

Deforestation and Reforestation Science

Environmental Science · Answer Key · 20 Questions

1. Which process describes the rapid release of stored carbon into the atmosphere when forests are cleared and burned?

- A) Carbon sequestration
- B) Carbon mineralization
- C) Carbon oxidation**
- D) Carbon fixation

2. Which term refers to the clearing of forests to create land for agricultural use, such as cattle ranching or crop production?

- A) Afforestation
- B) Conversion**
- C) Succession
- D) Silviculture

3. What is the primary scientific concern regarding the loss of forest canopy cover in tropical regions?

- A) Increased albedo effect
- B) Loss of evapotranspiration cycles**
- C) Soil salinization
- D) Ocean acidification

4. What is the ecological term for the establishment of a forest on land that has not recently been forested?

- A) Reforestation
- B) Afforestation**
- C) Deforestation
- D) Regeneration

5. Which soil nutrient is most significantly depleted following the clearing and burning of tropical rainforests?

- A) Nitrogen**
- B) Phosphorus
- C) Potassium
- D) Iron

6. What role do forests play in the hydrological cycle that is lost when trees are removed?

- A) Groundwater desalination
- B) Atmospheric vapor transpiration**
- C) Magmatic cooling
- D) Oceanic current regulation

7. What is the effect of forest fragmentation on biodiversity?

- A) Increased genetic drift
- B) Reduction of interior habitat species**
- C) Enhancement of migratory routes
- D) Lowering of mutation rates

8. Which gas is absorbed by trees during photosynthesis, making forests a critical carbon sink?

- A) Nitrogen
- B) Methane
- C) Carbon dioxide**
- D) Argon

9. What is a long-term consequence of deforestation on river systems?

- A) Increased sedimentation**
- B) Decreased water temperature
- C) Higher flow stability
- D) Enhanced water purification

10. Which type of forest is most commonly restored in reforestation projects to maximize immediate carbon sequestration?

- A) Old-growth climax forest
- B) Fast-growing monoculture plantations**
- C) Lichen-dominated tundra
- D) Sparse desert shrubland

11. What does the 'edge effect' in fragmented forests typically result in?

- A) Increased humidity
- B) Higher vulnerability to wind and invasive species**
- C) Lower temperature fluctuations
- D) Expansion of canopy cover

12. Which of the following is a major driver of forest degradation rather than total deforestation?

A) Clear-cutting for industrial palm oil

B) Selective logging

C) Conversion to urban infrastructure

D) Conversion to paved highways

13. Why are peatland forests particularly critical in the context of carbon storage?

A) They absorb nitrogen gas

B) They store massive amounts of carbon in organic soil matter

C) They reflect sunlight efficiently

D) They promote volcanic activity

14. What is the definition of secondary succession in a deforested area?

A) The establishment of the first lichen species

B) The gradual return of vegetation on previously disturbed soil

C) The permanent loss of all biological activity

D) The conversion of forest to aquatic habitat

15. How does large-scale deforestation impact local climates in the Amazon?

A) It leads to cooling of the surface

B) It decreases rainfall by reducing moisture recycling

C) It increases air pressure

D) It removes salt from the air

16. What is the primary goal of sustainable forest management (SFM)?

A) To eliminate all human use of forest resources

B) To balance ecological, economic, and social functions of forests

C) To prioritize timber production over all other services

D) To convert forests into protected national parks only

17. Which forest ecosystem serves as one of the largest terrestrial carbon sinks globally?

A) Boreal forests (Taiga)

B) Mediterranean woodlands

C) Tropical dry forests

D) Temperate savanna

18. What is the relationship between deforestation and soil erosion?

- A) Deforestation decreases erosion
- B) Deforestation exposes soil to wind and water, increasing erosion rates**
- C) Deforestation has no impact on erosion
- D) Deforestation improves soil structure

19. What occurs during the process of reforestation when non-native species are used?

- A) Biodiversity is always maximized
- B) The local food web may be disrupted due to lack of co-evolved species**
- C) Soil fertility is permanently destroyed
- D) Carbon sequestration becomes impossible

20. Which biome is currently facing the highest rate of conversion for industrial soybean production?

- A) Tundra
- B) Boreal forest
- C) Cerrado savanna**
- D) Alpine meadow