Chapter 13-14 Review Quiz

Multiple Choice
Identify the choice that best completes the statement or answers the question.

1. Which phrase best describes the focus of ecology?
   a. individual organisms
   b. individual cells
   c. interactions among organisms
   d. interactions among cells

2. What is the term for a group of different species in a given area?
   a. population
   b. ecosystem
   c. community
   d. biome

3. Which level of organization in ecology is a major regional or global community of organisms?
   a. an ecosystem
   b. population
   c. community
   d. biome

4. Studying a virtual ecosystem on a computer is an example of
   a. experimentation.
   b. modeling.
   c. surveying.
   d. observation.

5. Which of the following is the best example of an observation study?
   a. a quadrat sample
   b. a laboratory experiment
   c. a computer program
   d. a population model

6. Which of the following is an example of a biotic factor in an ecosystem?
   a. sunlight
   b. stream
   c. tree
   d. rock

7. Wind is considered to be an abiotic factor because it
   a. is not related to biodiversity.
   b. is a nonliving thing.
   c. is in equilibrium.
   d. is not in any ecosystem.

8. A rain forest has a high level of biodiversity because it has
   a. many abiotic factors.
   b. some endangered species.
   c. few connections between living things.
   d. a wide variety of living things.

9. A keystone species is a species that
   a. goes unnoticed if its numbers decrease.
   b. alters an area by building bridges and dams.
   c. leads to a decrease in an area's biodiversity.
   d. has an unusually large impact on its ecosystem.

10. Beavers are sometimes trapped for their fur. What could be one effect of increased trapping of beavers in an area?
    a. Biodiversity among the area's fish would increase.
    b. The number of herons and kingfishers would decrease.
    c. There would be more nesting areas for waterfowl.
    d. More trees would be cut down.

11. An organism that makes its own food is called a
    a. consumer.
    b. producer.
    c. heterotroph.
    d. chloroplast.
12. A moose is considered to be a consumer because it
   a. gets energy by eating other resources.
   b. makes its own food.
   c. forms carbohydrates using chemicals.
   d. uses sunlight for energy.

13. The basis for the energy in an ecosystem is provided by
   a. consumers.
   b. heterotrophs.
   c. chemosynthesis.
   d. producers.

14. Most producers get energy from the Sun using the process of
   a. respiration.
   b. consumption.
   c. photosynthesis.
   d. chemosynthesis.

15. Chemosynthesis is the process in which organisms
   a. form carbohydrates using chemicals.
   b. make energy by eating other organisms.
   c. make chemicals that absorb sunlight.
   d. use energy from the sun to form carbohydrates.

16. A model that shows a single sequence of feeding relationships is called a
   a. trophic level.
   b. food chain.
   c. food web.
   d. feeding chain.

17. Decomposers are important to ecosystems because they
   a. return vital nutrients to the environment.
   b. are producers.
   c. capture energy from the Sun.
   d. can be omnivores.

18. Giant pandas eat bamboo almost exclusively. For this reason giant pandas are an example of a(n)
   a. carnivore.
   b. omnivore.
   c. generalist.
   d. specialist.

19. A food chain contains oak trees (producer), mice (herbivore), black rat snakes (carnivore), and bald eagles (carnivore). How many trophic levels does this food chain have?
   a. one
   b. two
   c. three
   d. four

20. Food webs are models that show
   a. one sequence of producers and consumers.
   b. networks of feeding relationships.
   c. stored energy in food chains.
   d. only primary consumers in an ecosystem.

21. The water cycle, in which water moves from the atmosphere, to the surface, below ground, and back, is also called the
   a. biogeochemical cycle.
   b. oxygen cycle.
   c. hydrologic cycle.
   d. nitrogen cycle.

22. Which two biogeochemical cycles depend directly on photosynthesis?
   a. the hydrologic cycle and the oxygen cycle
   b. the carbon cycle and the phosphorus cycle
   c. the nitrogen cycle and the phosphorus cycle
   d. the oxygen cycle and the carbon cycle
23. Fossil fuels are part of which of the following cycles?
   a. oxygen  
   b. carbon  
   c. nitrogen  
   d. phosphorus

24. What happens during the process of nitrogen fixation?
   a. Bacteria change ammonium into nitrate.  
   b. Bacteria grow on nodules on plant roots.  
   c. Bacteria absorb ammonia and excrete ammonium.  
   d. Bacteria convert gaseous nitrogen into ammonia.

25. Where does most of the phosphorus cycle take place?
   a. in the atmosphere  
   b. at and below ground level  
   c. on fungi near plant roots  
   d. close to rocky terrain

26. Each level in a food chain contains less energy than the one below it because some energy is
   a. added to the system.  
   b. lost as heat.  
   c. consumed by carnivores.  
   d. incorporated into biomass.

27. The term biomass refers to the total
   a. dry mass of the organisms in a given area.  
   b. unused material excreted as waste.  
   c. producer-to-consumer ratio.  
   d. mass of all living things on Earth.

28. A diagram that shows how available energy is distributed among trophic levels in an ecosystem is called a(n)
   a. food pyramid.  
   b. pyramid of numbers.  
   c. food web.  
   d. energy pyramid.

29. A biomass pyramid is a diagram that compares the
   a. masses of different organisms.  
   b. numbers of different organisms.  
   c. biomass of different trophic levels.  
   d. distribution of energy in trophic levels.

30. A diagram that shows the numbers of individual organisms at each trophic level in an ecosystem is called a(n)
   a. biomass pyramid.  
   b. pyramid of numbers.  
   c. energy pyramid.  
   d. inverted pyramid.

31. All of the environmental features in the area where an organism lives are known as its
   a. niche.  
   b. habitat.  
   c. community.  
   d. behavior.

32. The lion's ecological niche includes its behavior and
   a. the shade trees on the savanna.  
   b. its position in the food web.  
   c. an ecological equivalent.  
   d. all the nearby watering holes.

33. The idea that two species cannot occupy the same niche is known as
   a. ecological equivalence.  
   b. niche partitioning.  
   c. evolutionary response.  
   d. competitive exclusion.

34. When two species compete for the same resources, their ecological niche may
   a. become extinct.  
   b. adapt to one species.  
   c. not favor one of them.  
   d. split into two niches.

35. Ecological equivalents are species that occupy similar niches
   a. in different geographical regions.  
   b. with plenty of food.  
   c. in different types of habitats.  
   d. after niche partitioning.
36. Two robins eating worms on the same lawn is an example of
   a. mutualism.
   b. commensalism.
   c. competition.
   d. parasitism.

37. Predation is best described as
   a. one organism capturing and eating another.
   b. two organisms competing for limited resources.
   c. an interaction in which two species benefit from each other.
   d. an interaction in which one species benefits and other is not affected.

38. Aphids eat the sap from plants and excrete sticky waste that ants eat. The ants protect the aphids from predators. This type of interaction is called
   a. parasitism.
   b. mutualism.
   c. commensalism.
   d. competition.

39. An oak tree provides a sparrow a place to build a nest. The nest neither benefits nor harms the tree. What is the name for this type of relationship?
   a. mutualism
   b. commensalism
   c. predation
   d. parasitism

40. One difference between parasitism and predation is that parasites
   a. do very little harm to their hosts.
   b. keep their hosts alive for a period of time.
   c. attack the host only from the inside.
   d. are not very big.

41. Which of the following describes the density of a population?
   a. 5 sloths dispersed randomly
   b. 100 people in the area
   c. 100 wolves per square mile
   d. 1 acre per family

42. The way in which individuals of a population are spread out is called
   a. population density.
   b. population dispersion.
   c. survivorship.
   d. predation.

43. Zebra herds that live and move together are an example of what type of dispersion?
   a. clumped dispersion
   b. uniform dispersion
   c. random dispersion
   d. territorial dispersion

44. What does a survivorship curve show?
   a. the number of births and deaths each year
   b. the number of predators that fed on a species' eggs
   c. the number of offspring born in a particular year
   d. the number of offspring still alive over time

45. Most large mammals have type 1 survivorship curves, which means they have
   a. low infant mortality and high rates of survival into old age.
   b. roughly equal survivorship rates at all ages.
   c. high numbers of offspring so that a few will survive.
   d. very high levels of predation and uniform dispersion.

46. The movement of a single caribou into a herd is an example of
   a. immigration.
   b. emigration.
   c. population.
   d. competition.

47. What pattern of growth will a population with limited resources show?
   a. exponential
   b. logistic
   c. density-dependent
   d. density-independent
48. The carrying capacity is most likely to change
   a. if emigration takes place.
   b. when resources remain the same.
   c. for all species at the same time.
   d. after a fire or flood.

49. Diseases may spread more rapidly when an area is crowded, so disease is considered to be a
   a. type I survivorship curve
   b. population crasher.
   c. density-dependent limiting factor.
   d. requirement for logistic growth.

50. Which of the following is an example of a density-independent limiting factor?
   a. a parasite
   b. a decrease in prey
   c. a food shortage
   d. a natural disaster

51. A sequence of biotic changes that regenerate or create an ecological community is known as
   a. migration.
   b. factors.
   c. succession.
   d. erosion.

52. The development of an ecosystem in an area that has been covered by lava begins with the
   a. breakdown of rock by pioneer species.
   b. migration of animals.
   c. growth of trees and shrubs.
   d. appearance of soil.

53. Lichens and mosses that first live in uninhabited areas are examples of
   a. non-native species.
   b. pioneer species.
   c. primary species.
   d. secondary species.

54. Secondary succession is most likely to occur
   a. after a forest fire.
   b. with pioneer species.
   c. if a glacier shrinks.
   d. on a new volcanic island.

55. Which of the following statements about primary succession is true?
   a. It begins with a climax community.
   b. Small mammals are first to inhabit the area.
   c. It only occurs after glaciers retreat.
   d. It begins with bare rock.
MULTIPLE CHOICE

1. C
2. C
3. D
4. B
5. A
6. C
7. B
8. D
9. D
10. B
11. B
12. A
13. D
14. C
15. A
16. B
17. A
18. D
19. D
20. B
21. C
22. D
23. B
24. D
25. B
26. B
27. A
28. D
29. C
30. B
31. B
32. B
33. D
34. D
35. A
36. C
37. A
38. B
39. B
40. B
41. C
42. B
43. A
44. D
45. A
46. A
47. B
48. D
49. C
50. D
51. C
52. A
53. B
54. A
55. D