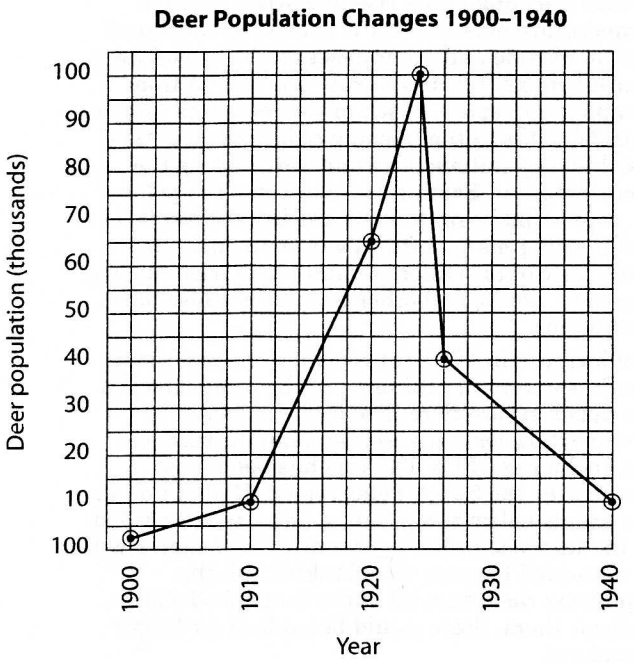
**Part B**

**7.** 4 **8.** 1 **9.** 2
**10.** 2 **11.** 1 **12.** 1
**13.** 1 **14.** 4 **15.** 1
**16.** 4 **17.** 1 **18.** 2
**19.** 2 **20.** carp

**21.** The sewage increased from 1950 through 1970, and during that time whitefish, trout, and walleye declined or disappeared. This lowered the biodiversity of the lake.

**22.–23.**




**24.** 2

**25.** If the predators were not hunted so much, they would have kept the deer population under control, and there would not have been the big increase followed by mass starvation. More deer hunting to make up for the loss of predators may have helped too.

**26.** 4 **27.** 1

**28.** grasses → grasshoppers → spiders → birds

**29.** 2 **30.** 3 **31.** 1

**Part C**

**32.** One reason it is important to preserve biodiversity is that biodiversity contributes to keeping ecosystems stable. Another reason is that many organisms might contain substances that could provide future treatment or cures for diseases, and we may lose such organisms if we do not protect the biodiversity of Earth's ecosystems.

**33.** A habitat is where an organism lives (its "address") and its niche is what it does in the environment (its "occupation").

**34.** For parasites to be successful, it is important that they do not kill their host or they could die too. Predators do kill their prey and the population must then repopulate or decline.

**35.** If the number of carnivores in a community suddenly doubled, the most immediate effect would be a reduction in the number of herbivores that the carnivores feed on. And, if too many herbivores are killed, starvation would soon reduce the predator population too. This would eventually lead to a slow recovery back to the point where it all started.

**36.** The rabbit population would not be able to continue growing forever, since other factors would have an effect too. For instance, disease and predators would become more common in response to the population growth of rabbits. Either of these would reduce their population significantly.

**37.** Choice B is the best choice: the chickens have the most energy right away. Later, they will have used up some of their stored energy in the process of living, and lose a lot to the environment as heat. The longer you wait, the less energy you will get from them. The energy in the corn is being used very slowly, if at all, so it can be eaten later.

Choice A is not a good one, because most of the energy stored in the corn fed to the chickens is lost, and very little would be stored in the chickens. Choice C is not a good one either, for almost the same reason. The chickens use more energy from the corn than is available to you when you later eat either the chickens or their eggs.

## Answers to Review Questions–Topic 7

### Review Questions

**1.** 1 **2.** 3 **3.** 3
**4.** 3

**5.** Country B, because the population is leveling off and staying about equal with food production/acre.

**6.** 4 **7.** 3 **8.** 3
**9.** 2

**10.** With less room to find food and live, many would die. Also, isolating groups in small areas leads to smaller breeding populations with less genetic diversity.

**11.** 2 **12.** 4

**13.** It controls insect populations without the use of toxic chemicals.

**14.** 4 **15.** 4 **16.** 3
**17.** 1 **18.** 3 **19.** 1
**20.** 1 **21.** 3

**22.** Burning fossil fuels affects the precipitation part of the water cycle. As rain falls through gases produced by burning coal, oil, and other fuels, the gases dissolve in it and form acid rain, which causes damage to organisms in many ways.

**23.** Toxic chemicals used to control weeds and insect pests may be in the runoff water, and when they enter bodies of water, they may harm the organisms living there.

**24.** Although lakes and rivers contain a lot of water, many of them are polluted with toxic chemicals used by agriculture and industry. Humans can use only clean water for drinking and other purposes, and it is sometimes in short supply.

**25.** 3 **26.** 4 **27.** 1
**28.** 4 **29.** 4 **30.** 3
**31.** algae