

# Concept Review

## MATCHING

In the space provided, write the letter of the description that best matches the term or phrase.

- |  |  |
|--|--|
| _____ 1. practice of growing, breeding, and caring for plants and animals used for a variety of purposes     | <b>a.</b> loss of biodiversity         |
| _____ 2. study of how living things interact with each other and with their nonliving environments           | <b>b.</b> supply and demand            |
| _____ 3. conflict between short-term interests of individuals and long-term welfare of society               | <b>c.</b> “The Tragedy of the Commons” |
| _____ 4. declining number and variety of the species in an area  | <b>d.</b> agriculture                  |
| _____ 5. study of how humans interact with the environment   | <b>e.</b> developed nation             |
| _____ 6. law describing the relationship between an item’s availability and its value.                       | <b>f.</b> environmental science        |
| _____ 7. characterized by low population growth rate, high life expectancy, and diverse industrial economies | <b>g.</b> ecology                      |
| _____ 8. characterized by high population growth rate, low energy use, and very low personal wealth          | <b>h.</b> developing nation            |
| _____ 9. state in which a human population can survive indefinitely  | <b>i.</b> renewable resource           |
| _____ 10. natural material that can be replaced relatively quickly through natural processes                 | <b>j.</b> sustainability               |

## MULTIPLE CHOICE

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- \_\_\_\_\_ 11. Which of the following sciences contribute to the field of environmental science?
- |                                     |                            |
|-------------------------------------|----------------------------|
| <b>a.</b> physics and chemistry     | <b>c.</b> social sciences  |
| <b>b.</b> biology and earth science | <b>d.</b> all of the above |

**Concept Review** *continued*

- \_\_\_\_\_ **12.** All of the following make up the three major categories of environmental problems *except*
- a.** loss of biodiversity.
  - b.** overpopulation.
  - c.** resource depletion.
  - d.** pollution.
- \_\_\_\_\_ **13.** During the period of human history known as the \_\_\_\_\_, human populations grew rapidly because of advances in farming methods.
- a.** Industrial Revolution
  - b.** agricultural revolution
  - c.** “Tragedy of the Commons”
  - d.** hunter-gatherer period
- \_\_\_\_\_ **14.** Which major changes in human society and the environment occurred during the Industrial Revolution?
- a.** People lived in small tribes; many mammals went extinct.
  - b.** Domesticated plants were altered; forest was replaced with farmland.
  - c.** Fossil fuel consumption, technological efficiency, and environmental pollution increased.
  - d.** Common grazing areas were replaced with closed fields.
- \_\_\_\_\_ **15.** What did hunter-gatherers do to alter the environment?
- a.** introduce plants to new regions
  - b.** overhunt large mammals
  - c.** burn prairie to maintain grassland
  - d.** all of the above
- \_\_\_\_\_ **16.** Developed nations make up about \_\_\_\_\_ percent of the world’s population and consume about \_\_\_\_\_ percent of its resources.
- a.** 20, 75
  - b.** 50, 75
  - c.** 75, 20
  - d.** 75, 50
- \_\_\_\_\_ **17.** Hardin’s “Tragedy of the Commons” essay addressed the conflicts associated with which environmental challenge?
- a.** preventing pollution
  - b.** preserving biodiversity
  - c.** curbing overpopulation
  - d.** protecting shared resources
- \_\_\_\_\_ **18.** The ecological footprint for a person in a particular country takes into account what requirements of supporting that individual?
- a.** land used for crops
  - b.** land taken up by housing
  - c.** forest area that absorbs pollution
  - d.** all of the above
- \_\_\_\_\_ **19.** Attempts to create a sustainable society strive to achieve what?
- a.** greater resource consumption
  - b.** stable resource consumption
  - c.** negative population growth
  - d.** restrictions on technology
- \_\_\_\_\_ **20.** A cost-benefit analysis balances the cost of an action against
- a.** those who benefit from the action.
  - b.** those who perform the analysis.
  - c.** what consumers and taxpayers are willing to pay.
  - d.** the benefits one expects to receive.

# Answer Key

## Concept Review

### MATCHING

- |      |       |
|------|-------|
| 1. d | 6. b  |
| 2. g | 7. e  |
| 3. c | 8. h  |
| 4. a | 9. j  |
| 5. f | 10. i |

### MULTIPLE CHOICE

- |       |       |
|-------|-------|
| 11. d | 16. a |
| 12. b | 17. d |
| 13. b | 18. d |
| 14. c | 19. b |
| 15. d | 20. d |

## Critical Thinking

### ANALOGIES

- |      |      |
|------|------|
| 1. c | 5. a |
| 2. d | 6. c |
| 3. b | 7. c |
| 4. d | 8. c |

### INTERPRETING OBSERVATIONS

9. Countries A and D are most likely developing countries because they have high population growth rates, very low annual per-person incomes, and low amounts of carbon released from fossil fuels.
10. Countries B and C would probably have the highest rates of energy consumption since they appear to be developed countries, and they release large amounts of carbon dioxide from fossil fuels.
11. Country B is probably the United States since it has the highest annual carbon dioxide output. Country C is also an acceptable answer, because on these graphs it shows all the indicators of being a developed country.

### AGREE OR DISAGREE

12. Accept any thoughtful answer. Sample answer: Agree; massive extinctions have been common throughout Earth's history. The planet recovers and adapts (example—extinction of dinosaurs, rise of mammals). Disagree;

other extinction events in Earth's history have not resulted from the acts of humans. No one knows the extent to which human society will eventually affect extinction events.

13. Accept any thoughtful answer. Sample answer: Agree; as long as a society is self-sustaining and can maintain healthy populations, population growth is not a problem. Disagree; regardless of whether food resources are adequate to support growing populations, the additional population stresses the environment through such things as overconsumption, pollution, and loss of habitat.
14. Accept any thoughtful answer. Sample answer: Disagree; values and priorities will inevitably differ somewhat. However, all people, no matter what their cultural background, share the same basic needs—the need for shelter, clean water, food, and places for recreation. These needs, in turn, shape people's values. Ultimately, most people would agree that a clean, hospitable environment is a worthwhile goal for all people to work toward and share.

### REFINING CONCEPTS

15. Citizens of developed countries consume far more resources than do citizens of developing countries. Production of these resources takes up land and sea areas. Therefore, someone consuming more resources is going to leave a larger ecological footprint than will someone consuming fewer. Another aspect of the answer is that citizens of developing countries often face malnutrition. Thus, their ecological footprints are small, even compared countries with moderate consumption rates.
16. Accept any thoughtful answer. Sample answer: initiate antipollution controls at the beginning of the Industrial Revolution; develop better international relations to improve the sharing of agricultural and food resources; set aside natural areas before urban areas