

# Exploring Microbial Biodiversity

Biology · Answer Key · 29 Questions

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## 1. What is the primary characteristic of microorganisms?

- A) They are visible to the naked eye.
- B) They are microscopic and require magnification to be seen.**
- C) They are only found in extreme environments.
- D) They are all pathogenic.

## 2. Which of the following is NOT a type of microorganism?

- A) Bacteria
- B) Viruses
- C) Fungi
- D) Plants**

## 3. What is the role of decomposers in an ecosystem?

- A) To produce oxygen
- B) To break down dead organic matter**
- C) To photosynthesize
- D) To hunt other organisms

## 4. Which domain of life do most bacteria belong to?

- A) Eukarya
- B) Archaea
- C) Bacteria**
- D) Protista

## 5. What are viruses?

- A) Single-celled organisms
- B) Complex multicellular organisms
- C) Acellular infectious agents**
- D) Simple plant structures

## 6. Fungi, like yeasts and molds, are important decomposers. To which domain do they belong?

- A) Bacteria
- B) Archaea
- C) Eukarya**
- D) Protista

**7. Microorganisms play a crucial role in nutrient cycling. Which element's cycle is significantly influenced by bacteria?**

- A) Carbon
- B) Oxygen
- C) Nitrogen**
- D) Hydrogen

**8. What are extremophiles?**

- A) Microorganisms that thrive in moderate conditions.
- B) Microorganisms that live in extreme environments like hot springs or deep-sea vents.**
- C) Microorganisms that cause diseases.
- D) Microorganisms that are visible to the naked eye.

**9. Symbiotic relationships involving microorganisms can be beneficial. What is a mutualistic relationship?**

- A) One organism benefits, the other is harmed.
- B) Both organisms benefit.**
- C) One organism benefits, the other is unaffected.
- D) One organism harms the other while benefiting.

**10. Which microorganisms are responsible for fermentation, a process used in making bread and yogurt?**

- A) Viruses
- B) Algae
- C) Bacteria and Fungi**
- D) Protozoa

**11. What is the significance of microbial biodiversity in maintaining ecosystem health?**

- A) It leads to disease outbreaks.
- B) It increases the susceptibility of ecosystems to change.
- C) It provides resilience and stability to ecosystems.**
- D) It has no significant impact.

**12. Antibiotics are primarily effective against which type of microorganism?**

- A) Viruses
- B) Fungi
- C) Bacteria**
- D) Protozoa

**13. What is the primary function of phytoplankton, which are microscopic algae?**

- A) Decomposition
- B) Nitrogen fixation
- C) Oxygen production through photosynthesis**
- D) Breaking down complex molecules

**14. Microorganisms are essential for the human digestive system. What is one of their roles?**

- A) Producing toxins
- B) Absorbing all nutrients
- C) Aiding in the digestion of food and producing vitamins**
- D) Causing infections

**15. What are archaea?**

- A) A type of fungus
- B) A type of virus
- C) Single-celled organisms that often live in extreme environments, distinct from bacteria.**
- D) Complex multicellular organisms.

**16. The human microbiome refers to:**

- A) All the viruses in the human body.
- B) The collection of all microorganisms living in and on the human body.**
- C) The study of plant microorganisms.
- D) The process of microbial decomposition.

**17. What is a pathogen?**

- A) A microorganism that is beneficial.
- B) A microorganism that causes disease.**
- C) A microorganism that lives in extreme environments.
- D) A microorganism that aids in digestion.

**18. Which of the following is an example of a beneficial microorganism in food production?**

- A) Salmonella
- B) E. coli (some strains)
- C) Lactobacillus (in yogurt)**
- D) Staphylococcus

**19. What is the study of microorganisms called?**

- A) Botany
- B) Zoology
- C) Microbiology**
- D) Geology

**20. Microorganisms are found in almost every habitat on Earth. Which of these is a less common habitat for them?**

- A) Soil
- B) Water
- C) Air
- D) The vacuum of space (outside of a protected environment)**

**21. What is the process by which some microorganisms convert inorganic compounds into energy?**

- A) Photosynthesis
- B) Chemosynthesis**
- C) Fermentation
- D) Respiration

**22. What role do endophytes play?**

- A) They live on the surface of plants.
- B) They live within plant tissues without causing disease.**
- C) They cause plant diseases.
- D) They are free-living soil bacteria.

**23. What are prions?**

- A) Infectious RNA molecules.
- B) Infectious protein molecules.**
- C) A type of bacteria.
- D) A type of virus.

**24. Why is understanding microbial biodiversity important for medicine?**

- A) It helps develop new antibiotics and understand disease.**
- B) It has no relevance to medicine.
- C) It only helps in cosmetic applications.
- D) It only relates to plant diseases.

**25. What is the term for microorganisms that require oxygen to live?**

- A) Anaerobes
- B) Aerobes**
- C) Facultative anaerobes
- D) Microaerophiles

**26. What is the term for microorganisms that can live with or without oxygen?**

- A) Anaerobes
- B) Aerobes
- C) Facultative anaerobes**
- D) Obligate anaerobes

**27. Which of the following is a key characteristic of prokaryotic cells?**

- A) Presence of a nucleus
- B) Presence of membrane-bound organelles
- C) Lack of a nucleus**
- D) Presence of a cell wall made of cellulose

**28. What are protists?**

- A) A group of bacteria.
- B) A diverse group of eukaryotic microorganisms, including algae and protozoa.**
- C) A type of virus.
- D) Simple multicellular fungi.

**29. What is the role of nitrogen-fixing bacteria?**

- A) They convert atmospheric nitrogen into a usable form for plants.**
- B) They break down organic matter.
- C) They produce oxygen.
- D) They cause plant diseases.