

Fundamentals of Microbiology

Microbiology · Answer Key · 20 Questions

1. What is the primary difference between a prokaryotic cell and a eukaryotic cell?

A) Presence of a nucleus

B) Ability to reproduce

C) Need for oxygen

D) Presence of ribosomes

2. Which type of microorganism is responsible for causing diseases like the common cold and influenza?

A) Bacteria

B) Fungi

C) Viruses

D) Protozoa

3. What is a common characteristic of yeast and mold?

A) They are viruses

B) They are bacteria

C) They are fungi

D) They are protozoa

4. Which scientist is often credited with developing the first effective vaccine?

A) Louis Pasteur

B) Robert Koch

C) Edward Jenner

D) Alexander Fleming

5. What is the process by which bacteria reproduce asexually?

A) Meiosis

B) Mitosis

C) Binary fission

D) Budding

6. Which of the following is an example of a beneficial microorganism found in the human gut?

A) Salmonella

B) E. coli (some strains)

C) Lactobacillus

D) Staphylococcus aureus

7. What is the primary component of a bacterial cell wall?

- A) Chitin
- B) Cellulose
- C) Peptidoglycan**
- D) Lignin

8. Which term describes a microorganism that can live in the absence of oxygen?

- A) Aerobic
- B) Anaerobic**
- C) Facultative
- D) Microaerophilic

9. What essential function do viruses lack, requiring them to infect host cells?

- A) Metabolism**
- B) Reproduction
- C) Genetic material
- D) Cellular structure

10. What are the small, rod-shaped structures found in some bacteria that allow them to move?

- A) Pili
- B) Capsules
- C) Flagella**
- D) Ribosomes

11. Which disease is caused by the bacterium *Mycobacterium tuberculosis*?

- A) Malaria
- B) Tuberculosis**
- C) Cholera
- D) Typhoid fever

12. What is the function of antibiotics?

- A) To kill viruses
- B) To boost the immune system
- C) To kill or inhibit the growth of bacteria**
- D) To prevent fungal infections

13. What is the process where a virus replicates inside a host cell?

- A) Fermentation
- B) Photosynthesis
- C) Viral replication**
- D) Decomposition

14. What are single-celled organisms without a nucleus or membrane-bound organelles called?

- A) Eukaryotes
- B) Viruses
- C) Prokaryotes**
- D) Fungi

15. Which type of microorganism is responsible for making bread rise?

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

16. What is the main shape of *Coccus* bacteria?

- A) Rod-shaped
- B) Spiral-shaped
- C) Spherical**
- D) Comma-shaped

17. Which scientist observed microorganisms for the first time using a microscope?

- A) Louis Pasteur
- B) Robert Hooke
- C) Antonie van Leeuwenhoek**
- D) Gregor Mendel

18. What is a collection of microorganisms growing on a surface called?

- A) Spore
- B) Plankton
- C) Biofilm**
- D) Colony

19. Which microorganism is the cause of malaria?

- A) Bacterium
- B) Fungus
- C) Virus
- D) Protozoan**

20. What is the process by which organisms break down dead organic matter?

- A) Fermentation
- B) Decomposition**
- C) Nitrogen fixation
- D) Respiration