Exploring Microbial Biodiversity

Biology · Practice Test · 29 Questions

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.