

NAME: \_\_\_\_\_

Score			GradeCam ID												
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

1.

2. In one study, scientists found that the number of raccoons increased where people built homes in their habitats. Which of the following is most likely the reason why the number of raccoons increased?

- A. Raccoons no longer lived in wild areas.
- B. Raccoons found more food living near humans.
- C. More predators of raccoons live near people's homes.
- D. People destroyed raccoon habitats when they built homes.

3. In a forest, how do decomposers help other organisms survive?

- A. They release oxygen into the air that animals breathe.
- B. They put nutrients into the soil that plants use to grow.
- C. They provide shelter in forests where animals can hide.
- D. They use sunlight to make food for plants and animals.

4. A population of deer existed for centuries in a hilly region of England. The landowners decided to introduce sheep into the same area. Deer and sheep eat some of the same kinds of plants. After the sheep were introduced, the deer population began to decline. How could the decline in the deer population be explained?

- A. Sheep competed with the deer.
- B. The sheep were smaller than the deer.
- C. The food web became too complex.
- D. Sheep are at a higher trophic level than deer.

5. A simple food chain includes hawks, lizards, and insects. Which will most likely happen to the lizard and hawk populations if a pesticide is sprayed to kill the insects, and the lizard and hawk populations cannot find other food in this ecosystem?

- A. Both the lizard population and the hawk population will increase.
- B. Both the lizard population and the hawk population will decrease.
- C. The lizard population will increase, but the hawk population will decrease.
- D. The lizard population will decrease, but the hawk population will increase.

6. A species of giant pandas lives only in central China. Bamboo, a tall, green tropical plant, is the main food source for these animals. Large areas of bamboo are being cut down in central China to make room for growing other crops.

What will most likely happen to these giant pandas?

- A. They will become endangered or extinct.
- B. They will migrate to warmer areas of China.
- C. They will become carnivores.
- D. They will begin to live in caves.

7. The Great Barrier Reef has a number of endangered species that live only in that ecosystem. What would most likely happen if pollution killed most of the coral that made up the reef?

- A. The endangered species would become extinct.
- B. The animals on the reef would find a new habitat.
- C. The population size of the endangered species would increase.
- D. The endangered species would take the place of the dead coral.

8. An example of a human activity that has had a positive effect on the environment is the

- A. disruption of natural habitats through urbanization
- B. exploitation of rare South American birds
- C. use of reforestation to control erosion
- D. uncontrolled hunting of endangered species of animals

9. Use this information to answer the following question(s).

Acid rain is a serious environmental problem in large areas of Canada and the northeastern United States, including New York State. It is partly created as rain "washes out" sulfur and nitrogen pollutants from the air. Acid rain alters the fundamental chemistry of sensitive freshwater environments and results in the death of many freshwater species. The principal sources of this pollution have been identified as smokestack gases released by coal-burning facilities located mainly in the midwestern United States.

"Unpolluted" rain normally has a pH of 5.6. Acid rain, however, has been measured at pH values as low as 1.5, which is more than 10,000 times more acidic than normal. Commonly, acid rain has a pH range of 3 to 5, which changes the acidity level of the freshwater environment into which it falls. The effect of the acid rain depends upon the environment's ability to neutralize it. Evidence is accumulating, however, that many environments are adversely affected by the acid rain. As a result, the living things within lakes and streams that cannot tolerate the increasing acidity gradually die off.

There are many environmental problems that result from acid rain. Most of these problems center around the food web upon which all living things, including humans, depend. If freshwater plants, animals, and protists are destroyed by the acid conditions, then terrestrial predators and scavengers dependent on these organisms for food are forced to migrate or starve. These changes in a food web can eventually affect the human level of food consumption.

Which food chain includes organisms that would most immediately be affected by acid rain?

- A. grass → rabbit → fox → decay bacteria
- B. algae → aquatic insect → trout → otter
- C. shrub → mouse → snake → hawk
- D. tree → caterpillar → bird → lynx

Explain your answer using evidence from the passage.

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**1. Water hyacinth plants are classified as an invasive species in most states. The plants grow on top of water and form thick mats, quickly covering the surface of ponds or rivers. Which statement best predicts what will happen when water hyacinth plants enter an ecosystem?**

- A. Other aquatic plant species will have less available sunlight.
- B. All herbivores in the ecosystem will start to eat water hyacinth plants.
- C. Other aquatic plant species will have more available sunlight.
- D. The water hyacinth plants will have no effect on the ecosystem.

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2.

**3. Japanese beetles and gypsy moths were accidentally introduced into North America. The most probable reasons these insects have become serious pests in North America is that they**

- A. were bred by research scientists and are resistant to all pesticides
- B. are protected by environmental laws and feed on other insects species
- C. have few natural enemies and reproduce successfully
- D. are affected by biological controls and feed on plants

**4. The common brushtail possum is a marsupial native to Australia. This possum was introduced to New Zealand where it had no natural predators and had an abundant food supply. Which of these likely occurred a few years after the introduction of this possum to New Zealand?**

- A. The possums became extinct.
- B. The possums developed shorter life spans.
- C. The possum population grew to a large size.
- D. The possum population evolved into a different species.

**5. The number of chemical industries along New York state's rivers is increasing. What is the most likely consequence of this increased industrialization?**

- A. a decrease in the amount of water needed by industry
- B. a decrease in the amount of water pollution
- C. an increase in the destruction of natural food webs
- D. an increase in the amount of water available for recreational use

**6. Kudzu, a vine covering many acres of North Carolina, was introduced to the United States in 1876 to control erosion. Over the years, scientists found that kudzu creates problems by growing rapidly and preventing other plants from getting sunlight. Which best describes kudzu?**

- A. a noncompetitive species
- B. an invasive, nonnative species
- C. an agent of erosion
- D. an abiotic factor

**7. Reef-building coral are marine animals with single-celled algae living in their tissues. The coral provide protection for the algae and the algae provides food for the coral. Which of these statements best explains what would happen to the coral if the algae die?**

- A. The coral would grow well because it does not have a competitor.
- B. The coral would die because it needs the food produced by the algae.
- C. The coral would grow well because it does not have a parasite.
- D. The coral would die because it cannot produce food for the algae.

**8. The brown tree snake is a nonnative species found on the South Pacific island of Guam. The brown tree snake population in Guam is so large that it negatively affects the humans there.**

**Which statement best explains why the brown tree snake has flourished in Guam?**

- A. There are many animals for food.
- B. There are no natural snake predators.
- C. The climate is ideal for snake reproduction.
- D. The vegetation provides good habitat for hunting.

**9. Tropical rain forests have more plant growth than any other type of environment. This may be because rain forests get more rain than other environments. What is another reasonable scientific explanation for rain forests having the most plant growth?**

- A. Temperatures are warm all year long in the rain forests.
- B. People do not cut down trees in the rain forest.
- C. The leaves high in the rain forest canopy absorb most of the sunlight.
- D. Many birds and insects in the rainforest eat plants.

Year	Number of Members	
	Wolf Population	Moose Population
1970	10	90
1972	12	115
1974	20	145
1976	25	105
1978	18	95
1980	18	98

10. The data table shows the wolf and moose populations recorded at the end of June from 1970 to 1980 on an isolated island national park where no hunting by humans is allowed. Prior to the arrival of wolves on the island (1965), the moose population had increased to over 300 members. Wolves have been observed many times on this island hunting cooperatively to kill moose.

**I. Mark an appropriate scale on the axis labeled "Number of Members of Each Population."**

**II. Mark an appropriate scale on the axis labeled "Year."**

**III. Plot the data for the wolf population on the graph. Surround each point with a small triangle and connect the points.**

**IV. Plot the data for the moose population on the graph. Surround each point with a small circle and connect the points.**

**V. What conclusion is best supported by these population data?**

- a) The wolf population increases in response to increases in moose population.
- b) The wolf population and the moose population increase independently of each other.
- c) The moose population increases in response to increases in wolf population.
- d) Both populations increase and decrease together at the same time.

