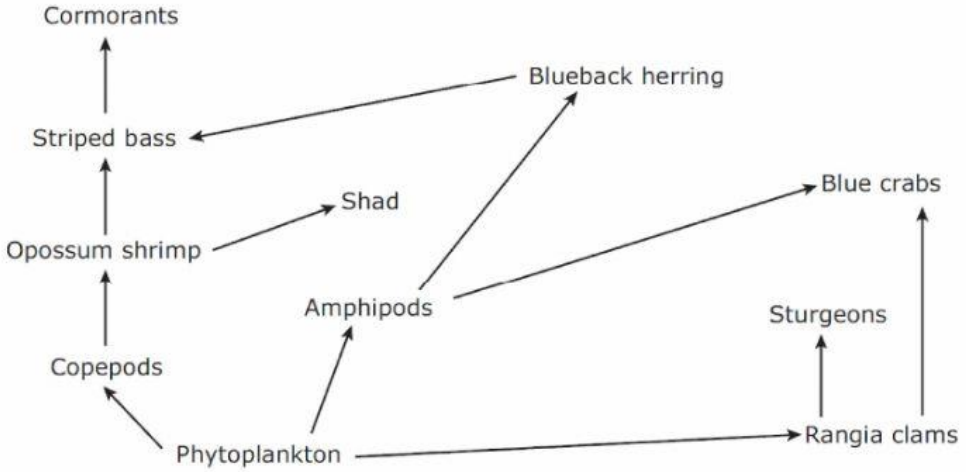
Name: _____ Class: _____ Date: _____ ID: A

Symbiosis Test

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

____ 1. In the aquatic food web below, which two organisms have a predator-prey relationship?



a. Copepods and amphipods
b. Shad and sturgeons
c. Blue crabs and rangia clams
d. Sturgeons and blue crabs

> Nitrogen-fixing bacteria called rhizobia enter the root hairs of bean plants. The bacteria are located in small root structures called nodules. The plants provide energy to the bacteria, and in return, the plants receive nitrogen for growth from the bacteria.

____ 2. According to the information in the box, which of these best describes the relationship between rhizobia and bean plants?

a. Parasitism
b. Opportunism
c. Commensalism
d. Mutualism

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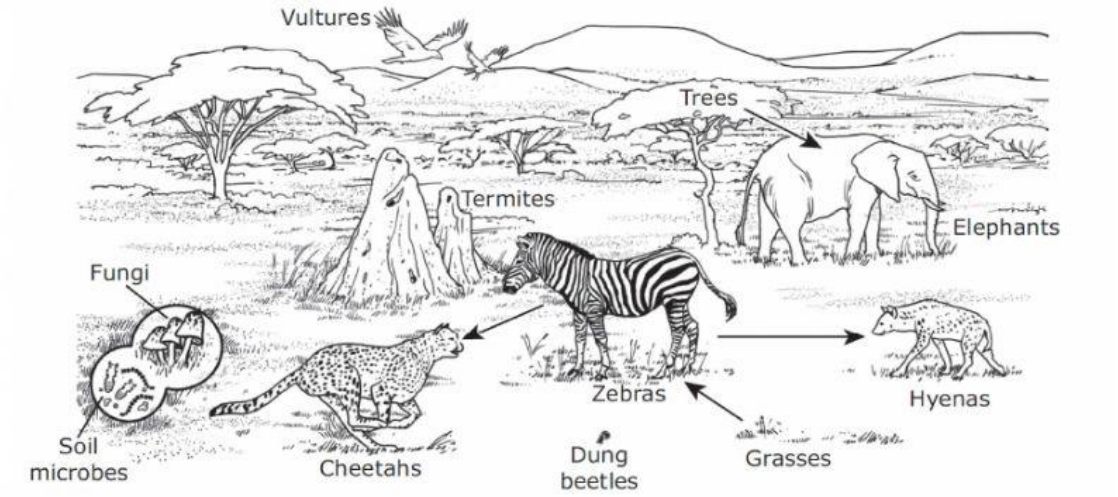
___ 3. The African savanna is a grassland scattered with shrubs and small trees. Some of the organisms that live in the savanna are shown below.



Which two types of organisms have a producer-consumer relationship in this African savanna?

a. Trees and elephants
b. Zebras and hyenas
c. Hyenas and cheetahs
d. Fungi and dung beetles

___ 4. While exploring a lake in Argentina, Laguna del Diamante (Diamond Lake), scientists found rocks covered with mats made of photosynthetic microbes. Flamingos in the area filter the nutrient-rich microbes by pumping the lakewater through their bill. What is the relationship between the photosynthetic microbes and the flamingos in the Laguna del Diamante ecosystem?

a. The microbes are producers, and the flamingos are consumers.
b. The microbes are parasites,and the flamingos are hosts.
c. The microbes are carnivores, and the flamingos are predators.
d. The microbes are herbivores, and the flamingos are carnivores.

___ 5. Which situation best represents a mutualistic relationship?

a. An armadillo rooting in the soil at the base of an oak tree
b. A human losing blood to a feeding mosquito
c. An orchid being pollinated by a nectar collecting wasp
d. A tapeworm absorbing nutrients from the intestine of a dog

___ 6. Beechdrops (*Epifagus virginiana*) are leafless plants that lack chlorophyll. Beechdrops get their nourishment from the roots of beech trees, which reduces the amount of nutrients available to the trees themselves. This interaction is best described as —

a. parasitic
b. commensalistic
c. mutualistic
d. predatory

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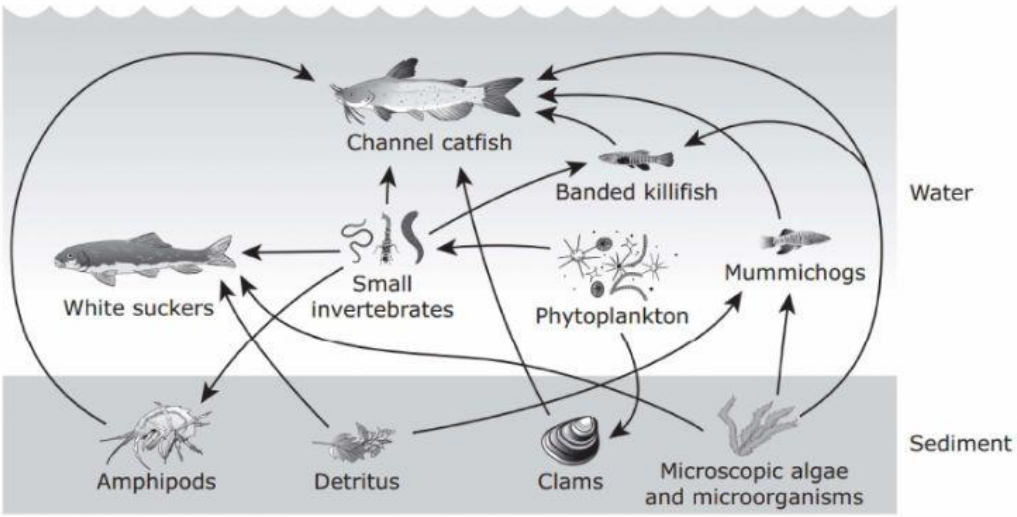
____ 7. Within a certain community, crows actively eat brightly colored beetles. Which interaction is being displayed between the population of crows and the population of beetles?

a. Commensalism
b. Predation
c. Parasitism
d. Mutualism

____ 8. Which of these best describes a parasite-host relationship?

a. Bacteria feed on a dead gypsy moth.
b. A gypsy moth caterpillar eats the leaves of a plant.
c. Birds catch gypsy moths and eat them for food.
d. A fungus lives in the body of a live gypsy moth catepillar.

____ 9. The partial food web shown below is found in an aquatic environment. This type of environment has many organisms in the same trophic levels.



Which two types of organisms in this aquatic food web have a producer–consumer relationship?

a. Phytoplankton and mummichogs
b. Microscopic algae and white suckers
c. Small invertebrates and amphipods
d. Amphipods and channel catfish

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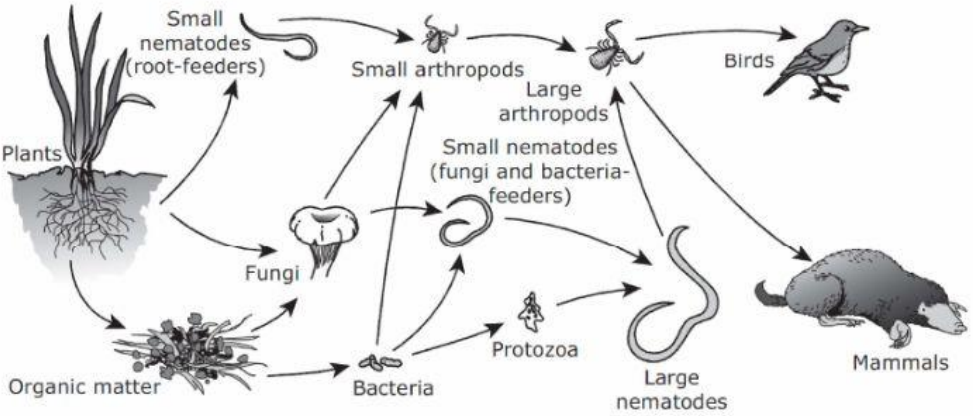
____ 10. Which of these correctly describes a relationship between organisms in the soil food web below?



a. Bacteria get nutrients from organic matter.
b. Mammals are predators of birds.
c. Nematodes prey on arthropods.
d. Protozoa get nutrients from small arthropods.

____ 11. A tick feeds on the blood of a deer and can transmit diseases. Which of these terms describes the relationship between the tick and the deer?

a. mutualism
b. competition
c. predation
d. parasitism

____ 12. A particular species of unicellular organism inhabits the intestines of termites, where the unicellular organisms are protected from predators. Wood that is ingested by the termites is digested by the multicellular organisms, forming food for the termites. The relationship between these two species can be described as

a. beneficial to both species
b. harmful to both species
c. predator/prey
d. parasite/host

____ 13. Which of the following best describes a difference between a mutualistic relationship and a parasitic relationship?

a. Parasitism involves only two organisms, while mutualism involves many organisms.
b. Parasitism harms both organisms, while mutualism harms only one organism.
c. Parasitism continues for many generations, while mutualism is limited to one generation
d. Parasitism benefits only one organism, while mutualism benefits both organisms.

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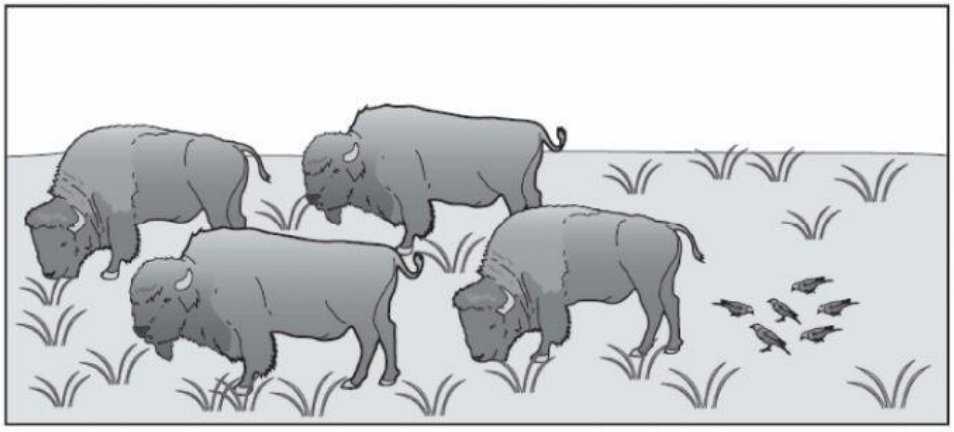
____ 14.



At one time large herds of bison roamed across the Great Plains. Brown-headed cowbirds often followed the bison, capturing and eating insects that scattered as the bison walked through the grasses. This relationship between the bison and the cowbird was —

a. parasitic
b. commensal
c. competitive
d. predatory

____ 15. A lichen is composed of two organisms, a fungus and a cyanobacterium. The fungus provides a growing surface, moisture, and nutrients to the cyanobacterium. The cyanobacterium provides food to the fungus. This relationship is considered to be an example of which of the following?

a. Parasitism
b. Commensalism
c. Neutralism
d. Mutualism

____ 16. Baleen whales eat zooplankton by taking a large amount of water into their mouth. These whales use special structures in their mouth to separate zooplankton from the water. Because baleen whales eat zooplankton, they are classified as -

a. parasites
b. producers
c. hosts
d. predators

Epiphytes

- Epiphytes (example: some orchids) live on trees so they can receive more sunlight.
- Epiphytes have aerial roots that absorb water and minerals from rainwater.
- Epiphytes do not affect the trees on which they live.

____ 17. Which of these best describes the relationship between epiphytes and trees?

a. Predation
b. Migration
c. Commensalism
d. Parasitism

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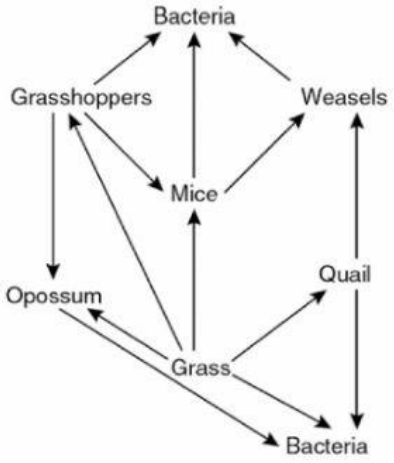
____ 18.



In this food web, the bacteria probably function as —

a. carnivores
b. herbivores
c. producers
d. decomposers

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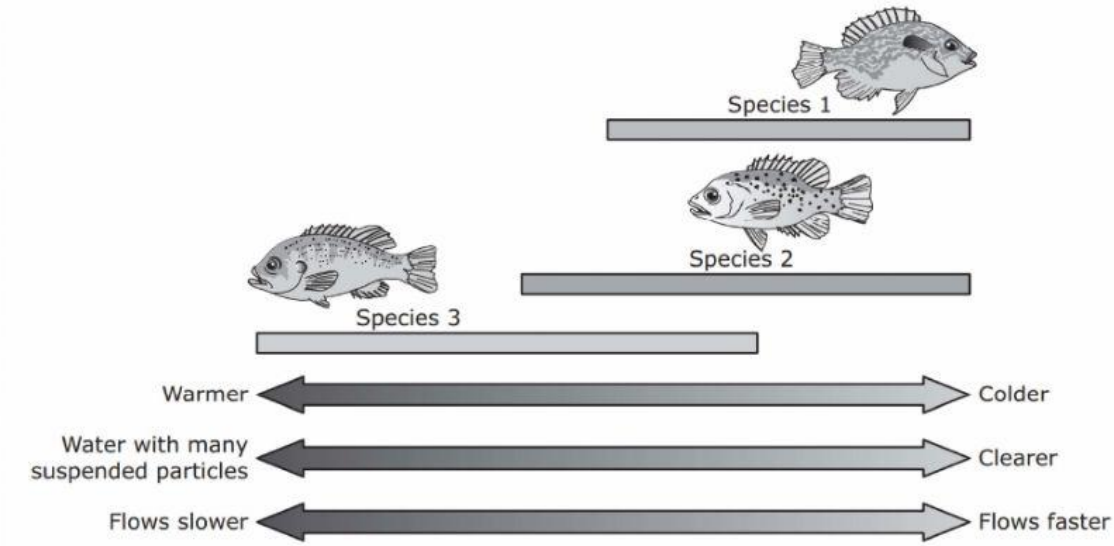
____ 19. The graph below shows the range of water conditions preferred by three species of fish in an Ozark stream.



Water with which of these conditions would cause the most competition for resources among all three species of fish?

a. Very cold, very clear, and very fast
b. Mild temperatures, some suspended particles, flows very fast
c. Very warm, very clear, and very slow
d. Mild temperatures, some suspended particles, flows at a medium speed

____ 20. Competition for biotic resources can be illustrated by organisms fighting for a limited amount of

a. mates for breeding
b. space for nesting
c. air to breathe
d. water to drink

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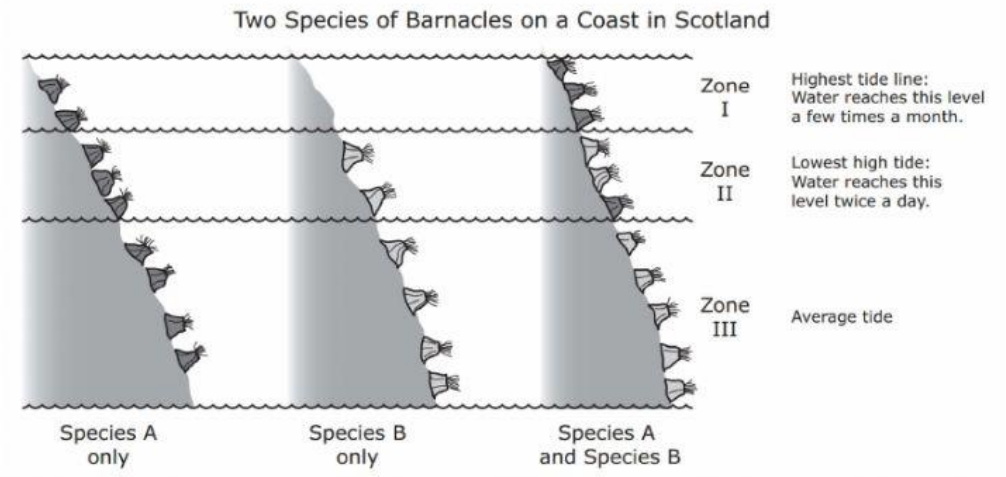
____ 21. Barnacles are marine organisms that live attached to surfaces as adults. A scientist studies two barnacle species that live on rocks on a coast in Scotland. In some rocky areas Species A is found alone. In other rocky areas Species B is found alone. In still other rocky areas both species are found together. The diagram below shows the two barnacle species on rocks in their habitats.



If Species B were removed from the rocky areas it shares with Species A, Species A would most likely inhabit —

a. Zone I only
b. Zones I, II, and III
c. Zones I and II only
d. Zone III only

____ 22. A native species and a non-native species are competing for resources within the same ecosystem. The non-native species is more likely to survive than the native species in which of the following situations?

a. Both the native species and the non-native species thrive on the same food source.
b. The native species is immune to certain pathogens in the ecosystem.
c. The non-native species has no natural enemies in the ecosystem.
d. Predators prey on both native and non-native species.

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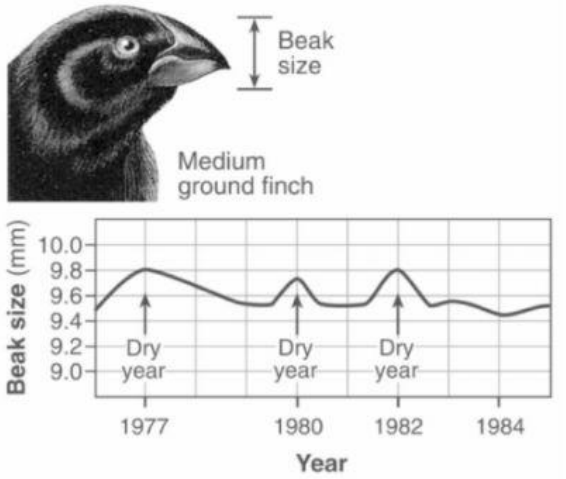
____ 23. Average beak sizes of the seed-eating medium ground finch on one of the Galapagos Islands are shown in the diagram below. During wet years, all types of seeds are abundant. The medium ground finch prefers to eat small seeds that are easy to crush. However, during droughts (dry years), when small seeds are not as abundant, they eat the larger seeds on the island.



How would the introduction of another species of seed-eating ground finch to the island most likely influence the medium ground finch?

a. The medium ground finch would face increased competition for seeds.
b. The finches would interbreed and produce a new species of finch.
c. The medium ground finch would become a parasite of the introduced species.
d. The finches would not compete, since they both eat seeds.

____ 24. When taken to a new habitat, non-native plants often threaten native plants of the new habitat. Why do non-native plants threaten native plants?

a. Non-native plants are able to mutate rapidly.
b. Non-native plants cause native animals to relocate.
c. Non-native plants are to be used for medicine.
d. Non-native plants compete with native plants for resources.

____ 25. Competition for biotic resources can be illustrated by organisms fighting for a limited amount of

a. mates for breeding
b. space for nesting
c. air to breathe
d. water to drink