

Chapter 3 The Biosphere

MULTIPLE CHOICE

1. The branch of biology dealing with interactions among organisms and between organisms and their environment is called (pg. 65)
 - a. economy.
 - b. modeling.
 - c. recycling.
 - d. ecology.

2. Which of the following descriptions about the organization of an ecosystem is correct? (pg. 64)
 - a. Communities make up species, which make up populations.
 - b. Populations make up species, which make up communities.
 - c. Species make up communities, which make up populations.
 - d. Species make up populations, which make up communities.

3. Which of the following is NOT a basic method used by ecologists to study the living world? (pg. 68)
 - a. experimenting
 - b. animal training
 - c. modeling
 - d. observing

4. Which ecological inquiry method is an ecologist using when he or she sets up a greenhouse and measures the effects of different levels of carbon dioxide on an endangered plant species to test their hypothesis? (pg. 68)
 - a. questioning
 - b. observing
 - c. experimenting
 - d. modeling

5. A mathematical formula designed to predict population fluctuations in a community could be called a(n) (pg. 68)
 - a. biological experiment.
 - b. biological system.
 - c. ecological model.
 - d. ecological observation.

6. Plants are (pg. 69)
 - a. primary producers.
 - b. primary consumers.
 - c. herbivores.
 - d. omnivores.

7. How do most primary producers make their own food? (pg 69/70)
 - a. by using light energy to make carbohydrates
 - b. by using chemical energy to make carbohydrates
 - c. by changing water into carbon dioxide
 - d. by breaking down remains to make carbon dioxide

8. Which of the following organisms does NOT require sunlight to live? (pg. 70)
 - a. chemosynthetic bacteria
 - b. algae
 - c. trees
 - d. photosynthetic bacteria

9. In which way are plants in a sunny mountain meadow and sulfur bacteria in a deep-sea volcanic vent alike? (pg. 69/70)
 - a. They both use photosynthesis to make their own food.
 - b. They both produce carbohydrates and oxygen.
 - c. They both use chemosynthesis to produce their own food.
 - d. They both produce carbon and hydrogen.

10. In what way are herbivores and carnivores alike? (pg. 71)
 - a. They both use photosynthesis to make their own food.
 - b. They both obtain energy by consuming other organisms.
 - c. They both directly consume producers.
 - d. They both are considered to be autotrophs.

11. The total amount of living tissue within a given trophic level is called the (pg. 78)
 - a. organic mass.
 - b. trophic mass.
 - c. energy mass.
 - d. biomass.

12. A model of the complex feeding interactions among organisms in a community from producers to decomposers is called a (pg. 74)
 - a. food web.
 - b. ecosystem.
 - c. food chain.
 - d. population.

13. What animals eat both plants and animals? (pg. 71)
 - a. herbivores
 - b. omnivores
 - c. chemotrophs
 - d. autotrophs

14. What is the term for each step in the transfer of energy and matter within a food web? (pg. 77)
 - a. energy path
 - b. food chain
 - c. trophic level
 - d. food pyramid

15. A bird stalks, kills, and then eats an insect. Based on its behavior, which ecological term describes the bird? (pg. 71)
 - a. decomposer
 - b. producer
 - c. carnivore
 - d. herbivore

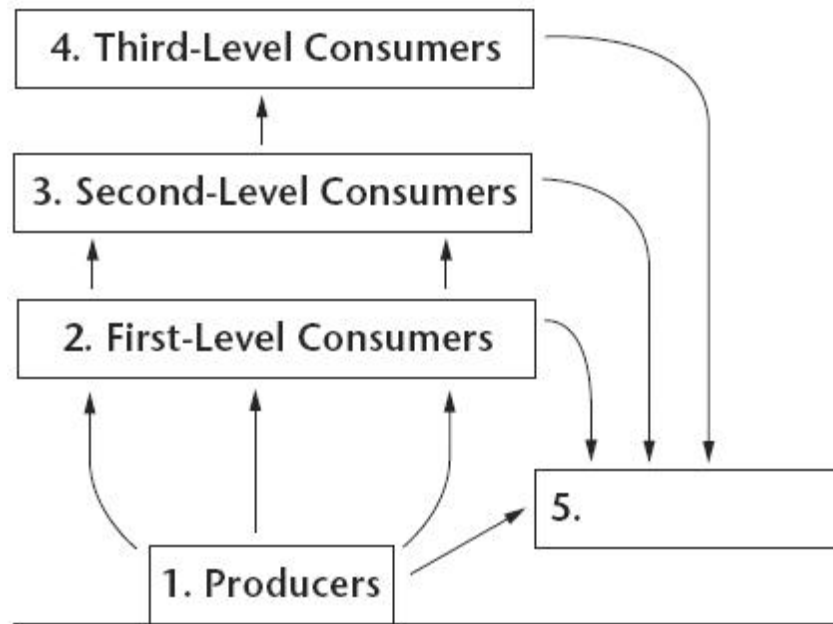


Figure 3–2

16. What goes in Box 5 of the food web in Figure 3–2? (pg. 71/ 74)
 - a. herbivores
 - b. scavengers
 - c. carnivores
 - d. decomposers

17. What are the three kinds of ecological pyramids? (pg. 77/ 78)
 - a. producer, consumer, and decomposer
 - b. energy, nutrient, and trophic
 - c. energy, biomass, and numbers
 - d. biotic, abiotic, and nutrient

18. Only 10 percent of the energy stored in an organism can be passed on to the next trophic level. Of the remaining energy, some is used for the organism’s life processes, and the rest is (pg. 77)
 - a. used in reproduction.
 - b. stored as body tissue.
 - c. stored as fat.
 - d. eliminated as heat.

19. A word that means the same thing as *consumer* is (pg 71)
 - a. producer.
 - b. autotroph.
 - c. heterotroph.
 - d. carbohydrate.

20. Matter can recycle through the biosphere because (pg. 79)
 - a. matter does not change into new compounds.
 - b. matter is assembled into chemical compounds.
 - c. biological systems do not use up matter, they transform it.
 - d. biological systems use only carbon, oxygen, hydrogen, and nitrogen.

21. The repeated movement of water between Earth's surface and the atmosphere is called (pg. 81)
 - a. the water cycle.
 - b. the condensation cycle.
 - c. precipitation.
 - d. evaporation.
22. Nitrogen fixation is carried out primarily by (pg. 84)
 - a. humans.
 - b. plants.
 - c. bacteria.
 - d. consumers.
23. Animals get the most of the nitrogen they need (pg. 84)
 - a. by consuming plants or other animals.
 - b. by breathing in atmospheric nitrogen.
 - c. directly from bacteria in the soil.
 - d. from the process of denitrification.
24. Organisms need nutrients in order to (pg. 82)
 - a. utilize hydrogen and oxygen.
 - b. carry out essential life functions.
 - c. recycle chemical compounds.
 - d. carry out nitrogen fixation.
25. The movements of energy and nutrients through living systems are different because (pg. 73/ 82)
 - a. energy flows in one direction, and nutrients recycle.
 - b. energy is limited in the biosphere, and nutrients are always available.
 - c. nutrients flow in one direction, and energy recycles.
 - d. energy forms chemical compounds, and nutrients are lost as heat.
26. Why can't the producers in some ecosystems make an unlimited supply of organic material? (pg. 85)
 - a. Temperatures are too hot for photosynthesis.
 - b. Too many carnivores eat the producers.
 - c. Energy needed to make organic material is lost as heat.
 - d. One or more nutrients are in short supply.
27. Animals that get energy by eating the carcasses of other animals that have been killed by predators or have died of natural causes are called (pg. 71)
 - a. scavengers.
 - b. omnivores.
 - c. heterotrophs.
 - d. detritivores.
28. Each of the following is an abiotic factor in the environment EXCEPT (pg. 66)
 - a. plant life.
 - b. snow.
 - c. rainfall.
 - d. temperature.
29. During a long period when there is no rainfall, a mountain lion may temporarily leave its usual hunting territory to drink from a farm pond. This behavior is due to (pg. 66/ 67)

- a. its need to find different foods to eat.
- b. the change in an abiotic factor in its environment.
- c. its need to find a new habitat.
- d. the change in a biotic factor in its environment.

30. What is at the base of all ecological pyramids? (pg. 77/ 78)

- a. consumers
- b. decomposers
- c. producers
- d. scavengers

<ul style="list-style-type: none"> • Biosphere- • Species- • Ecology- • Population- • Community- • Biotic- • Abiotic- • Consumers- 	<ul style="list-style-type: none"> • Food Chain- • Food Web- • Trophic Level- • Biomass- • Biochemical cycle- • Nitrogen fixation- • Denitrification- • Limiting Nutrient-
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