Community Ecology

1. All organisms living together in a place are called a _____.
2. Competition shapes communities because there are usually limited _____.
3. The attempt of two organisms trying to utilize the same resource is called _____.
4. No two species can occupy the same niche indefinitely without competition driving one to _____.
5. _____ species partition available resources, reducing competition between them.
6. _____ is a term that describes the long-term evolutionary adjustments of species to one another.
7. Secondary compounds play a defensive role for plants to keep from being eaten by _____.
8. Aposematic, or warning coloration, serves to protect an animal or plant by signaling to potential _____ to stay away.
9. In _____ mimicry, unprotected species resemble others that are distasteful.
10. In _____ mimicry, two or more unrelated but protected species resemble one another, thus achieving a kind of group defense.
11. _____ relationships are those in which two or more kinds of organisms live together in often elaborate and more or less permanent relationships.
12. Some animals are _____ colored and blend in with their surroundings.
13. The way in which an organism utilizes its environment may be called

    A. resource partitioning
    B. its habitat
    C. competitive exclusion
    D. intraspecific competition
    E. its niche

14. In this relationship, one organism serves as a host to another organism, usually to the host's disadvantage.

    A. predation
    B. parasitism
    C. mutualism
    D. commensalism
    E. symbiotic

15. A relationship which occurs when one member of the relationship is neither helped nor harmed and the other member derives some benefit is called

    A. predation
    B. parasitism
    C. mutualism
    D. commensalism
    E. sympatric

16. A relationship in which both members benefit is called

    A. predation
    B. parasitism
    C. mutualism
    D. commensalism
    E. sympatric

17. The holistic concept of communities, as put forth by Clements, says that

    A. communities are formed from coevolved species that function together
    B. communities are made of an aggregation of species that happen to co-occur at the same place and time
    C. communities are composed of clusters of adaptively radiated species
    D. communities consist of unrelated groups that co-occupy niches
    E. communities include groups of species that compete for the same niche

18. Communities evolve to have greater biomass and species richness in a process called

    A. sympatric interactions
    B. adaptive modifications
    C. succession
    D. symbiotic relationships
    E. competitive exclusion

19. Paleontological studies indicate that, over millions of years,

    A. groups of species that have coevolved rise and go extinct together
    B. species that occurred together in the distant past still occur together today; the community has held constant
    C. species that arose recently have driven some older species extinct in certain communities
    D. species seem to come and go individually as niches within a community become available
    E. only a and b are true

20. The pattern of living or the function of an organism in a community is called its

A. niche
B. habitat
C. hierarchy
D. speciation
E. predation

21. The actual niche the organism is able to occupy in the presence of competitors is called its

A. fundamental niche
B. realized niche
C. interference niche
D. intraspecific niche
E. exploitative niche

22. Competition between individuals of a single species is called

A. interspecific competition
B. exploitative competition
C. interference competition
D. fundamental competition
E. intraspecific competition

23. Gause said that if two species attempt to occupy the same niche, with limited resources, one of them will become

A. a commensal
B. parasitic
C. a predator
D. extinct
E. symbiotic

24. Resource partitioning can often be seen in similar species that occupy the same geographic area. These species avoid competition by living in different portions of the habitat or by utilizing different food or other resources and are called

A. sympatric species
B. allopatric species
C. competitive species
D. fundamental species
E. exploitative species

25. Some insect species have coevolved with particular flowering plants, to assist them in pollination and defense. Plants have evolved special traits to benefit the insects, providing

A. food
B. shelter
C. protection
D. water
E. all of the above

26. Plant morphological defenses do not include

A. spikes and thorns
B. chemical substances
C. plant hairs
D. deposits of silica-like substances in the leaves
E. nectar in the flowers

27. Chemicals that play the dominant role in protecting plants from being eaten by herbivores or predators are called

A. primary compounds
B. secondary chemical compounds
C. poisons
D. oils
E. amino acids

28. Cardiac glycosides, molecules causing a drastic effect on vertebrate heart function, are produced as defense chemicals by plants, which belong to

A. the milkweed and dogbane families
B. the mustard family
C. grasses
D. poison ivy/oak/sumac
E. the bean family

29. A herbivore can avoid competition from other species for food by acquiring the ability to

A. be tolerant to some secondary compounds, allowing it to feed on an underutilized resource
B. be tolerant to some primary compounds, allowing it to feed on an overutilized resource
C. become dormant and not require energy during hot, dry summer months
D. alter its reproductive behavior, allowing it to utilize scarce resources
E. all of the above

30. If a certain insect uses a specific plant secondary substance as a signal to feed, instead of a warning to stay away, this is an example of

A. failure of natural selection
B. modification of the environment
C. coevolutionary adaptation
D. reproductive strategy
E. survival of the fittest

31. Animals defend themselves against predators by all of the following except

A. warning coloration
B. cryptic coloration
C. chemical defenses such as poisons and stings
D. parasitism
E. aposematic coloration

32. Insects that feed on milkweed plants are generally brightly colored. Such coloration is called an

A. Batesian mimicry
B. apoptosis
C. cryptic coloration
D. warning coloration
E. none of the above

33. Some insects that lack any specific chemical defenses blend with their environment to avoid predators. This type of defense strategy is called

A. Batesian mimicry
B. apoptosis
C. cryptic coloration
D. warning coloration
E. Müellerian mimicry

34. Chemical defenses are found in

A. marine animals
B. insects
C. plants
D. snakes/spiders/fishes
E. all of the above

35. Coevolution is based on

A. competition
B. predation
C. natural selection
D. symbiosis
E. all of the above

36. All of the following are types of symbiosis except

A. commensalism
B. camouflage
C. predation
D. parasitism
E. mutualism

37. If in a relationship the organism growing on the host benefits, and the host is unharmed, the relationship is called

A. parasitism
B. mutualism
C. commensalism
D. tolerance
E. predation

38. The symbiotic relationship between cattle egrets and cape buffalo is an example of

A. mutualism
B. parasitism
C. commensalism
D. predation
E. competition

39. Insects that lay eggs on living hosts are called

A. ectoparasites
B. endoparasites
C. brood parasites
D. parasitoids
E. predators

40. Two or more unrelated but protected species resemble one another, having bright colors, thus achieving a kind of group defense. This phenomenon of similar coloration is called

A. Batesian mimicry
B. Müellerian mimicry
C. aposematic coloration
D. warning coloration
E. mutualistic coloration

41. A symbiotic relationship in which both organisms benefit is

A. parasitism
B. mutualism
C. commensalism
D. tolerance
E. predation

42. Which statement is an accurate interpretation of the outcome in an ecosystem when a major predator is removed?

A. the remaining community adjusts and quickly becomes stable
B. the diversity of the ecosystem actually increases
C. the diversity of the ecosystem decreases since there is an increase in competition
D. the diversity of the ecosystem decreases because parasites become more of a problem
E. the diversity of the ecosystem decreases because new herbivores move in

43. Alligators excavate holes in the bottom of bodies of water. During times of severe drought these holes act as refugia for various aquatic organisms that might perish if there were no water available. Thus, alligators in this system can be classified as a

A. keystone species
B. symbiotic species
C. sympatric species
D. allopatric species
E. refugistic species

44. Succession happens because species in the habitat alter that habitat in ways that assists other species. There are three dynamic concepts that are of critical importance for succession to take place. They are

A. facilitation, inhibition, and tolerance
B. symbiotic relationships, facilitation, and aposematic coloration
C. mimicry, coevolution, and competitive exclusion
D. competition, climax communities, and tolerance
E. competition, inhibition, and coevolution

45. Communities evolve to have greater biomass and species richness in a process called

A. symbiosis
B. higher productivity
C. spatial heterogeneity
D. predictability
E. succession

46. The dynamic processes which are of critical importance in succession are

A. tolerance
B. facilitation
C. inhibition
D. a, b, and c
E. a and b

47. Secondary succession takes place in

A. an abandoned agricultural field
B. an area burnt off by a fire
C. a lifeless rock
D. a, b, and c
E. a and b

48. A species that interacts in critical ways with many other elements of an ecosystem is called a

A. predatory species
B. keystone species
C. primary species
D. dominant species
E. succeeding species

49. Lakes become eutrophic by

A. accumulation of organic matter
B. loss of organic matter
C. circulation of water in the lake
D. free exchange of water with outside sources
E. an increase in the number of organisms

50. Primary succession can occur on all of the following except a(an)

A. bare surface
B. rock
C. open water
D. fire-ravaged soil
E. lifeless substrate

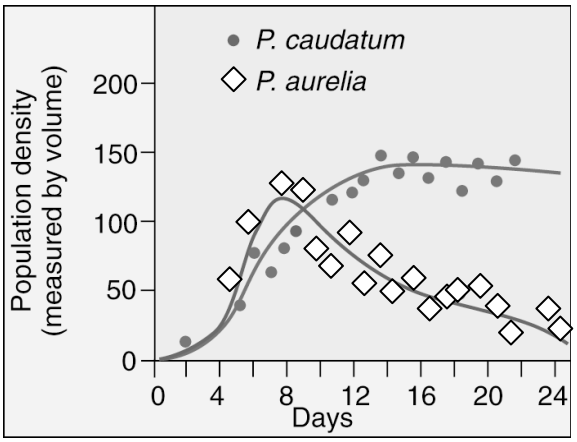
51. The difference in the fundamental niche and the realized niche is

A. the fundamental niche is the actual niche that a species occupies while the realized niche is not
B. the fundamental niche is the entire niche that a species is capable of using while the realized niche is just what is being occupied
C. the fundamental niche is smaller than the realized niche
D. the realized niche is theoretical while the fundamental niche is the entire niche that an organism can use

52. During the mid 1930s, G. F. Gause studied competition among three species of *Paramecium*. Through his experiments he formulated a principle of

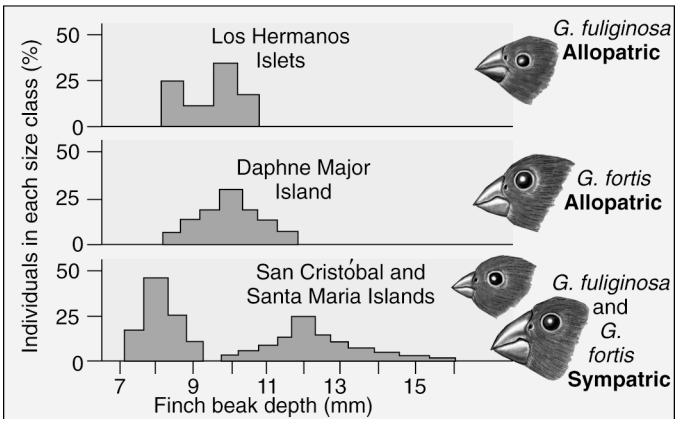
A. niche overlap
B. exploitative competition
C. metapopulation fluctuation
D. competitive exclusion
E. interspecific competition

53. Which statement correctly interprets the graph?



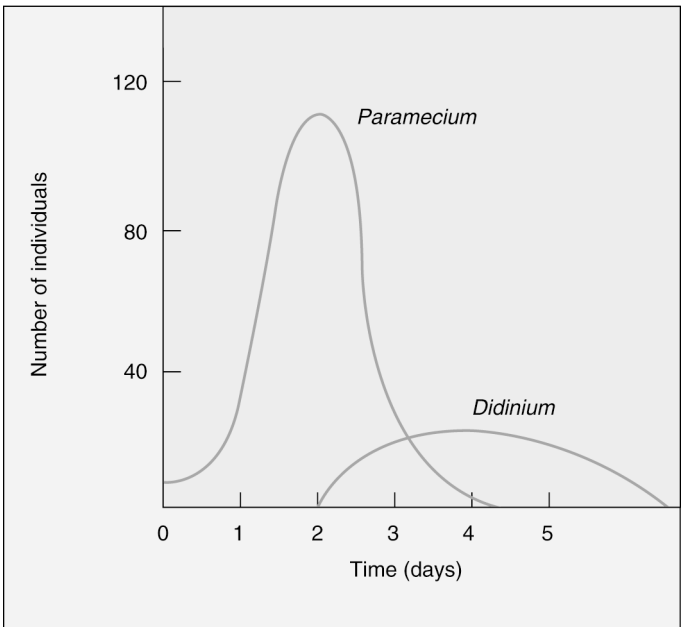
A. *Paramecium caudatum* drives *Paramecium aurelia* to near extinction.
B. *Paramecium aurelia* drives *Paramecium caudatum* to near extinction.
C. *Paramecium caudatum* and *Paramecium aurelia* are able to compete for the same resource and their population densities are not affected.
D. *Paramecium caudatum* and *Paramecium aurelia* are unable to exist and both populations go extinct after 24 days.

54. Two of Darwin's finches display a character displacement when they occur as sympatric species. Which of the statements correctly interprets the graph?



A. Both species have the same size beak on Santa Maria Island.
B. Both species have the same size beaks on Daphne Major.
C. Both species have the same size beaks on Los Hermanos Island.
D. The two species have different beak sizes when they occur on the same island.
E. The two species feed on different food resources; one feeds on seeds while the other feeds on insects.

55. Which statement is the correct interpretation of the graph?



A. The population of *Didinium* goes extinct with the addition of *Paramecium* on day 4.
B. The population of *Didinium* continues to increase and remains high even after the extinction of the *Paramecium*.
C. The population of *Paramecium* goes extinct with the addition of *Didinium* on day 8.
D. The population of *Didinium* increased but then went extinct after the population of *Paramecium* went extinct.
E. The population of *Didinium* is able to increase at the expense of the *Paramecium* population. After a brief period both populations are able to coexist.

56. Which of the following statements accurately reflects the differences between Batesian mimicry and Müellerian mimicry?

A. In Batesian mimicry the model must behave differently than the mimic; in Müellerian mimicry they behave the same.
B. In Batesian mimicry the model must be more dangerous than the mimic; in Müellerian mimicry they are both dangerous.
C. Batesian mimicry does not differ from Müellerian mimicry. Two different scientists discovered these two types at the same time, and they disagreed on what to call it.
D. Batesian mimicry differs from Müellerian mimicry in that they occur on different continents—Batesian on the North American and Müellerian on the European.
E. Batesian mimicry involves invertebrates; Müellerian mimicry involves vertebrates.

57. Which of the following is an example of commensalism?

A. a tapeworm living in the intestines of a mule deer
B. epiphytes growing on the trunk of a tree
C. a female mosquito sucking blood from a musk oxen
D. aphids and their ant tenders
E. acacia trees and their ants

58. Match each of the following.

_____A. Organisms that possess this property are poisonous, sting, or are otherwise harmful; commonly black, yellow, and red in color	1. coevolution
_____B. Is the process by which different kinds of organisms adjust to one another by genetic change over long periods of time	2. aposematic coloration
_____C. It is a situation in which a palatable organism resembles another kind of organism that is distasteful or toxic	3. cryptic coloration
_____D. Organisms are not specially protected and develop strategies to blend in the surroundings	4. secondary chemical compounds
_____E. Most important in the defense of plants against herbivores; compounds are characteristic of individual plant families	5. Batesian mimicry

Answer Key

No. on Test	Correct Answer
1	community
2	Resources
3	Competition
4	Extinction
5	Sympatric
6	Coevolution
7	Herbivores
8	Predators
9	Batesian
10	Müellerian
11	Symbiotic
12	Cryptically
13	E
14	B
15	D
16	C
17	A
18	C
19	D
20	A
21	B
22	E
23	D
24	A
25	A
26	E
27	B
28	A
29	A
30	C
31	D
32	D
33	C
34	E

35	E
36	B
37	C
38	C
39	D
40	B
41	B
42	C
43	A
44	A
45	E
46	D
47	E
48	B
49	A
50	D
51	B
52	D
53	A
54	D
55	D
56	B
57	B
58	1-B, 2-A, 3-D, 4-E, 5-C