

TRIAL PRINCIPLES OF ECOLOGY QUESTIONS

1. How does logging increase the chances of forest fires?(Hint: Plant debris left after logging will get dried. This increases the chance of fires)
2. How does forest serve as a buffer zone to filter water?
3. How does Deforestation contribute to global warming?(Hint: CO₂ levels Increased in atmosphere because of lack of photosynthesis, some infrared light from the sun remain on earth surface due to the blanket formed by Greenhouse gases in the atmosphere)
4. How does monoculture promote nutrient deficiency in the soil?(Hint: same species of plant require or compete for same available nutrients)
5. How can the carrying capacity of an ecosystem be altered?(Hint: When resources in an ecosystem is altered)
6. Explain why the concentration of toxic substances highest in 4th trophic level than the 1st trophic level?(Hint: Biological magnification or Biomagnification)
7. Why is resource competition said to be density dependent? Use some examples to explain.(Hint: it depends on the population size of abundance)
8. How will temperature affect biodiversity in the terrestrial habitat?(Hint: use Desert and Tropical rainforest to analyze)
9. How does Eutrophication come about? Hint:(Increased nutrient levels in water leading to reduction in oxygen levels in water due to more plants or organisms growth)

10. Why is pyramid of Energy always upright?(Hint: energy acquisition up the trophic level always decreases)

11. How will sunlight affect productivity in an aquatic ecosystem? Hint:(Affect rate of photosynthesis)

12. How does nutrients concentration in the aquatic ecosystem affect the Biochemical Oxygen Demand?(Hint:High nutrients in water, high eutrophication hence high BOD)

13. When can we have a partially upright pyramid of Numbers?(Hint:few producers is enough to sustain the primary producers)

14. How will a fresh leaf which just fell from a tree be broken down into simpler substances in the soil?(Hint: Detritus/decomposer food chain)

15. How does interactions in an ecosystem occur?(Hint: just explain how Nutrient cycling and Energy flow occur)

16. How will the moisture and nutrient content of a sloppy land with slope aspect facing the East(hint: direction of sun) be affected? (Hint: the sun will cause much evaporation from soil and transpiration by plants. there will also be nutrient run off due to rainfall)

17. Why is the Mesopelagic zone distinguished into Aphotic and Disphotic zone?

18. What happens at the compensation depth?

19. Why is plant diversity and abundance higher in the Littoral zone than in the limnetic zone?

20. What is the biodiversity of organisms in the produnal zone?

21. Explain the symbiotic relationship between Birds and Trees.

22. How will resource competition result in Coexistence among organisms of different species?

23. State 4 adaptations of parasites.

25. Explain how Nitrogen in the atmosphere get into the soil. Group them into Biotic and abiotic means.

26. Analyse the harmful effects of Carbon monoxide in the atmosphere.

27. Briefly explain how will SO₂ and NO₂ result in formation of acid rain.

28. Explain the effects of CFCs on the ozone layer.

29. State the importance of the following to the nitrogen cycle.

- a. Nitrifying bacteria
- b. Rhizobium bacteria
- c. Borne Haber process
- d. Denitrifying bacteria

30. Explain the following

- a. Character displacement
- b. Gause's principle
- c. Niche differentiation

- d. Carrying capacity
- e. Actual Fecundity
- f. Population

31. How does the following factors affect an ecosystem

- a. Rainfall
- b. Temperature
- c. Carbon dioxide concentration

32. What are limiting factors?

Explain a limiting factor that affect the Terrestrial ecosystem.

33. Explain the following

- a. Native species
- b. Keystone species
- c. Ecological Resilience
- d. Ecological Viability
- e. Alien species
- f. Invasive species