Name _____ Date _____

Ecosystems

Use the text to answer each question below.

1. An ecosystem is a group of organisms and the habitat in which they live together. All organisms in an ecosystem interact with each other and their environment.

Some organisms interact as part of a food chain or food web. A food web is a complicated set of interrelated food chains all found in one ecosystem. Matter and energy are transferred from one organism to another at each step. They go through the producers like plants, which make their own food, consumers like animals, which eat other living things, and decomposers like bacteria, which break down dead organisms and help cycle energy and nutrients back into the environment.

For example, in the hot African Savannah, a herd of antelope gets energy from the grass they eat. A pride of lions chases down and consumes an antelope, gaining energy from the flesh of their prey. One of the lions is very old, and soon dies. Scavengers gain energy as they pick over his dead body. This is just one example of a string of events that is the food chain.

In the food chain described above, what are the producers?

A. the antelope that eat the grass
B. the scavengers that eat the dead lion
C. the grasses the antelope eat
D. the lions that eat the antelope

2. A parasite is an organism that lives on or in another, usually larger organism called a host. While the host may provide food or safety, it gets nothing in return from the parasite. Tapeworms or ringworms are parasites sometimes found in humans.

Unlike a parasitic relationship, a symbiotic relationship is between two organisms of different species in which one or both of the organisms may benefit or be neutrally affected. For example, the tiny bacteria in your stomach have a symbiotic relationship with you: You supply them with food, and they help break down your food and supply you with vitamins that your body can't produce on its own.

In a symbiotic relationship,

A. one organism benefits while its host gets nothing in return.
B. bacteria takes food from your stomach, but does nothing for you.
C. both organisms involved benefit or are neutrally affected.
D. your body produces vitamins and then uses them for nutrition.

3. Scavengers are organisms that help clean a habitat by feeding on dead or rotting flesh. They help break down the remains left behind by carnivores. Vultures and maggots (baby flies) are common scavengers.

Decomposers are organisms that break down the remains of dead animals or plants. Many live in or on the soil. Fungi and bacteria are examples of decomposers.

Which of the following is an example of decomposers at work?

A. a fish eating dead seaweed floating in the water

B. a vulture picking apart a dead mouse in the woods

C. a squirrel gnawing at a dead bird on the ground

D. a fungus growing on a rotten tomato, breaking down its skin

4. Green plants are called producers because they take energy from sunlight and produce food in which the energy is stored. From there the energy goes to organisms that eat the plants, called consumers. Animals that eat only plants are called herbivores. An easy way to remember this is to think of herbs like basil, rosemary, and oregano.

Herbivores are in turn often eaten by another kind of consumer called predators, or carnivores, which means "meat-eaters." These organisms get energy from eating the flesh of other animals. Animals who eat both plants and meat, like humans, are called omnivores, which means “everything-eaters.”

Eventually, even predators die. When they do, tiny fungi and bacteria consume the remains of their bodies. These tiny organisms, called decomposers, get their energy from the flesh of the dead bodies. Decomposers such as bacteria leave behind only the most basic elements in the body, like carbon, nitrogen, and phosphorous. These elements are then washed into the soil by the rain, and the food chain starts all over again.

Which of the following is an example of an omnivore?

A. an herb like basil, which gets energy from the sun

B. a dog, which eats meat and vegetables

C. a dinosaur that only eats marsh grasses

D. a buzzard that only eats roadkill

5. The number of organisms any ecosystem can support is called its carrying capacity. Anything that limits the carrying capacity of an ecosystem is called a limiting factor. Such factors might include energy, air, or space. The stability of an ecosystem depends on the relationships of all the organisms in that ecosystem. When an ecosystem becomes unstable, some species may be crowded out, die off, or be replaced by other species.

Each species in an ecosystem has specific sets of relationships. We call the place of a species in these relationships its niche.

An ecosystem's stability might change if a new organism is introduced into the habitat. If this organism has no natural predators, it might reproduce in an uncontrolled manner until a limiting factor like food or space stops it. This new organism might take over the niche of another species. Such organisms are called invasive species because they invade an ecosystem.

Which of the following is a result of a limiting factor in an ecosystem?

A. A pond has only produced a small amount of algae, so the fish population is also small.

B. The weather was extra humid last summer and there were more mosquitos than ever before.

C. A farmer planted new grass and months later his animals looked healthier than they've looked in years.

D. This year, ticks are supposed to be worse than in previous years, with a huge number of them carrying Lyme Disease.