along with the immense variety of microenvironments, have resulted in a vast diversity of microorganisms.

- 3) All microorganisms are best defined as organisms that _____.
- A) cause human disease
 - B) lack a cell nucleus
 - C) are infectious particles
 - D) are too small to be seen with the unaided eye
 - E) can only be found growing in laboratories

ANSWER: D

Section: 01.01

Topic: Microbial Roles

Bloom's: 01. Remember

ASM Topic: Module 01 Evolution

ASM Objective: 01.02 Mutations and horizontal gene transfer, along with the immense variety of microenvironments, have resulted in a vast diversity of microorganisms.

- 4) Which activity is an example of biotechnology?
- A) Bacteria in the soil secreting an antibiotic to kill competitors
 - B) A microbiologist using the microscope to study bacteria
 - C) Egyptians using moldy bread on wounds
 - D) *Escherichia coli* producing human insulin
 - E) Public health officials monitoring diseases in a community

ANSWER: D

Section: 01.01

Topic: Basics of Genetic Engineering

Bloom's: 02. Understand

ASM Topic: Module 06 Impact of Microorganisms

ASM Objective: 06.03 Humans utilize and harness microorganisms and their products.

- 5) Living things ordinarily too small to be seen with the unaided eye are termed_____.
- A) bacteria
 - B) viruses
 - C) parasites
 - D) microorganisms
 - E) prokaryotes

ANSWER: D

Section: 01.01

Topic: Cellular Organization

Bloom's: 01. Remember

ASM Topic: Module 01 Evolution

ASM Objective: 01.02 Mutations and horizontal gene transfer, along with the immense variety of microenvironments, have resulted in a vast diversity of microorganisms.

- 6) The microorganisms that recycle nutrients by breaking down dead matter and wastes are called_____.
- A) decomposers
 - B) prokaryotes
 - C) pathogens
 - D) eukaryotes
 - E) fermenters

ANSWER: A

Section: 01.01

Topic: Microbial Roles

Bloom's: 01. Remember

ASM Topic: Module 06 Impact of Microorganisms

ASM Objective: 06.01 Microbes are essential for life, as we know it, and the processes that support life (e.g. in biogeochemical cycles and plant/animal microflora).

7) Cells, like bacteria and archaea, that do not have a nucleus in their cells have traditionally been called _____.

- A) decomposers
- B) prokaryotes
- C) pathogens
- D) eukaryotes
- E) fermenters

ANSWER: B

Section: 01.01

Topic: Cellular Organization

Bloom's: 01. Remember

ASM Topic: Module 02 Structure and Function

ASM Objective: 01.01 Cells, organelles (e.g. mitochondria and chloroplasts) and all major metabolic pathways evolved from early prokaryotic cells.

8) The first cells appeared about _____ billion years ago.

- A) 5.2
- B) 4.6
- C) 3.8
- D) 2.9
- E) 1.5

ANSWER: C

Section: 01.01

Topic: History of Microbiology

Bloom's: 01. Remember

ASM Topic: Module 01 Evolution

ASM Objective: 01.01 Cells, organelles (e.g. mitochondria and chloroplasts) and all major metabolic pathways evolved from early prokaryotic cells.

9) Which of the following is not a human use of microorganisms?

- A) Making bread
- B) Treating water and sewage
- C) Manufacturing copper wire
- D) Mass producing antibiotics
- E) Cleaning up oil spills

ANSWER: C

Section: 01.01

Topic: Microbial Roles

Bloom's: 01. Remember

ASM Topic: Module 06 Impact of Microorganisms

ASM Objective: 06.03 Humans utilize and harness microorganisms and their products.

- 10) Using microbes to detoxify a site contaminated with heavy metals is an example of _____.
- A) biotechnology
 - B) bioremediation
 - C) decomposition
 - D) immunology
 - E) epidemiology

ANSWER: B

Section: 01.01

Topic: Microbial Roles

Bloom's: 01. Remember

ASM Topic: Module 06 Impact of Microorganisms

ASM Objective: 06.03 Humans utilize and harness microorganisms and their products.

- 11) Disease-causing microorganisms are called _____.
- A) decomposers
 - B) prokaryotes
 - C) pathogens
 - D) eukaryotes
 - E) fermenters

ANSWER: C

Section: 01.01

Topic: Microbial Roles

Bloom's: 01. Remember

ASM Topic: Module 06 Impact of Microorganisms

ASM Objective: 05.04 Microorganisms, cellular and viral, interact with both human and non-human hosts in beneficial, neutral or detrimental ways.

- 12) The most prevalent worldwide infectious diseases are _____.
- A) AIDS-related diseases
 - B) diarrheal diseases
 - C) malaria diseases
 - D) measles
 - E) respiratory diseases

ANSWER: E

Section: 01.01

Topic: Microbial Roles

Bloom's: 01. Remember

ASM Topic: Module 06 Impact of Microorganisms

ASM Objective: 05.04 Microorganisms, cellular and viral, interact with both human and non-human hosts in beneficial, neutral or detrimental ways.

13) Which of the following is a unique characteristic of viruses that distinguishes them from the other major groups of microorganisms?

- A) Cause human disease
- B) Lack a nucleus
- C) Cannot be seen without a microscope
- D) Contain genetic material
- E) Lack cell structure

ANSWER: E

Section: 01.01

Topic: General Viral Properties

Bloom's: 01. Remember

ASM Topic: Module 02 Structure and Function

ASM Objective: 01.02 Mutations and horizontal gene transfer, along with the immense variety of microenvironments, have resulted in a vast diversity of microorganisms.

14) Helminths are _____.

- A) bacteria
- B) protozoa
- C) molds
- D) parasitic worms
- E) infectious particles

ANSWER: D

Section: 01.01

Topic: Taxonomy of Microorganisms

Bloom's: 01. Remember

ASM Topic: Module 02 Structure and Function

ASM Objective: 01.02 Mutations and horizontal gene transfer, along with the immense variety of microenvironments, have resulted in a vast diversity of microorganisms.

15) Which group of microorganisms is composed only of hereditary material wrapped in a protein covering?

- A) Viruses
- B) Bacteria
- C) Parasites
- D) Fungi
- E) Helminths

ANSWER: A

Section: 01.01

Topic: General Viral Properties

Bloom's: 01. Remember

ASM Topic: Module 02 Structure and Function

ASM Objective: 01.02 Mutations and horizontal gene transfer, along with the immense variety of microenvironments, have resulted in a vast diversity of microorganisms.