Microorganisms and Environmental Balance

Biology · Answer Key · 24 Questions

1. What process is described as 'deritrification by cenitifying bacteria' in the text?

A) Conversion of nitrates to free nitrogen
B) Conversion of free nitrogen to nitrates
C) Breakdown of dead organic matter
D) Production of organic nutrients

2. Which of the following are roles of microorganisms in maintaining environmental balance?

A) Electrical fixation of nitrogen
B) Acting as producers and decomposers
C) Causing plant diseases
D) Producing atmospheric electricity

3. Autotrophic bacteria and algae are described as playing what role in the food chain?

A) Decomposers
B) Consumers
C) Producers
D) Pathogens

4. What is the primary function of decomposition bacteria, saprophytic fungi, and protists in the environment?

A) To convert ammonia into nitrites
B) To break down dead organic matter
C) To fix free nitrogen into the atmosphere
D) To absorb nutrients from the soil

5. Which elements are recycled in the environment and made available for plant uptake through decomposition?

A) Oxygen and Hydrogen
B) Carbon, Nitrogen, Phosphorus, and Sulfur
C) Iron and Potassium
D) Calcium and Magnesium

6. Nodule bacteria and free-living bacteria contribute to the nitrogen cycle by converting free nitrogen into what?

A) Ammonia
B) Urea
C) Nitrates
D) Nitrites

7. Nitrifying bacteria are responsible for converting ammonia into nitrites and then into what, which plants can absorb?

A) Free nitrogen
B) Nitrates
C) Organic matter
D) Proteins

8. Denitrifying bacteria convert ammonia and nitrates into what, returning it to the atmosphere?

A) Oxygen
B) Carbon dioxide
C) Water vapor
D) Free nitrogen

9. How do autotrophic bacteria and algae help maintain the balance between oxygen and carbon dioxide?

A) By releasing carbon dioxide and absorbing oxygen
B) By absorbing carbon dioxide and releasing oxygen during photosynthesis
C) By breaking down organic matter
D) By converting nitrates to free nitrogen

10. What percentage of oxygen produced by photosynthesizing organisms is attributed to algae?

A) 10%
B) 25%
C) 53%
D) 75%

11. The diagram shows that dead organic matter can be converted to ammonia via decomposition and then to nitrites and nitrates through nitrification.

A) True
B) False

12. What is the structure of Rhizopus shown in the diagram?

A) A bacterium
B) A fungus
C) An alga
D) A protist

13. Rhizoids are a part of the structure of Rhizopus, anchoring it to the substrate.

A) True
B) False

14. Spores are involved in the reproduction of Rhizopus.

A) True
B) False

15. What is the role of 'electrical fixetii Gy ightning ancd rain' mentioned in the text?

A) It converts free nitrogen to nitrates.
B) It breaks down dead organic matter.
C) It contributes to nitrogen fixation in the atmosphere.
D) It is a process of denitrification.

16. The diagram illustrates how animal excretion (urine) leads to the formation of urea, which is then converted to ammonia.

A) True
B) False

17. Which of the following is a type of bacteria involved in the nitrogen cycle, as mentioned in the text?

A) Decomposition bacteria
B) Saprophytic fungi
C) Nodul bacteria
D) Slime moulds

18. What is a sporangium?

A) A structure for absorbing nutrients
B) A reproductive vessel containing spores
C) A root-like structure
D) A type of leaf

19. A sporangiophore is a stalk that bears a sporangium.

A) True
B) False

20. Free-living soil bacteria are mentioned as playing a role in the nitrogen cycle.

A) True
B) False

21. The process of converting ammonia into nitrites and then nitrates is called nitrification.

A) True
B) False

22. Protists like slime moulds are mentioned as having a role as:

A) Producers
B) Decomposers
C) Nitrifiers
D) Denitrifiers

23. Plants absorb nitrates from the soil through their roots.

A) True
B) False

24. The text mentions 'food' in relation to the breakdown of dead organic matter and nutrient cycling.

A) True
B) False