

Chapter 21 Study Guide

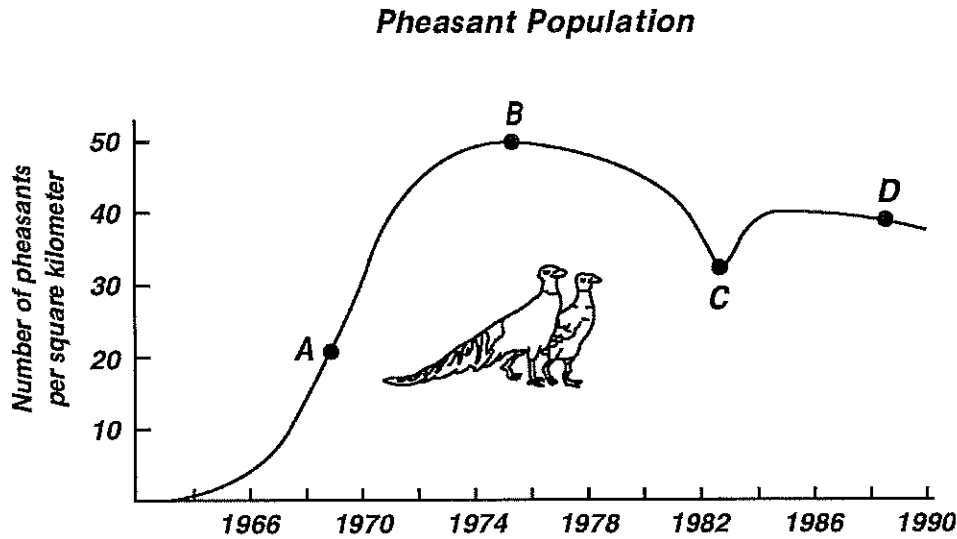
Completion

Complete each sentence or statement.

1. If food is scarce, it becomes a(n) _____ factor that prevents population growth.
2. The study of how living things interact with each other and with their environment is called _____.
3. A group of zebras breaking off from a herd decreases the size of the herd population through _____.
4. A flea is a parasite that lives on a(n) _____ such as a dog.
5. The type of succession that occurs in an area where an ecosystem has been disturbed, but where soil and organisms still exist, is called _____ succession.
6. Observing animal tracks is an example of _____ observation, which is used to estimate population size.
7. All the biotic and abiotic factors in an area together make up a(n) _____.
8. The struggle of two species to occupy a certain niche in an ecosystem is an example of _____.
9. The _____ method of estimating involves multiplying the number of organisms in a small area to find the number in a larger area.
10. A close relationship between two species that benefits at least one of the species is known as _____.
11. The main way that populations increase in size is through the _____ of offspring.
12. Prairie dogs, snakes, and grass make up a level of ecological organization called a(n) _____.
13. Two abiotic factors that are needed for photosynthesis are sunlight and _____.
14. A hawk building a nest on the arm of a cactus without hurting the cactus is an example of the symbiotic relationship called _____.
15. A lack of places to build nests is an example of _____ as a limiting factor for a population of birds.
16. The part of an ecosystem where an organism lives and feeds is called the organism's _____.
17. The thick fur of a polar bear is a(n) _____ that allows the bear to live successfully in its environment.
18. Scientists who study how living things interact with the environment are called _____.
19. Ticks feed on the blood of mice in a symbiotic relationship called _____.
20. Water, sunlight, and soil are _____ factors in an ecosystem.

Short Answer

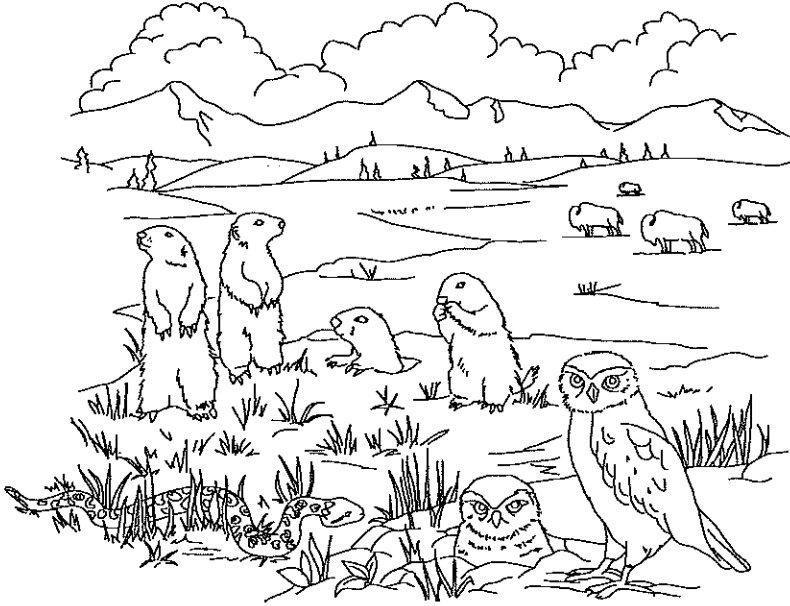
Use the diagram to answer each question.



21. What was the population density of pheasants in 1968, 1976, and 1990?
22. Which letter marks the peak of the pheasant population?
23. How was the pheasant population changing at Point A?
24. What happened to the pheasant population between Point B and Point C?
25. In 1990, a large resort hotel was built on the island where these pheasants live. Explain how this might have affected the pheasant population.
26. What are some possible explanations for the change in pheasant population between Point B and Point C?

Use the diagram to answer each question.

Prairie Ecosystem



27. Describe one of the prairie dog's adaptations and how it helps the prairie dog to survive.
28. What is the smallest unit of organization in an ecosystem? Give one example from the diagram.
29. Describe three factors that could limit the growth of the prairie dog population.
30. Describe two things the prairie dogs need to live that they obtain from their habitat.
31. What level of ecological organization do all of the owls in a certain area represent?
32. Is the prairie soil a biotic factor or an abiotic factor? Explain your answer.

Essay

33. Explain the difference between a population and a community.
34. Classify these examples of symbiosis by type and explain your choice: 1) Inside a human's intestine live bacteria that make vitamin K; 2) A human picks up bacteria on his or her hands. The bacteria do not cause disease but do feed on the human's dead skin cells; 3) A tick attaches itself to a human and feeds on the human's blood.
35. Explain the difference between direct and indirect observation in determining population size.
36. Explain why two different species in an ecosystem can share the same habitat but not the same niche.
37. Explain why the populations of a predator and its prey often follow regular cycles.
38. Explain why secondary succession usually occurs more rapidly than primary succession.

39. Define *abiotic factor* and give four examples.

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

- _____ 40. The first species to populate an area where primary succession is taking place are called
- primary species.
 - secondary species.
 - succession species.
 - pioneer species.
- _____ 41. The place where an organism lives and that provides the things the organism needs is called its
- species.
 - community.
 - habitat.
 - population.
- _____ 42. A close relationship between two species that benefits at least one of the species is called
- adaptation.
 - natural selection.
 - symbiosis.
 - competition.
- _____ 43. An organism's habitat must provide all of the following EXCEPT
- food.
 - water.
 - shelter.
 - predators.
- _____ 44. The series of changes that occurs after a disturbance in an existing ecosystem is called
- pioneer succession.
 - primary succession.
 - secondary succession.
 - disturbance succession.
- _____ 45. An early winter frost preventing further growth in a tomato garden is an example of
- carrying capacity.
 - indirect observation.
 - a limiting factor.
 - a biotic factor.
- _____ 46. Mutualism, commensalism, and parasitism are the three types of
- symbiotic relationships.
 - competition.
 - prey adaptations.
 - predation.
- _____ 47. The study of how things interact with each other and with their environment is called
- community.
 - photosynthesis.
 - biotic studies.
 - ecology.

- _____ 48. The struggle between organisms to survive in a habitat with limited resources is called
- symbiosis.
 - parasitism.
 - predation.
 - competition.
- _____ 49. An organism's particular role in its habitat, or how it makes its living, is called its
- niche.
 - competition.
 - ecosystem.
 - carrying capacity.
- _____ 50. The nonliving parts of an ecosystem are called
- abiotic factors.
 - biotic factors.
 - populations.
 - organisms.
- _____ 51. When a flea is living on a dog, the dog is the
- predator.
 - prey.
 - host.
 - parasite.
- _____ 52. The smallest unit of ecological organization is a single
- community.
 - organism.
 - population.
 - ecosystem.
- _____ 53. Which of the following describes an interaction in which one organism kills and eats another?
- competition
 - predation
 - symbiosis
 - mutualism
- _____ 54. Counting the number of organisms in a small area and multiplying to estimate the number in a larger area is called
- sampling.
 - direct observation.
 - population density.
 - mark and recapture.
- _____ 55. A hawk building its nest on an arm of a saguaro cactus is an example of
- mutualism.
 - predation.
 - parasitism.
 - commensalism.
- _____ 56. The *Escherichia coli* that live in your intestine and help break down food are an example of which type of interaction?
- predation
 - parasitism
 - competition
 - mutualism

- _____ 57. Population density is defined as
- the smallest level of ecological organization.
 - an approximation of a number, based on reasonable assumptions.
 - the number of individuals of a population in a specific area.
 - the number of individuals moving into a population.
- _____ 58. If you count 20 beetles in a garden measuring 5 square meters, the population density of the beetles is
- 20 beetles per square meter.
 - 4 beetles per square meter.
 - 5 beetles per square meter.
 - 100 beetles per square meter.
- _____ 59. All the different populations that live together in an area make up a(n)
- ecosystem.
 - community.
 - organism.
 - species.
- _____ 60. Which of the following is a biotic factor in the prairie ecosystem?
- water
 - soil
 - sunlight
 - grass
- _____ 61. When a jellyfish paralyzes a tiny fish with its poisonous tentacles, the fish is the
- parasite.
 - prey.
 - host.
 - predator.
- _____ 62. An approximation of a number, based on reasonable assumptions, is called a(n)
- immigration
 - biotic factor
 - limiting factor
 - estimate
- _____ 63. Which of the following is an example of a predator adaptation?
- a shark's powerful jaws
 - a porcupine's needles
 - a plant's poisonous chemicals
 - a frog's bright colors
- _____ 64. All of the following are examples of limiting factors EXCEPT
- food.
 - weather conditions.
 - soil.
 - space.
- _____ 65. The largest population that an environment can support is called its
- death rate.
 - birth rate.
 - carrying capacity.
 - limiting factor.

Name: _____

ID: B

- _____ 66. To carry out photosynthesis, algae and plants use the abiotic factors sunlight, carbon dioxide, and
- water.
 - bacteria.
 - soil.
 - salt.
- _____ 67. A group of antelope leaving the herd in search of better grassland is an example of
- increasing birth rate.
 - decreasing death rate.
 - emigration.
 - immigration.
- _____ 68. The behaviors and physical characteristics of species that allow them to live successfully in their environment are called
- limiting factors.
 - biotic factors.
 - habitats.
 - adaptations.
- _____ 69. Which of the following is an example of a population?
- the gray wolves in a forest
 - the rocks in a rock collection
 - the cats and dogs in your neighborhood
 - the bushes and grass in a park