

Name _____

Regents Review HW # 2
Ms. Scott

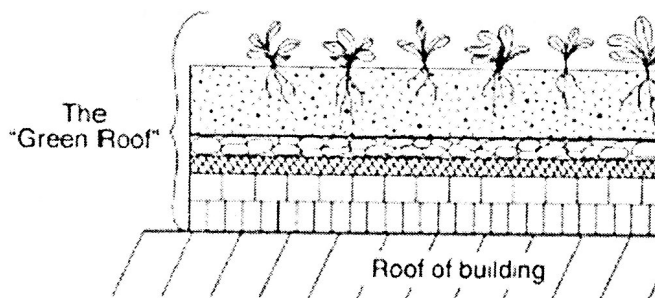
1. Base your answer on the information below, on the accompanying diagram, and on your knowledge of biology.

Green Roofs

People in Albany and New York City are using "green roofs" to improve the environment. A green roof can be added to many buildings that have large, flat roofs. Green roofs have three parts: a protective layer to separate plant roots from the roof of the building, an absorptive layer to catch and hold rainwater, and a layer of plants. Often, green roofs use *Sedum*, a short, desert plant, because it is efficient at storing water in its leaves and can withstand the colder climate.

A green roof saves energy, reduces carbon dioxide in the atmosphere, and prevents rainwater and melting snow from overloading sewer systems. It can also protect the roof of a building from damage. However, green roofs can be expensive to install, and require care and maintenance.

State *one* reason why a green roof reduces the amount of carbon dioxide in the atmosphere. [1]



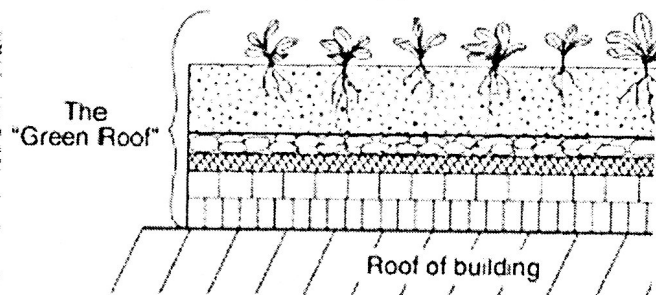
2. Base your answer on the information below, on the accompanying diagram, and on your knowledge of biology.

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State *one* reason why it is important to reduce the amount of carbon dioxide in the atmosphere. [1]



3. Base your answer on the information below, on the accompanying diagram, and on your knowledge of biology.

Green Roofs

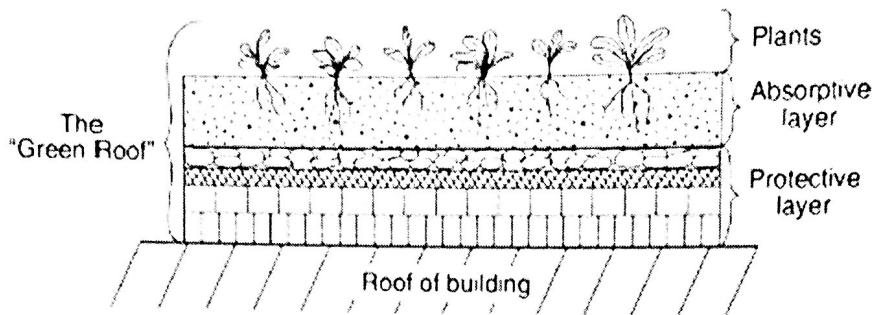
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State *one* disadvantage of a green roof. [1]

4. Deforestation is viewed as a problem in the world today. Describe a cause and an effect of deforestation and a way to lessen this effect. In your answers, be sure to:

- state *one* reason deforestation is occurring [1]
- state *one* environmental problem that results from widespread deforestation [1]
- state *one* way to lessen the effects of deforestation, other than planting trees [1]



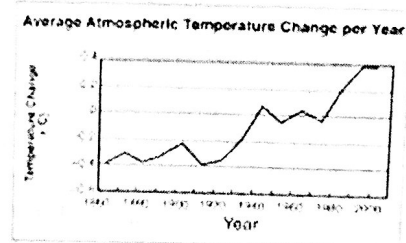
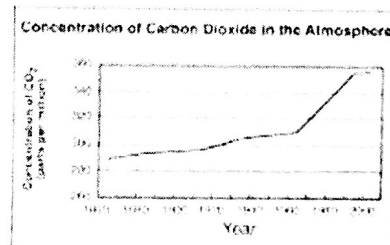
5. Oak trees in the northeastern United States have survived for hundreds of years, in spite of attacks by native insects. Recently, the gypsy moth, which has a caterpillar stage that eats leaves, was imported from Europe. The gypsy moth now has become quite common in New England ecosystems. As a result, many oak trees are being damaged more seriously than ever before.

State *one* biological reason that this imported insect is a more serious problem for the trees than other insects that have been present in the area for hundreds of years.

6. For over 100 years scientists have monitored the carbon dioxide concentrations in the atmosphere in relation to changes in the atmospheric temperature. The accompanying graphs show the data collected for these two factors.

Discuss the overall relationship between carbon dioxide concentration and changes in atmospheric temperature and the effect of these factors on ecosystems. Your answer must include:

- a statement identifying the overall relationship between the concentration of carbon dioxide and changes in atmospheric temperature
- *one* way in which humans have contributed to the increase in atmospheric carbon dioxide
- *one* specific *negative* effect the continued rise in temperature would be likely to have on an ecosystem
- *one* example of how humans are trying to reduce the problem of global warming



7. Human activities continue to place strains on the

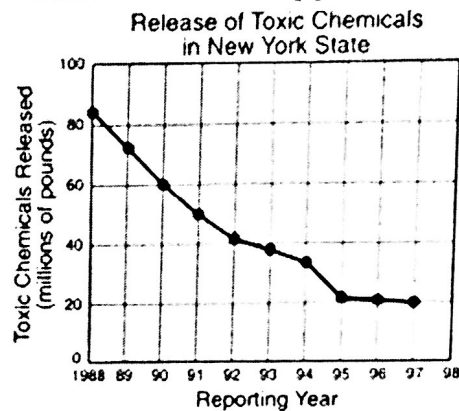
8. Base your answer on the information and graph (see image).

environment. One of these strains on the environment is the loss of biodiversity. Explain what this problem is and describe some ways humans are involved in both the problem and the possible solutions. In your answer be sure to:

- state the meaning of the term *biodiversity* [1]
- state one *negative* effect on humans if biodiversity continues to be lost [1]
- suggest one practice that could be used to preserve biodiversity in New York State [1]

Reducing toxic chemicals released into the environment often requires laws. When making decisions about whether or not to support the passing of such laws, individuals must weigh the benefits against the potential risks if the law is not passed. The amounts of toxic chemicals released into the environment of New York State over a ten-year period are shown in the graph (see image).

State one possible *negative* effect of passing a law to reduce the release of toxic chemicals. [1]

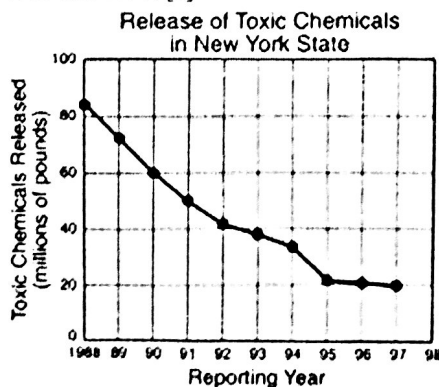


9. Base your answer on the information and graph (see image).

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The amounts of toxic chemicals released into the environment of New York State over a ten-year period are shown in the graph (see image).

State one possible explanation for why the amount of toxic chemicals released remained relatively constant between 1995 and 1997. [1]

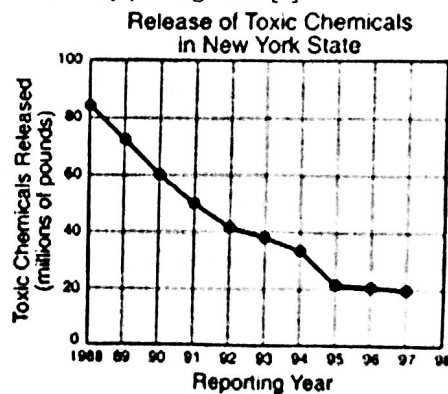


10. Base your answer on the information and graph (see image).

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The amounts of toxic chemicals released into the environment of New York State over a ten-year period are shown in the graph (see image).

State one other type of environmental problem that has been reduced by passing laws. [1]



11. Select *one* of the following ecological problems.

Ecological Problems

Acid rain

Increased amounts of nitrogen and phosphorous in a lake

Loss of biodiversity

For the ecological problem that you selected, on a separate piece of paper briefly describe the problem and state *one* way to reduce it. In your answer be sure to:

- state the ecological problem you selected
- state how humans have caused the problem you selected [1]
- describe *one* specific effect that the problem you selected will have on the ecosystem [1]
- state *one* specific action humans could take to reduce the problem you selected [1]

12. Base your answer on the information and accompanying passage and on your knowledge of biology.

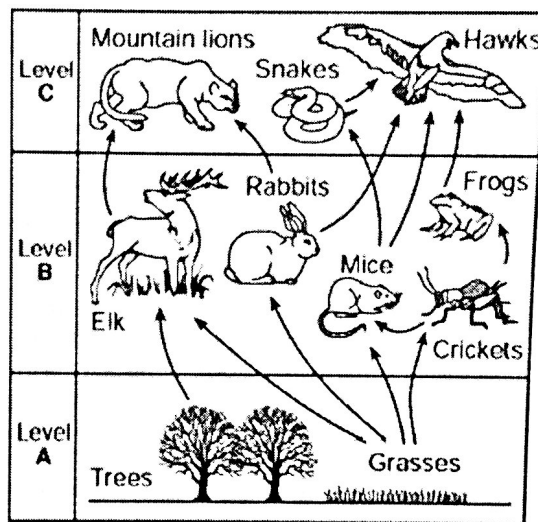
Snowy Owls Move to the South

Snowy owls are large white birds that normally inhabit the cold northern regions of Canada. Recently, scientists and birdwatchers have sighted the snowy owls much farther south than usual.

When snowy owls are in northern areas, they feed on lemmings (small rodents). When lemmings are not available, as in the areas further south, the owls will seek out mice or rabbits as their food source.

Several snowy owls migrated into an area represented by the food web in accompanying image.

Identify *one* population of organisms shown in the food web, other than rabbits or mice, that would likely be affected by the introduction of the snowy owls and explain why their population would be affected. [1]



13. Base your answer on the information and accompanying passage and on your knowledge of biology.

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Identify *one* condition that might cause snowy owls to leave their usual habitat and move to another area. [1]

14. Base your answer on the information and accompanying passage and on your knowledge of biology.

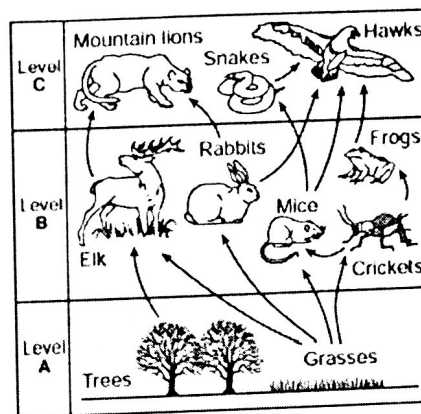
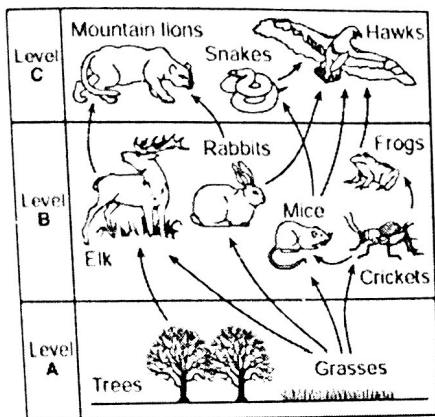
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State which level, A, B, or C, contains the *least* total available energy. Support your answer. [1]



15. Base your answer on the accompanying image, the information below, and on your knowledge of biology.
(see image)

Federal wildlife officials plan to dispatch armed bird specialists into forests of the Pacific Northwest starting this fall to shoot one species of owl to protect another that is threatened with extinction. ...

... "If we don't manage barred owls, the probability of recovering the spotted owls goes down significantly," said Paul Henson, Oregon state supervisor for Fish and Wildlife. The agency's preferred course of action calls for killing 3,603 barred owls in four study areas in Oregon, Washington and northern California over the next four years. ...

... Mr. Henson said unless barred owls are brought under control, the spotted owl in coming decades might disappear from Washington's northern Cascade Range and Oregon's Coast Range, where the barred owl incursion [takeover] has been greatest.

The northern spotted owl was listed as a threatened species in 1990. Barred owls are bigger, more aggressive and less picky about food. Barred owls now cover the spotted owl's range, in some places outnumbering them as much as 5-to-1.

Source: Associated Press, 7/26/13

Certain groups oppose the plan to kill barred owls, in part because they feel it will not solve the problem. They recommend that the focus should be on protecting the habitat of the spotted owl. Describe the role that the habitat plays in the survival of an animal species such as the spotted owl. [1]

Owl vs. Owl



Barred owl

Spotted owl

16. Base your answer on the accompanying passage and on your knowledge of biology.

A field in New York State is mowed all summer long for a number of years. The field is sold, and the new owner decides to stop mowing. Over a number of years, the ecosystem begins to undergo ecological succession. After a series of different plant communities are present, the area eventually becomes a stable forest ecosystem.

Explain why *not* mowing the field allowed the ecosystem to undergo ecological succession. [1]

17. Base your answer on the accompanying image, the information below, and on your knowledge of biology. (see image)

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Explain why it is important to protect the spotted owl from extinction. [1]

Owl vs. Owl



Barred owl



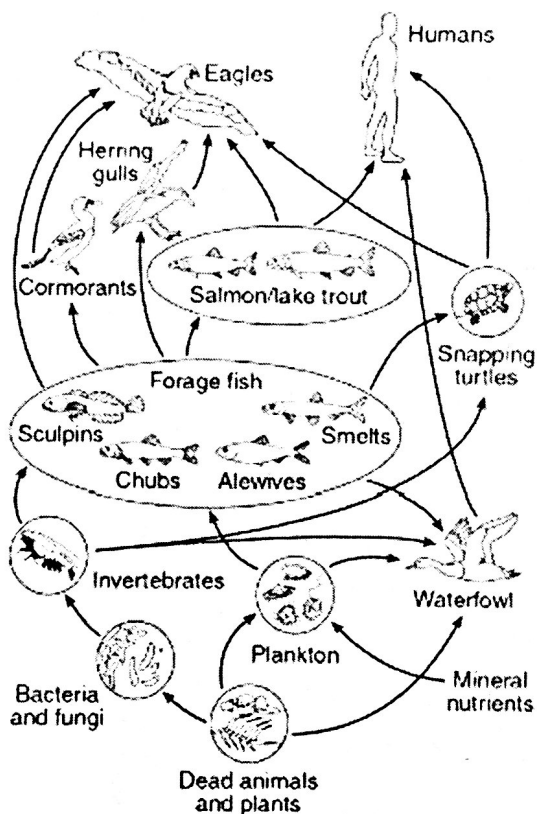
Spotted owl

18. Note: this question was given as three separate questions on the original Regents exam

Base your answer on the accompanying diagram and on your knowledge of biology. The diagram represents a food web typical of the Great Lakes area of New York State.

Some people have argued for the removal of cormorants from the eastern shores of Lake Ontario because of their negative effects on the fishing industry. Describe the consequences of this action. In your answer, be sure to:

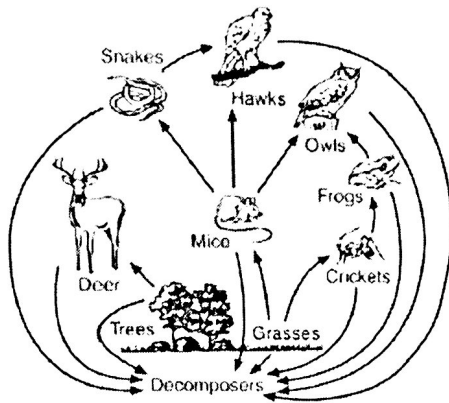
- state *one* reason why removing the cormorants from the food web could have a positive impact on the fishing industry [1]
- state *one* possible effect of removing the cormorants on a species other than fish and support your answer [1]
- describe *one* action, other than removing a population of organisms from the environment, that humans could take to preserve the fishing industry in Lake Ontario [1]



Adapted from: http://www.uwsp.edu/geol/faculty/ritter/geog101/textbook/title_page.html

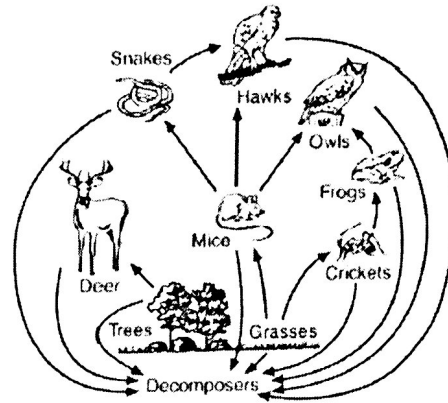
19. Base your answer on the accompanying diagram and on your knowledge of biology. The diagram represents a food web.

Identify *two* herbivores that compete for food in the food web. [1]



20. Base your answer on the accompanying diagram and on your knowledge of biology. The diagram represents a food web.

State the role of the decomposers in this food web. [1]



21. Base your answer on the information below and accompanying data table and on your knowledge of biology.

Yellowstone Park Wolf Update

For the first time in nearly 70 years, the howl of the wolf is being echoed throughout Yellowstone National Park. *Canis lupus*, the gray wolf, one of the largest and most complex of the canine species, has been successfully reintroduced into the Yellowstone ecosystem.

In mid-January 1995, 14 wolves from many separate packs were captured in Canada and then transported into Yellowstone Park and placed into three one-acre pens. . . .

Source: <http://www.yellowstone-bearman.com/w-update.html>

After the wolves were given time to establish a new pack structure, the packs were released into the wild. The number of wolf pups was counted each year for four years. The data are shown in the table below.

State *one* possible reason why the wolf population showed a decline from 1997 to 1998. [1]

Number of Wolf Pups Observed

Year	Number of Pups
1996	11
1997	64
1998	42
1999	61

22. Base your answer on the accompanying information and on your knowledge of biology.

There has been an increase in the number of dead birds found on the beaches of the Great Lakes. These birds were poisoned by a bacterial toxin in the lake water. The birds do not ingest enough water to become sick directly from the toxin found in the lake water. Scientists think that the cause of the increasing bird deaths lies with an invasive species—the zebra mussel. This freshwater organism was introduced into the Great Lakes accidentally by humans, and has become well established in the Great Lakes. Zebra mussels filter out microscopic organisms, as well as the toxins found in the lake water. The toxins become concentrated in the zebra mussels, which are eaten by small fish called gobies, and the gobies are eaten by the birds. The concentration increases in each level of the food chain. It appears that the introduction of the zebra mussels into the Great Lakes has resulted in a new food chain that increases the concentration of the naturally occurring toxins and passes dangerous levels on to these top-level predators. This process is known as bioaccumulation.

On the diagram shown, or on a separate piece of paper, complete the food chain by filling in the correct organisms from the passage. [1]

