**Chapter 1 – Friedland Essentials Test Bank**

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| **Key Idea** | **Corresponding Questions (#)** |
| Define the field of environmental science and discuss its importance. | 1–11 |
| Identify ways in which humans have altered and continue to alter our environment. | 12–33 |
| Describe the key environmental indicators that help us evaluate the health of the planet. | 34–44 |
| Define sustainability and explain how it can be measured using the ecological footprint. | 45–52 |
| Explain the scientific method and its application to the study of environmental problems. | 53–73 |
| Describe some of the unique challenges and limitations of environmental science. | 74–78 |
|  |  |

Chapter 1: Introduction to Environmental Science

Multiple Choice

1. The death of a billion fish in the Neuse River of North Carolina in 1991 was caused by

A. sediment.

B. bacteria.

C. overfishing the food source of the fish.

D. *Pfiesteria*.

E. acid rain.

ANS: D

DIF: E

MSC: Fact based

Key Idea: Define the field of environmental science and discuss its importance.

2. *Pfiesteria* is a

A. microscopic free living organism.

B. macroscopic algae.

C. fungus.

D. fish.

E. nutrient.

ANS: A

DIF: E

MSC: Definitional

Key Idea: Define the field of environmental science and discuss its importance.

3. *Pfiesteria* has many life stages, including a

I. carnivorous stage.

II. free-floating amoeba stage.

III. stage that allows development of a protective casing.

A. I only

B. II only

C. III only

D. I and III

E. I, II, and III

ANS: E

DIF: E

MSC: Fact based

Key Idea: Define the field of environmental science and discuss its importance.

4. The factor that enabled *Pfiesteria* to enter the life stage that caused fish kills in the Neuse River of North Carolina is that

A. all *Pfiesteria* are dangerous to aquatic life forms.

B. the development of a protective coat prevented the work of pesticides.

C. overfishing caused a decrease in predators.

D. nutrients were added to the water.

E. drought made conditions appropriate.

ANS: D

DIF: M

MSC: Fact based

Key Idea: Define the field of environmental science and discuss its importance.

5. The effect of a *Pfiesteria* outbreak on humans is a(n)

A. decrease in tourism.

B. economic loss from decreased seafood sales.

C. decrease in recreational fishing.

D. increase of skin sores and nausea.

E. All of the above

ANS: E

DIF: M

MSC: Fact based

Key Idea: Define the field of environmental science and discuss its importance.

6. When we discuss “our environment,” we are referring to

A. all conditions in the world.

B. only interactions that affect human life.

C. only conditions that cause negative effects on our health.

D. primarily interactions that harm the atmosphere.

E. the sum of all the conditions surrounding us that influence life.

ANS: E

DIF: M

MSC: Concept based

Key Idea: Define the field of environmental science and discuss its importance.

7. The study of environmental science is concerned with

A. the interactions among human systems and those found in nature.

B. biotic and abiotic interactions with human systems.

C. only abiotic factors.

D. only biotic factors.

E. Both A and B

ANS: E

DIF: M

MSC: Concept based

Key Idea: Define the field of environmental science and discuss its importance.

8. The Neuse River is considered a system because it involves

A. components that influence each other irreversibly.

B. specifically interacting biotic components that influence each other.

C. interacting abiotic components.

D. components that interact and influence one another through material or energy change.

E. components that influence one another only through the water.

ANS: D

DIF: M

MSC: Definitional

Key Idea: Define the field of environmental science and discuss its importance.

9. An ecosystem is a location on Earth that includes

I. only biotic components.

II. only abiotic components.

III. interacting living and non-living components.

A. I only

B. II only

C. III only

D. I and II only

E. I, II, and III

ANS: C

DIF: M

MSC: Concept based

Key Idea: Define the field of environmental science and discuss its importance.

10. The difference between an environmentalist and an environmental scientist is

A. negligible because both care about Earth.

B. that an environmentalist is involved in a social movement; whereas an environmental scientist is concerned with the methods of science.

C. that an environmental scientist has a background in biology and chemistry; whereas an environmentalist studies the humanities.

D. an environmentalist is generally a radical.

E. an environmentalist is involved in a social movement; whereas an environmental scientist is concerned with politics.

ANS: B

DIF: E

MSC: Concept based

Key Idea: Define the field of environmental science and discuss its importance.

11. Environmental Studies cover

A. ethics.

B. policy.

C. literature.

D. economics.

E. All of the above

ANS: E

DIF: M

MSC: Concept based

Key Idea: Define the field of environmental science and discuss its importance.

12. A good example of direct human manipulation of the natural environment is seen in

A. adding emissions to the atmosphere from driving cars.

B. converting land from forest to growing crops.

C. growing clover and wheat in a laboratory.

D. raising goldfish in a fish tank.

E. Both A and B

ANS: E

DIF: E

MSC: Critical thinking

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

13. The extinction of mastodons and giant ground sloths in the Americas is attributed to

A. climatic change.

B. competition with dinosaurs.

C. a meteor impact in Central America.

D. overhunting by humans.

E. introduction of the American bison which acted as a competitor.

ANS: D

DIF: M

MSC: Fact based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

14. Native Americans on the Great Plains

A. were responsible for the expansion of the tallgrass prairie.

B. had hunted the passenger pigeon to extinction by the 1880s.

C. had hunted the American bison to extinction by the 1880s.

D. used fire to burn the tallgrass prairie.

E. were completely gone by the 1600s.

ANS: A

DIF: M

MSC: Fact based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

15. Which is a correct statement from the point of view of an environmental scientist?

A. Human manipulation of the environment is completely acceptable in any modern society.

B. Human manipulation of the environment is outpacing the rate at which natural systems can evolve.

C. Natural systems will evolve at an appropriate rate to compensate for human manipulation.

D. Natural systems will be undamaged by human interference because engineering discoveries will fix the problems.

E. Adaptation and relocation are acceptable and reliable solutions for organisms that are affected by climate change.

ANS: B

DIF: M

MSC: Concept based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

16. Ecosystem services

A. are the processes by which life supporting resources are produced.

B. can be provided by a forest.

C. can be provided by an aquifer.

D. can be provided by soil.

E. All of the above

ANS: E

DIF: E

MSC: Concept based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

17. Environmental indicators

A. enable scientists to accurately predict the future of an environment.

B. describe what is causing a change in the environment.

C. do not always describe what is causing a change in the environment.

D. do not provide information that is considered valuable in creating public policy.

E. Both A and C

ANS: C

DIF: M

MSC: Concept based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

18. Living in an environmentally sustainable way necessitates

A. using Earth’s resources efficiently whenever convenient.

B. living without basic ecosystem services.

C. living in a tent.

D. living in a rural area.

E. sensitivity to the needs of future generations.

ANS: E

DIF: E

MSC: Concept based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

19. Evidence of biodiversity is seen in the

A. genetic variation among human populations.

B. number of species in a region.

C. number of ecosystems and habitats in a region.

D. variety of nutrients available in a region.

E. All of the above

ANS: E

DIF: E

MSC: Critical thinking

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

20. The population with the greatest ability to respond to environmental change most likely is the one with

A. high genetic diversity.

B. low genetic diversity.

C. one type of dominant organism.

D. two types of dominant organisms.

E. more animals than plants.

ANS: A

DIF: E

MSC: Critical thinking

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

21. The number of species on Earth that have been identified is approximately

A. 10 billion.

B. 1 billion.

C. 100 million.

D. 2 million.

E. 100,000.

ANS: D

DIF: E

MSC: Fact based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

22. The number of species on Earth that have not yet been identified is estimated at

A. 50–100 billion.

B. 5–10 billion.

C. 5–100 million.

D. 1–2 million.

E. 5,000–100,000.

ANS: C

DIF: E

MSC: Fact based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

23. The health of frog populations is used as an indicator of environmental health because frogs

A. are exposed to the water.

B. are amphibious.

C. eat insects which are very low on the food chain.

D. live in the tropics.

E. may ingest toxins on land.

ANS: B

DIF: E

MSC: Fact based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

24. The comparison between the rate of speciation and background extinction rate is that

A. speciation is natural and background extinction rate is human induced.

B. speciation and background extinction rate are very slow, natural processes.

C. speciation is much faster than background extinction rate.

D. environmental stress may cause species to go extinct faster than new ones can evolve.

E. Both B and D

ANS: E

DIF: M

MSC: Concept based

25. Two square km is equal to \_\_\_\_ square meters.

A. 200,000

B. 2,000,000

C. 20,000,000

D. 200,000,000

E. 2,000,000,000

ANS: B

DIF: M

MSC: Analytical thinking

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

26. Five square miles is equal to \_\_\_\_ acres. (1 square mile = 640 acres)

A. 0.32

B. 320

C. 2500

D. 3200

E. 32,000

ANS: D

DIF: E

MSC: Analytical thinking

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

27. Seventy-five square kilometers is equal to \_\_\_\_ square miles. (1 km = 0.6214 mile)

A. 28.96

B. 2890

C. 5625

D. 39,600

E. 46.61

ANS: A

DIF: M

MSC: Analytical thinking

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

28. Twenty square kilometers is equal to \_\_\_\_ hectares. (1 hectare = 10,000 m2)

A. 20,000

B. 200

C. 2000

D. 200,000

E. 40

ANS: C

DIF: M

MSC: Analytical thinking

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

29. Fifteen hundred acres is closest to \_\_\_\_ hectares. (1 hectare = 2.47 acres)

A. 300

B. 6000

C. 60

D. 3000

E. 600

ANS: E

DIF: E

MSC: Analytical thinking

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

30. Total world grain production has

A. increased fairly steadily since 1950.

B. dropped dramatically since 1950.

C. leveled off recently.

D. increased recently.

E. gone up and down with no overall trend.

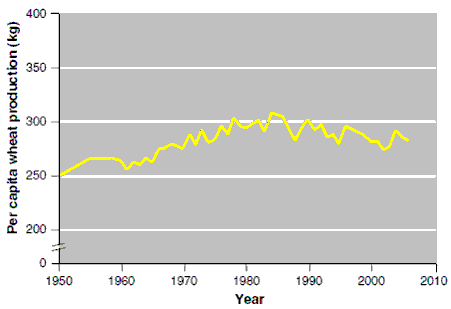
ANS: A

DIF: E

MSC: Fact based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

Figure 1-1



31. According to Figure 1-1 above, which of the following statements about the overall trends in per capita wheat production is correct?

A. Per capita wheat production increased from 1950 through the mid-1980s and then started to decrease.

B. There is no discernible trend.

C. Between 1950 and 1960, per capita wheat production was stable and then decreased through 2005.

D. Per capita wheat production has not changed since the 1950s.

E. Per capita wheat production has steadily increased since the 1950s through today.

ANS: A

DIF: M

MSC: Analytical thinking

NAR: Figure 1-1

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

32. Factors that are responsible for grain production not keeping up with worldwide population include

A. crop diseases.

B. soil degradation.

C. use of food crops for fuel.

D. government encouragement to let land remain uncultivated.

E. All of the above

ANS: E

DIF: E

MSC: Concept based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

33. New innovations in food production are

A. sure to find new efficient ways to produce enough food to feed the world.

B. not keeping pace with food needs of the world.

C. not needed to keep pace with food needs of the world.

D. frequently the cause of soil degradation.

E. Both B and D

ANS: E

DIF: M

MSC: Concept based

Key Ideas: Identify ways in which humans have altered and continue to alter our environment.

34. Greenhouse gases in the atmosphere are

A. concentrated near the equator.

B. completely the product of human activity.

C. responsible for constant temperatures near Earth’s surface.

D. causing a decrease in atmospheric temperature.

E. primarily the result of volcanic activity.

ANS: C

DIF: M

MSC: Fact based

Describe the key environmental indicators that help us evaluate the health of the planet.

35. The concentration of carbon dioxide in the atmosphere

A. is increasing in part due to fossil fuel use.

B. has not significantly changed in the past 200 years.

C. is increasing in part due to deforestation.

D. has been decreasing since the 1800s.

E. Both A and C

ANS: E

DIF: E

MSC: Fact based

Describe the key environmental indicators that help us evaluate the health of the planet.

36. Human population today is closest to

A. 3 billion.

B. 5 billion.

C. 6 billion.

D. 7 billion.

E. 12 billion.

ANS: D

DIF: E

MSC: Fact based

Describe the key environmental indicators that help us evaluate the health of the planet.

37. If the worldwide number of births daily is 364,000 and the number of deaths is 152,000, then annually there are an additional \_\_\_\_ people.

A. 7,000,000.

B. 77,380.

C. 100,000,000.

D. 77,380,000.

E. 212,000.

ANS: D

DIF: E

MSC: Analytical thinking

Describe the key environmental indicators that help us evaluate the health of the planet.

38. Human population is expected to stabilize at \_\_\_\_ by the year \_\_\_\_.

A. 68–105 billion; 2050

B. 68–105 billion; 2100

C. 6.8–10.5 billion; 2100

D. 6.8–10.5 billion; 2150

E. 6.8–10.5 billion; 2200.

ANS: C

DIF: M

MSC: Fact based

Describe the key environmental indicators that help us evaluate the health of the planet.

39. The following are non-renewable resources except

A. aluminum.

B. oil.

C. coal.

D. copper.

E. timber.

ANS: E

DIF: E

MSC: Concept based

Describe the key environmental indicators that help us evaluate the health of the planet.

40. Economic development goes hand in hand with

A. decreased use of non-renewable resources.

B. increased consumption of resources.

C. smaller more efficient living styles.

D. better planting strategies for crops.

E. sustainable use of renewable resources.

ANS: B

DIF: E

MSC: Concept based

Describe the key environmental indicators that help us evaluate the health of the planet.

41. \_\_\_\_ % of the world’s most developed population consumes \_\_\_\_ % of the world’s energy.

A. 20; 58

B. 20; 20

C. 10; 90

D. 2; 75

E. 2; 95

ANS: A

DIF: M

MSC: Fact based

Describe the key environmental indicators that help us evaluate the health of the planet.

42. The poorest \_\_\_\_ % of the world’s people consume no more than \_\_\_\_ % of the world’s energy, paper, fish and meat.

A. 20: 20

B. 20; 5

C. 5; 20

D. 5; 35

E. 2; 45

ANS: B

DIF: M

MSC: Fact based

Describe the key environmental indicators that help us evaluate the health of the planet.

43. If a forest is cleared at a rate of 875 acres per day, approximately how many hectares per year are being cleared?

A. 2160

B. 319,000

C. 3500

D. 129,000

E. 13,000

ANS: D

DIF: M

MSC: Analytical thinking

Describe the key environmental indicators that help us evaluate the health of the planet.

44. If land is cleared at a rate of 456 hectares per week, approximately how many acres per year that are being cleared?

A. 16,5000

B. 180

C. 9500

D. 66,400

E. 58,600

ANS: E

DIF: M

MSC: Analytical thinking

Describe the key environmental indicators that help us evaluate the health of the planet.

45. Sustainable development

A. was demonstrated on Easter Island.

B. requires resources to be saved and stored for one generation.

C. is achieved when food is raised by the people who are eating it.

D. balances human needs and economic development.

E. allows for clear-cutting of trees.

ANS: D

DIF: M

MSC: Concept based

Define sustainability and explain how it can be measured using the ecological footprint.

46. The following are examples of sustainable practices.

I. Forests cut for timber are replanted.

II. Steel is recycled.

III. Plastic is disposed of in landfills because that it is less expensive than recycling.

A. I only

B. II only

C. I and III only

D. I and II only

E. I, II, and III

ANS: D

DIF: E

MSC: Critical thinking

Define sustainability and explain how it can be measured using the ecological footprint.

47. Sustainable development would incorporate

A. the development of alternative materials.

B. efficient use of energy.

C. replacement of nutrients in soil.

D. evaluation of residential patterns.

E. All of the above

ANS: E

DIF: E

MSC: Critical thinking

Define sustainability and explain how it can be measured using the ecological footprint.

48. The action that can reduce the ecological footprint of people in the highly developed world to levels that are sustainable is

A. eating more fish.

B. shopping only in stores that use organic cotton.

C. traveling to the developing world.

D. using more fertilizer.

E. None of these actions alone will result in a sustainable level of consumption.

ANS: E

DIF: M

MSC: Critical thinking

Define sustainability and explain how it can be measured using the ecological footprint.

49. The concept of ecological footprint is measured in terms of the amount of

A. resource an individual consumes daily.

B. land area.

C. resources an individual consumes over the course of a lifetime.

D. resources an entire nation consumes yearly.

E. resources an individual consumes yearly.

ANS: B

DIF: M

MSC: Definitional

Define sustainability and explain how it can be measured using the ecological footprint.

50. Calculating ecological footprint involves consideration of

A. the impact of activities on the resources of Earth.

B. lifestyle.

C. water usage for crops and direct consumption.

D. food calories required for continuing normal activity.

E. All of the above

ANS: E

DIF: E

MSC: Concept based

Define sustainability and explain how it can be measured using the ecological footprint.

51. The world’s calculated human ecological footprint is \_\_\_\_ % of the Earth’s total usable land area.

A. 40

B. 75

C. 100

D. 125

E. 200

ANS: D

DIF: M

MSC: Fact based

Define sustainability and explain how it can be measured using the ecological footprint.

52. If every person on Earth today lived with the average lifestyle of people in the United States, the land of \_\_\_\_ Earths would be required.

A. 2

B. 5

C. 8

D. 10

E. 20

ANS: B

DIF: M

MSC: Fact based

Define sustainability and explain how it can be measured using the ecological footprint.

Passage 1-1

*An experiment is set up to determine if wheat grows better when it is planted by itself or together with clover. The setup involves three pans of each treatment. Set-ups A, B, and C contain wheat alone. Set-ups D, E, and F contain clover and wheat planted together, in rows alternating one seed of each type. One hundred seeds are planted in each pan. All treatments contain the same type of soil, are planted in the same size of pan, are exposed to the same amount of sunlight, and are maintained at the same temperature throughout the course of the experiment.*

53. Use Passage 1-1. The treatments planted with wheat alone are the

A. constant.

B. controls.

C. independent variable.

D. dependent variable.

E. replication.

ANS: B

DIF: E

MSC: Critical thinking

NAR: Passage 1-1

Explain the scientific method and its application to the study of environmental problems.

54. Use Passage 1-1. Which of the following statements provides a hypothesis for this experiment?

A. Wheat grows taller when planted by itself than when it is alternated with clover.

B. Clover grows better when planted by itself

C. Wheat grows better when planted together with clover.

D. Clover grows better when planted together with wheat.

E. Both A and C

ANS: E

DIF: M

MSC: Critical thinking

NAR: Passage 1-1

Explain the scientific method and its application to the study of environmental problems.

55. Use Passage 1-1. Several setups of each treatment are prepared to fulfill a very important requirement of scientific experimentation, specifically the need for

A. replication.

B. constants.

C. a control.

D. an independent variable.

E. a dependent variable.

ANS: A

DIF: M

MSC: Critical thinking

NAR: Passage 1-1

Explain the scientific method and its application to the study of environmental problems.

56. Use Passage 1-1. Constants in this experiment are

A. the pan of wheat, temperature, and soil type.

B. temperature, number of seeds in each pan, and sunlight.

C. number of seeds in each pan, sunlight, and one pan of wheat and clover.

D. the pans of wheat alternated with clover.

E. the same as the independent variable.

ANS: B

DIF: E

MSC: Critical thinking

NAR: Passage 1-1

Explain the scientific method and its application to the study of environmental problems.

57. Use Passage 1-1. The dependent variable in this experiment could be the

A. height of the clover.

B. number of leaves on the clover.

C. height of the wheat.

D. presence of nodules on the roots of the clover.

E. number of clover seeds that germinate.

ANS: C

DIF: E

MSC: Critical thinking

NAR: Passage 1-1

Explain the scientific method and its application to the study of environmental problems.

58. A hypothesis is different from a belief because it is

A. testable.

B. proven.

C. the same as a theory.

D. sensible.

E. false.

ANS: A

DIF: E

MSC: Concept based

Explain the scientific method and its application to the study of environmental problems.

59. Accuracy is

A. how close a measured value is to the actual value.

B. how close a measured value is to repeated measurements of the same sample.

C. a measurement.

D. an estimation.

E. only measured in the metric system.

ANS: A

DIF: M

MSC: Definitional

Explain the scientific method and its application to the study of environmental problems.

60. Precision is

A. how close a measured value is to the actual value.

B. how close a measured value is to repeated measurements of the same sample.

C. a measurement.

D. an estimation.

E. only measured in the metric system.

ANS: B

DIF: M

MSC: Definitional

Explain the scientific method and its application to the study of environmental problems.

61. Inductive reasoning

A. is the process of making general statements from specific facts.

B. is the process of applying a general statement to specific facts.

C. doesn’t require facts.

D. is the same thing as a hypothesis.

E. is the same thing as observation.

ANS: A

DIF: M

MSC: Definitional

Explain the scientific method and its application to the study of environmental problems.

62. Deductive reasoning

A. is the process of making general statements from specific facts.

B. is the process of applying a general statement to specific facts.

C. requires observation.

D. is the same thing as a hypothesis.

E. Both B and C

ANS: E

DIF: M

MSC: Definitional

Explain the scientific method and its application to the study of environmental problems.

63. Dissemination of scientific results

A. is an essential part of the scientific process.

B. allows for scientists to discuss results.

C. furthers critical thinking.

D. assists researchers in developing alternative explanations to observable phenomena.

E. All of the above

ANS: E

DIF: E

MSC: Concept based

Explain the scientific method and its application to the study of environmental problems.

64. An idea that has been repeatedly tested and confirmed by multiple groups of researchers is called a(n)

A. hypothesis.

B. induction.

C. deduction.

D. theory.

E. natural law.

ANS: D

DIF: M

MSC: Definitional

Explain the scientific method and its application to the study of environmental problems.

65. A phenomenon that has been rigorously tested and to which there are no known exceptions is called a(n)

A. hypothesis.

B. induction.

C. deduction.

D. theory.

E. natural law.

ANS: E

DIF: M

MSC: Definitional

Explain the scientific method and its application to the study of environmental problems.

Passage 1-2

*An experiment uses two groups of mice with 20 individuals in each group. Both groups are fed the same amount of water and food every day. They are kept in similar cages in a climate-controlled room. The experimental group is given five doses of a pesticide every day. After two months, the amount of an enzyme in the brains of the mice was measured.*

66. Use Passage 1-2. The independent variable in this experiment is the

A. climate control of the room.

B. enzyme in the brain.

C. pesticide fed to the mice.

D. time of the experiment.

E. food.

ANS: C

DIF: M

MSC: Critical thinking

NAR: Passage 1-2

Explain the scientific method and its application to the study of environmental problems.

67. Use Passage 1-2. The group of mice not exposed to the pesticide is called the

A. control.

B. independent variable.

C. dependent variable.

D. experimental constant.

E. dosage control.

ANS: A

DIF: E

MSC: Critical thinking

NAR: Passage 1-2

Explain the scientific method and its application to the study of environmental problems.

68. Use Passage 1-2. The climate controlled room is important to establish

A. constants.

B. controls.

C. variables.

D. doses given to the mice.

E. None of the above

ANS: A

DIF: E

MSC: Critical thinking

NAR: Passage 1-2

Explain the scientific method and its application to the study of environmental problems.

69. Use Passage 1-2. The dependent variable in this experiment is the

A. climate control of the room.

B. enzyme in the brain of the mice.

C. pesticide fed to the mice.

D. time of the experiment.

E. climate.

ANS: B

DIF: M

MSC: Critical thinking

NAR: Passage 1-2

Explain the scientific method and its application to the study of environmental problems.

70. Controlled experiments in nature are difficult because

A. it is impossible to determine what kind of conditions are needed for the experiment.

B. large amounts of land are sometimes required to produce natural conditions.

C. animals cannot be studied because they do not stay still.

D. scientists do not like to do the fieldwork required.

E. Both A and B

ANS: B

DIF: M

MSC: Concept based

Explain the scientific method and its application to the study of environmental problems.

71. Natural experiments can be done when a

A. natural event changes an ecosystem.

B. volcanic eruption destroys a forest.

C. fire sweeps through a prairie.

D. tornado uproots a section of a forest.

E. All of the above

ANS: E

DIF: E

MSC: Critical thinking

Explain the scientific method and its application to the study of environmental problems.

72. Natural experiments lack

A. any basis for comparison.

B. an exact replication of the experiment.

C. similar constants.

D. a dependent variable.

E. All of the above

ANS: B

DIF: M

MSC: Concept based

Explain the scientific method and its application to the study of environmental problems.

73. When studies are done to determine the effect of pesticides on humans,

A. human subjects are used to test the pesticides.

B. the health of similar groups of people who have not been exposed to the pesticides are used as a basis for comparison.

C. it is very difficult to find more than a single person exposed.

D. higher primates are tested because their systems are close to those of humans.

E. Both A and B

ANS: B

DIF: M

MSC: Fact based

Explain the scientific method and its application to the study of environmental problems.

74. The study of environmental science differs from study of the natural sciences such as biology and chemistry because it

A. doesn’t encourage critical thinking.

B. isn’t included in most institutions of higher learning.

C. involves politics, law, and economics.

D. eliminates the consideration of physics.

E. doesn’t take into account the scientific process.

ANS: C

DIF: E

MSC: Fact based

Describe some of the unique challenges and limitations of environmental science.

75. Environmental justice is

A. the body of law that deals with environmental issues.

B. the type of legal system that environmental lawyers use to defend nature.

C. a social movement that works toward equal enforcement of environmental laws in poor communities.

D. a type of legal punishment for polluters.

E. not needed because pollution is equitably distributed around the world.

ANS: C

DIF: M

MSC: Definitional

Describe some of the unique challenges and limitations of environmental science.

76. Which of the following statements is/are correct?

A. If more efficient automobile are built, consumption of gasoline will decrease.

B. Even though more efficient cars are built, consumer behavior dictates the trend in consumption of gasoline.

C. Interactions between natural and human-dominated systems are fairly easy to predict.

D. Interactions between natural and human-dominated systems are complicated to predict.

E. Both B and D

ANS: E

DIF: M

MSC: Concept based

Describe some of the unique challenges and limitations of environmental science.

77. The San Francisco Sustainability Plan, adopted in 1997,

A. applies environmental indicators to monitor and encourage sustainable development of the city.

B. will never be put into place.

C. relies on consumers to create a market for eco-friendly products.

D. ignores the need for public education.

E. ignores the principles of economics.

ANS: A

DIF: E

MSC: Fact based

Describe some of the unique challenges and limitations of environmental science.

78. Which of the following are environmental indicators used to show that the San Francisco Sustainability Plan is successful?

A. Increase in the number of parks and in the number of department stores

B. Decrease in the amount of solid waste produced and increase in the size of houses

C. Improved air conditioning in private homes

D. Decrease of wastewater produced and increased biodiversity

E. All of the above

ANS: D

DIF: E

MSC: Fact based

Describe some of the unique challenges and limitations of environmental science.