

## Ecology Practice Test

- 1) Knowledge of ecology would be used most directly in studying the
  - A) structure of subcellular organelles
  - B) production of hormones and neurotransmitters in two related organisms
  - C) current decline of bighorn sheep in the Rocky Mountains
  - D) biochemical nature of genetic transmission
- 2) The ecological niche of an organism refers to the
  - A) biosphere in which the organism lives
  - B) position of the organism in a food web
  - C) role the organism plays in the community
  - D) relation of the organism to humans
- 3) Which is an example of a changing biotic factor in an ecosystem?
  - A) an increase in the usual amount of winter snowfall
  - B) an increase in sunlight during the summer
  - C) seasonal changes in temperature
  - D) seasonal migration of birds
- 4) The symbols in the key below represent possible effects of some nutritional relationships on an organism.

**KEY:**

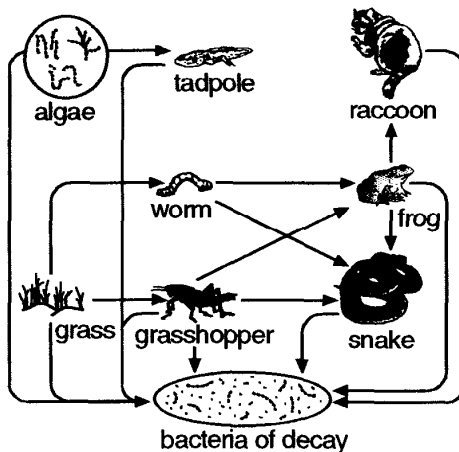
- (+) Organism benefits.
- (-) Organism is harmed.
- (0) Organism neither benefits nor is harmed.

Which relationship would be illustrated by (+) for one organism and (0) for the other organism?

- A) parasitism
  - B) commensalism
  - C) mutualism
  - D) autotrophism
- 5) When a partially rotted log was turned over, fungi, termites, pill bugs, ants, slugs, and earthworms were found to be living in and around it. These organisms collectively represent a
    - A) population
    - B) community
    - C) biosphere
    - D) species
  - 6) Crocodiles often allow ibises (small birds) to enter their mouths to pick bits of food from between their teeth. Both the crocodiles and the ibises benefit. This symbiotic relationship is known as
    - A) parasitism
    - B) saprophytism
    - C) commensalism
    - D) mutualism
  - 7) Nitrogen-fixing bacteria living on the roots of legumes are examples of a nutritional relationship known as
    - A) commensalism
    - B) parasitism
    - C) mutualism
    - D) saprophytism
  - 8) A natural community interacting with its abiotic environment is a description of
    - A) a population
    - B) an ecosystem
    - C) an organism
    - D) an organ system
  - 9) In a freshwater pond community, a carp eats decaying material from around the bases of underwater plants, while a snail scrapes algae from the leaves and stems of the same plants. They can survive at the same time because they occupy
    - A) the same niche, but different habitats
    - B) the same habitat and the same niche
    - C) the same habitat, but different niches
    - D) different habitats and niches
  - 10) Many different species of organisms interacting in a particular environment are an example of a
    - A) population
    - B) community
    - C) biosphere
    - D) biome

## Ecology Practice Test

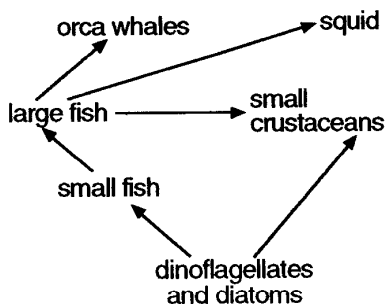
- 11) Which sequence shows increasing complexity of levels of ecological organization?
- A) biosphere, ecosystem, community                      C) community, ecosystem, biosphere  
 B) ecosystem, biosphere, community                    D) biosphere, community, ecosystem
- 12) Decomposition and decay of organic matter are accomplished by the action of
- A) bacteria and fungi    C) scavengers  
 B) green plants    D) viruses and algae
- 13) An abiotic factor that might affect the types of organisms that inhabit a pond is the
- A) introduction of goldfish into the pond  
 B) number of offspring produced by fish in the water  
 C) amount of oxygen available in the pond  
 D) production of food by green algae in the water
- 14) The diagram below shows different species of organisms interacting with each other in and around a pond environment.



- The interactions among organisms in this diagram illustrate
- A) abiotic factors    C) geographic isolation  
 B) a food web    D) organic evolution
- 15) In the food chain below, which organisms are the primary consumers?
- weeds → grasshoppers → praying mantis → shrews → barn owls
- A) shrews    C) grasshoppers  
 B) praying mantises    D) weeds

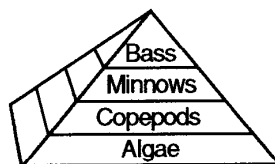
## Ecology Practice Test

- 16) The diagram below represents some of the food relationships between several organisms in a marine community.

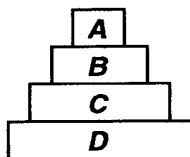


Which organisms would normally be the *least* numerous in this marine community?

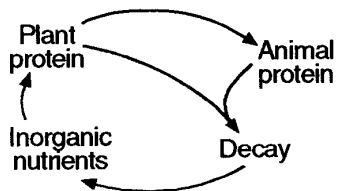
- A) orca whales  
 B) diatoms  
 C) small fish  
 D) small crustaceans
- 17) Which level of this food pyramid represents the *largest* biomass?



- A) bass  
 B) minnows  
 C) algae  
 D) copepods
- 18) If birds eat insects that feed on corn, which pyramid level would birds occupy?



- A) A  
 B) B  
 C) C  
 D) D
- 19) The diagram below illustrates some of the essential steps in



- A) the nitrogen cycle  
 B) the process of photosynthesis  
 C) animal respiration  
 D) the reproductive cycle

## Ecology Practice Test

20. Most plants can use nitrogen in the form of  
a) nitrates  
b) uric acid  
c) gaseous nitrogen  
d) ammonia
21. When animals excrete nitrogenous wastes into the soil, certain soil bacteria convert these wastes into nitrates, which are absorbed by plants. These soil bacteria function as  
a) autotrophs  
b) abiotic factors  
c) secondary consumers  
d) decomposers
22. Which best illustrates a population at homeostasis?  
a) the growth of human population in the United States since 1650  
b) the rapid rise and fall of reindeer on St. Paul Island  
c) a stable deer population in a Rocky Mountain valley resulting from a balance of mortality and natality  
d) a rapid increase in a yeast population maintained in a test tube
23. If the rate of immigration and emigration of a population are the same, what would cause the population to continue to increase in size?  
a) this population could not increase  
b) if the mortality is greater than the natality  
c) if the mortality and natality are equal  
d) if the natality is greater than the mortality
24. What two factors contribute to an increase in the size of a population?  
a) mortality & natality  
b) emigration and natality  
c) immigration & mortality  
d) natality & immigration
25. What factor usually is responsible for limiting the size of each population in the biosphere?  
a) the carrying capacity of the ecosystem  
b) the density of decomposers  
c) the opportunity to locate mates  
d) the increase in annual natality
26. How is the rate of the world's human population increasing?  
a) by mortality exceeding natality  
b) by immigration exceeding emigration  
c) by natality exceeding mortality  
d) by emigration exceeding immigration

### Answers

- |      |       |       |       |
|------|-------|-------|-------|
| 1. C | 9. C  | 17. C | 25. A |
| 2. C | 10. B | 18. B | 26. C |
| 3. D | 11. C | 19. A |       |
| 4. B | 12. A | 20. A |       |
| 5. B | 13. C | 21. D |       |
| 6. D | 14. B | 22. C |       |
| 7. C | 15. C | 23. D |       |
| 8. B | 16. A | 24. D |       |