

Chapter 40 Practice

Multiple Choice

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

- _____ 1. A one-way relationship in which one species benefits at the expense of another is called
 - a. commensalism.
 - b. symbiosis.
 - c. parasitism.
 - d. mutualism.
 - e. all of these

- _____ 2. Which of the following is NOT characteristic of most parasites?
 - a. They are specialists and usually are able to affect only one variety of hosts.
 - b. They inflict serious injury and kill their hosts.
 - c. Some reside inside their hosts, whereas others live outside their hosts.
 - d. Their host may be a plant as well as an animal.
 - e. Parasites are smaller than their hosts

- _____ 3. The weakest symbiotic attachment, in which one species simply lives better in the presence of another species that is relatively unaffected, is called
 - a. commensalism.
 - b. competitive exclusion.
 - c. mutualism.
 - d. predation.
 - e. parasitism.

- _____ 4. Fruit flies probably have what type of relationship with humans?
 - a. parasitic
 - b. mutualistic
 - c. predatory
 - d. commensal
 - e. indirect interaction

- _____ 5. In the food chain, grass → rabbit → eagle, the reaction between the grass and eagle is
 - a. predation.
 - b. commensalism.
 - c. competition.
 - d. indirect.
 - e. mutualism.

- _____ 6. The interaction in which one species benefits and the second species is neither harmed nor benefited is
 - a. mutualism.
 - b. parasitism.
 - c. commensalism.
 - d. competition.
 - e. predation.

- _____ 7. The relationship between the yucca plant and the yucca moth that pollinates it is best described as
- camouflage.
 - commensalism.
 - competitive exclusion.
 - mutualism.
 - all of these
- _____ 8. In mixed assemblages, baboons sometimes see predators that impala do not hear, and impala sometimes hear predators that baboons do not see. In both cases, the flight of one species alerts the other to danger. This interaction is an example of
- an indirect relationship.
 - commensalism.
 - mutualism.
 - competition.
 - none of these
- _____ 9. An interaction between two species in which both species benefit is known as
- mutualism.
 - parasitism.
 - commensalism.
 - competition.
 - predation.
- _____ 10. Niche overlap initially leads to
- mutualism.
 - commensalism.
 - competition.
 - predation.
 - parasitism.
- _____ 11. In Gause's experiments with *Paramecium* growing in test tubes, he demonstrated that
- organisms with similar niches will evolve enough to survive in different niches.
 - organisms with slightly different feeding habits will change to become exclusive competitors.
 - organisms with similar feeding habits may compete to the point of extinction.
 - organisms with slightly different feeding habits will change to become exclusive competitors and organisms with similar feeding habits may compete to the point of extinction.
 - organisms with similar niches will evolve enough to survive in different niches and organisms with similar feeding habits may compete to the point of extinction.
- _____ 12. Gause's exclusion principle refers to
- isolation.
 - competition.
 - habitat preference.
 - physiological adaptation.
 - predation.
- _____ 13. A goat that eats by pulling a plant out of the ground is an example of
- parasitism.
 - predation.
 - competition.
 - commensalism.
 - mutualism.

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- _____ 14. Conditions of stable coexistence between predator and prey include
- high predator reproductive rate relative to that of the prey.
 - a carrying capacity for prey that is not high.
 - large predator size relative to that of the prey.
 - high predator reproductive rate relative to that of the prey and a carrying capacity for prey that is not high.
 - high predator reproductive rate relative to that of the prey, a carrying capacity for prey that is not high, and large predator size relative to that of the prey.
- _____ 15. In general, a predator is _____ than its _____.
- smaller; host
 - larger; host
 - smaller; prey
 - larger; prey
- _____ 16. Ladybugs are effective natural control agents against pest insects, but they do not reduce pest populations to zero because
- they can't fly to find pests on nearby plants.
 - of their very selective feeding habits.
 - a predator with 100% efficiency would drive its prey, and consequently itself, to extinction.
 - they don't live long enough.
 - their reproductive capacity is nonexistent.
- _____ 17. Chemicals in both plants and animals serve as which of the following to predators?
- warnings
 - repellents
 - poisons
 - bad tastes
 - all of these
- _____ 18. Which of the following are adaptations used by predators?
- behavior
 - camouflage
 - speed
 - stealth
 - all of these
- _____ 19. In contrast to a predator, a parasite usually
- does not kill the animal on which or in which it lives.
 - kills its host.
 - is a short-term visitor.
 - is larger than its host.
 - does not kill the animal on or in which it lives and is larger than its host.
- _____ 20. Which of the following may be parasites?
- bacteria
 - plants
 - protists
 - viruses
 - all of these

- _____ 21. Which of the following statements about parasites is true?
- Parasites usually do not kill their hosts.
 - The parasite species that infects a particular host species becomes less virulent over evolutionary time.
 - Warm-blooded animals are commonly infected by parasites.
 - Parasites usually do not kill their hosts, and parasite species that infect a particular host species become less virulent over evolutionary time.
 - Parasites usually do not kill their hosts; parasite species that infect a particular host species become less virulent over evolutionary time; and warm-blooded animals are commonly infected by parasites.
- _____ 22. During the process of community succession,
- the total mass of living things remains constant.
 - there are increasing possibilities for resource partitioning.
 - the pioneer community gives way quickly to the climax community, followed by a succession of more diverse arrays of organisms.
 - nutrients cycle more rapidly with time.
 - all of these
- _____ 23. Populations are held in check by
- resource partitioning.
 - predation.
 - social parasitism.
 - competition.
 - all of these
- _____ 24. Which statement is false?
- Succession is predictable.
 - Pioneer species have wide ranges of tolerances.
 - Pioneer plant species are usually small annuals with an abundance of easily dispersed seeds.
 - The succession that occurs in an abandoned field is primary succession.
 - Climax species are those that are best adapted to the specific climate where the succession occurs.
- _____ 25. Secondary succession is likely to occur
- in a clear-cut deciduous forest.
 - on an eroded, bare hillside.
 - in an abandoned field.
 - in a clear-cut deciduous forest and on an eroded, bare hillside.
 - in a clear-cut deciduous forest, on an eroded, bare hillside, and in an abandoned field.
- _____ 26. Which of the following statements concerning climax communities is true?
- A climax community is always a result of primary succession.
 - When compared to early successional communities, climax communities usually possess more species.
 - The species of the climax community require long periods of environmental stability to ensure continued survival in the community.
 - A climax community is always a result of primary succession and when compared to early successional communities, climax communities usually possess more species.
 - all of these

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- _____ 27. The climax community
- a. is formed by species with the greatest range of environmental tolerance.
 - b. is the most common community found in an area.
 - c. changes over time.
 - d. is well adapted to the climate and persists until the climate changes.
 - e. all of these
- _____ 28. A keystone species is
- a. a single dominant species.
 - b. in control of the prey species.
 - c. exemplified by the sea star.
 - d. a single dominant species exemplified by the sea star.
 - e. a single dominant species in control of the prey species exemplified by the sea star.
- _____ 29. Many introduced species have had deleterious effects on communities and ecosystems because
- a. coevolved parasites and competitors are absent.
 - b. the introduced species are long-lived.
 - c. predators prefer the introduced species and the local prey therefore proliferate to dangerously high levels.
 - d. the communities from which they came lost an important predator, competitor, or parasite.
 - e. all of these
- _____ 30. Kudzu did well in the southeastern United States because
- a. there were few herbivores that ate it.
 - b. there were few pathogens to infect it.
 - c. there was little competition from native organisms.
 - d. the climate was favorable.
 - e. all of these
- _____ 31. Which of the following has Australia tried to reduce rabbit numbers?
- a. hunting
 - b. introduced viruses
 - c. introduced predators
 - d. both hunting and introduced viruses
 - e. all of these
- _____ 32. In the United States, the number of breeding bird species increases from
- a. Minnesota to Texas.
 - b. mainland Florida to the Florida Keys.
 - c. low mountain altitudes to high mountain altitudes.
 - d. Minnesota to Texas and mainland Florida to the Florida Keys.
 - e. Minnesota to Texas, mainland Florida to the Florida Keys, and low mountain altitudes to high mountain altitudes.

- _____ 33. There are more insect species per square kilometer in a Brazilian rain forest than there are in a redwood forest of the Pacific Northwest of the United States. According to contemporary ecological hypotheses, an explanation for this finding is
- the tropics have been climatically stable for a longer period of time than have temperate areas.
 - niches in the tropics are smaller than those in temperate areas.
 - on average insects are smaller in the tropics than they are in temperate areas.
 - the tropics have been climatically stable for a longer period of time than have temperate areas and niches in the tropics are smaller than those in temperate areas.
 - the tropics have been climatically stable for a longer period of time than have temperate areas; niches in the tropics are smaller than those in temperate areas; and on average, insects are smaller in the tropics than they are in temperate areas.
- _____ 34. What is causing the sixth major extinction?
- altering of habitat
 - asteroids
 - hunting
 - alteration of habitats and asteroids
 - asteroids and hunting
- _____ 35. What is the major factor leading endemic species toward extinction?
- global warming
 - ozone thinning
 - habitat loss
 - over-hunting
 - acid rain
- _____ 36. The biological wealth of a country can be a source of
- food.
 - lumber.
 - medicine.
 - recreation.
 - all of these
- _____ 37. Countries with the fastest growing populations often have the
- most biological and monetary wealth.
 - most biological and least monetary wealth.
 - least biological and most monetary wealth.
 - least biological and monetary wealth.
 - none of these (population size is unrelated to wealth)
- _____ 38. Four of the five answers listed below are relationships in which at least one of the interactants benefits. Select the exception.
- competition
 - parasitism
 - mutualism
 - commensalism
 - predation

- _____ 39. Four of the five answers listed below are defense chemicals. Select the exception.
- a. perfume
 - b. warning odors
 - c. poisons
 - d. alarm substances
 - e. repellents

Matching

Choose the one most appropriate answer for each.

- a. blending in and being hidden by the background
 - b. where an organism is generally located in an environment
 - c. organism benefits at another organism's expense
 - d. a self-sustaining array of interacting organisms that is best suited for a particular environment
 - e. lichens on newly hardened, newly cooled lava
 - f. deer and human populations
 - g. the yucca moth and the yucca
 - h. one species is forced from an area of niche overlap
 - i. a tasty viceroy butterfly resembles a bad-tasting monarch butterfly
 - j. the process that converts a pioneer community to a climax community
 - k. natural reforestation of burned over forest
- _____ 40. camouflage
- _____ 41. commensalism
- _____ 42. competitive exclusion
- _____ 43. habitat
- _____ 44. mimicry
- _____ 45. mutualism
- _____ 46. parasitism
- _____ 47. primary succession
- _____ 48. climax community
- _____ 49. secondary succession
- _____ 50. succession

Answer questions in reference to the five kinds of species interactions listed below:

- a. competition
 - b. predation
 - c. mutualism
 - d. commensalism
 - e. parasitism
- _____ 51. In this interaction, one species benefits while the other is neither harmed nor benefited.
- _____ 52. In this interaction between two species, both species are harmed in some way.
- _____ 53. In this interaction, both species benefit.
- _____ 54. In this interaction, one individual or species usually is killed, while the other benefits by eating the first.

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- _____ 55. In this interaction, one species is harmed, but usually not killed, to the benefit of the other that lives on or in the first.

Answer questions in reference to the five kinds of species interactions listed below:

- a. competition
- b. predation
- c. mutualism
- d. commensalism
- e. parasitism

- _____ 56. The relationship between a dog and a wood tick is this kind of relationship.
- _____ 57. The interaction between termites and the cellulose-digesting protozoans in the termite gut is this kind of relationship.
- _____ 58. This is the likely interaction between two closely related species of woodpeckers that live in a temperate forest.
- _____ 59. If a wasp lays its eggs inside the larva of a fly, the type of interaction is this.
- _____ 60. When a tropical bird places its nest in association with a wasp nest on the same tree, the type of interaction is this.

Chapter 40 Practice Answer Section

MULTIPLE CHOICE

1. ANS: C PTS: 1 DIF: Easy
TOP: WHICH FACTORS SHAPE COMMUNITY STRUCTURE?
2. ANS: B PTS: 1 DIF: Difficult
TOP: WHICH FACTORS SHAPE COMMUNITY STRUCTURE?
3. ANS: A PTS: 1 DIF: Moderate
TOP: WHICH FACTORS SHAPE COMMUNITY STRUCTURE?
4. ANS: D PTS: 1 DIF: Moderate
TOP: WHICH FACTORS SHAPE COMMUNITY STRUCTURE?
5. ANS: D PTS: 1 DIF: Easy
TOP: WHICH FACTORS SHAPE COMMUNITY STRUCTURE?
6. ANS: C PTS: 1 DIF: Easy
TOP: WHICH FACTORS SHAPE COMMUNITY STRUCTURE?
7. ANS: D PTS: 1 DIF: Easy TOP: MUTUALISM
8. ANS: C PTS: 1 DIF: Moderate TOP: MUTUALISM
9. ANS: A PTS: 1 DIF: Easy TOP: MUTUALISM
10. ANS: C PTS: 1 DIF: Moderate TOP: COMPETITIVE INTERACTIONS
11. ANS: C PTS: 1 DIF: Moderate TOP: COMPETITIVE INTERACTIONS
12. ANS: B PTS: 1 DIF: Moderate TOP: COMPETITIVE INTERACTIONS
13. ANS: B PTS: 1 DIF: Easy
TOP: PREDATOR-PREY INTERACTIONS
14. ANS: D PTS: 1 DIF: Moderate
TOP: PREDATOR-PREY INTERACTIONS
15. ANS: D PTS: 1 DIF: Moderate
TOP: PREDATOR-PREY INTERACTIONS
16. ANS: C PTS: 1 DIF: Difficult
TOP: PREDATOR-PREY INTERACTIONS
17. ANS: E PTS: 1 DIF: Easy
TOP: AN EVOLUTIONARY ARMS RACE
18. ANS: E PTS: 1 DIF: Easy
TOP: AN EVOLUTIONARY ARMS RACE
19. ANS: A PTS: 1 DIF: Difficult
TOP: PARASITE-HOST INTERACTIONS
20. ANS: E PTS: 1 DIF: Easy
TOP: PARASITE-HOST INTERACTIONS
21. ANS: E PTS: 1 DIF: Moderate
TOP: PARASITE-HOST INTERACTIONS
22. ANS: B PTS: 1 DIF: Difficult
TOP: FORCES CONTRIBUTING TO COMMUNITY STABILITY
23. ANS: E PTS: 1 DIF: Easy
TOP: FORCES CONTRIBUTING TO COMMUNITY STABILITY

24. ANS: D PTS: 1 DIF: Moderate
TOP: FORCES CONTRIBUTING TO COMMUNITY STABILITY
25. ANS: E PTS: 1 DIF: Moderate
TOP: FORCES CONTRIBUTING TO COMMUNITY STABILITY
26. ANS: B PTS: 1 DIF: Difficult
TOP: FORCES CONTRIBUTING TO COMMUNITY STABILITY
27. ANS: D PTS: 1 DIF: Moderate
TOP: FORCES CONTRIBUTING TO COMMUNITY STABILITY
28. ANS: E PTS: 1 DIF: Easy
TOP: FORCES CONTRIBUTING TO COMMUNITY INSTABILITY
29. ANS: A PTS: 1 DIF: Moderate
TOP: FORCES CONTRIBUTING TO COMMUNITY INSTABILITY
30. ANS: E PTS: 1 DIF: Moderate TOP: EXOTIC INVADERS
31. ANS: D PTS: 1 DIF: Moderate TOP: EXOTIC INVADERS
32. ANS: A PTS: 1 DIF: Moderate TOP: BIOGEOGRAPHIC PATTERNS
33. ANS: D PTS: 1 DIF: Difficult TOP: BIOGEOGRAPHIC PATTERNS
34. ANS: A PTS: 1 DIF: Moderate TOP: THREATS TO BIODIVERSITY
35. ANS: C PTS: 1 DIF: Moderate TOP: THREATS TO BIODIVERSITY
36. ANS: E PTS: 1 DIF: Easy TOP: SUSTAINING BIODIVERSITY
37. ANS: B PTS: 1 DIF: Moderate TOP: SUSTAINING BIODIVERSITY
38. ANS: A PTS: 1 DIF: Moderate OBJ: TYPE: Selecting the Exception
39. ANS: A PTS: 1 DIF: Easy OBJ: TYPE: Selecting the Exception

MATCHING

40. ANS: A PTS: 1 DIF: Difficult
41. ANS: F PTS: 1 DIF: Difficult
42. ANS: H PTS: 1 DIF: Difficult
43. ANS: B PTS: 1 DIF: Difficult
44. ANS: I PTS: 1 DIF: Difficult
45. ANS: G PTS: 1 DIF: Difficult
46. ANS: C PTS: 1 DIF: Difficult
47. ANS: E PTS: 1 DIF: Difficult
48. ANS: D PTS: 1 DIF: Difficult
49. ANS: K PTS: 1 DIF: Difficult
50. ANS: J PTS: 1 DIF: Difficult
51. ANS: D PTS: 1 DIF: Easy OBJ: TYPE: Classification Questions
52. ANS: A PTS: 1 DIF: Moderate OBJ: TYPE: Classification Questions
53. ANS: C PTS: 1 DIF: Moderate OBJ: TYPE: Classification Questions
54. ANS: B PTS: 1 DIF: Easy OBJ: TYPE: Classification Questions
55. ANS: E PTS: 1 DIF: Easy OBJ: TYPE: Classification Questions
56. ANS: E PTS: 1 DIF: Easy OBJ: TYPE: Classification Questions
57. ANS: C PTS: 1 DIF: Moderate OBJ: TYPE: Classification Questions
58. ANS: A
59. ANS: E
60. ANS: D
- 2
Mod.
Mod.
Mod.