Chapter 03 Test Bank: Matter, Energy, and Life Key

1. The smallest particle exhibiting the characteristics of an element is a/an

A. atom.
B. molecule.
C. isotope.
D. ion.

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Chemistry

2. Atoms of the same element but with different atomic mass are called

A. radioactive.
B. molecules.
C. isotopes.
D. ions.

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Atomic Structure

3. Organic compounds are those substances

A. found only in living organisms.
B. containing chains and rings of carbon atoms.
C. composed of atoms of a single element.
D. exhibiting radioactive decay.

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Chemistry

4. The conservation of matter principle is that matter

A. is composed of atoms and molecules.
B. cannot be created, destroyed, nor changed in form.
C. must be used carefully or Earth will eventually run out.
D. can neither be created nor destroyed.

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Energy

5. The second law of thermodynamics states that

A. whenever energy is used, some becomes converted to a form difficult to use to do work.
B. energy cannot be shifted from one form to another.
C. life forms cannot survive without energy.
D. energy exists in both potential and kinetic form.

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Energy

6. Cellular respiration is the process by which organisms

A. release energy from sugar for metabolic use.
B. create complex organic molecules from simple molecules.
C. convert heat to chemical bond energy for metabolic work.
D. More than one of these choices are correct

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.03
Topic: Carbon Cycle

7. A group of individuals of a particular type that are able to successfully interbreed is called a/an

A. community.
B. ecosystem.
C. species.
D. population.

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecosystems

8. The productivity of an ecosystem refers to the

A. amount of food consumed by the organisms per unit space.
B. average number of offspring produced per adult female per unit time.
C. amount of biological material produced during a certain period of time.
D. reproductive output.

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecosystems

9. Which have the most diverse diet?

A. Photosynthetic plants
B. Herbivores
C. Omnivores
D. Carnivores

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Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Trophic Level

10. Which two kinds of organisms introduce energy to an ecosystem?

A. Plants and primary consumers
B. Plants and animals at the very top of the food chain
C. Animals in trophic levels III and IV
D. Plants and algae

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Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Trophic Level

11. Photosynthesis and respiration are most significant in the _____ cycle.

A. nitrogen
B. carbon
C. sulfur
D. phosphorus

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Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Carbon Cycle

12. The _____ cycle is most dependent on a variety of types of bacteria that shift the element among several different chemical forms.

A. nitrogen
B. carbon
C. sulfur
D. phosphorus

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Nitrogen Cycle

13. The final breakdown and recycling of organic material is accomplished by

A. top level consumers.
B. decomposers.
C. scavengers.
D. detritivores.

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Trophic Level

14. A carbon sink is a place where carbon

A. atoms wash up for supper.
B. is stored after removal from the atmosphere.
C. is released after cellular respiration.
D. is the carbon released by combustion.

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Carbon Cycle

15. Molecules which regulate chemical processes without being used up are called

A. acids.
B. bases.
C. catalysts.
D. nucleotides.

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Chemistry

16. Substances that readily give up hydrogen atoms are called bases.

FALSE

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Chemistry

17. DNA molecules

A. are unique to every individual.
B. are single stranded.
C. are protein.
D. are only found in humans.

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Chemistry

18. A population

A. consists of all the plants and animals in a given region.
B. consists of all individuals of a given species living in the same area.
C. consists of all species on Earth.
D. consists of a given species and all of the other species it consumes.

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecosystems

19. Vegetation and forests are important carbon sinks.

TRUE

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Carbon Cycle

20. Ecologists study:

A. Living things and their genetic makeup
B. Genetic patterns and the chemistry in them
C. The physical world and its processes
D. The Earth and its processes
E. Relationships between organisms and their environment

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Ecology

21. How are matter and mass related?

A. Mass is a component of matter.
B. Neither matter nor mass take up space.
C. Matter is a component of mass.
D. Both matter and mass take up space.
E. Mass takes up space, while matter does not take up space.

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Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

22. Water vapor, water, and ice are examples of:

A. Types of matter
B. Phases of matter
C. Transfers of energy into matter
D. Forms of energy
E. Types of mass

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

23. What implication(s) does the law of conservation of matter have for humans?

A. We cannot create energy because it is neither created nor destroyed.
B. As matter is recycled, it loses some of its integrity, so we need to be careful when we dispose of goods.
C. Natural resources are unlimited because they are used and reused by living organisms.
D. Disposable goods are not going "away" when we throw them out.
E. All of these are implications of the law of conservation of matter.

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

24. The law of conservation of matter tells us that matter:

A. Can never be reused
B. Needs to be conserved or it will not be available for future generations
C. Can be destroyed
D. Can be conserved by some adaptive strategies
E. Is used repeatedly

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Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

25. The smallest particle that exhibits the characteristics of a chemical element is known as a(n):

A. Molecule
B. Microorganism
C. Atom
D. Phase of matter
E. Isotope

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

26. A compound is composed of _____.

A. Elements
B. Isotopes
C. Atoms
D. Molecules

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

27. In chemical terms, water (H_2O) would best be described as a(n):

A. Element
B. Atom
C. Ion
D. Compound
E. Isotope

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

28. Which of the following is **NOT** a molecule?

A. O_3
B. O_2
C. H_2O
D. $C_6H_{12}O_6$
E. Na+

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

29. The distinction between an organic compound and an inorganic compound is that organic compounds contain:

A. Carbon-Oxygen bonds
B. Water
C. Carbon-Carbon bonds
D. Nitrogen-Carbon bonds

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

30. Which of the following is **NOT** a type of organic molecule?

A. Lipids
B. Proteins
C. Carbohydrates
D. Nucleic Acids
E. Salts

Accessibility: Keyboard Navigation
Chapter: 03
Gradable: automatic

31. A fat or oil is to a _____, as an enzyme is to a _____.

A. Nucleic acid; lipid
B. Protein; nucleic acid
C. Nucleic acid; carbohydrate
D. Carbohydrate; protein
E. Lipid; protein

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

32. Nucleic acid is to _____, as lipid is to _____.

A. Cellular membrane structure; energy storage
B. Cellulose structure; genetic storage
C. Energy storage; cellulose structure
D. Genetic storage; cellular membrane structure
E. Energy storage; genetic storage

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

33. Deoxyribonucleic acid (DNA) contains billions of atoms and is very large. It would be considered a(n):

A. Element
B. Enzyme
C. Compound
D. Mega-atom
E. Isotope

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

34. A cell is:

A. The smallest molecule exhibiting organic characteristics
B. A building block for DNA
C. A small organic compound made of carbon, water, and nitrogen
D. Made up of DNA
E. The smallest unit in which life processes go on

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

35. An enzyme _____ a chemical reaction and _____ so it is ready to perform the reaction again.

A. catalyzes; is not consumed as it is used
B. speeds up; organizes pieces together to form something different
C. slows; is not consumed as it is used
D. initiates; provides the energy to put something together

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

36. Metabolism is a collective term for thousands of:

A. Organic compounds in a cell
B. Enzymatic reactions necessary for life
C. Cells in an organism
D. Molecular reactions in a cell

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

37. Which of the following is a form of energy?

A. Electricity
B. Food
C. Heat
D. Light
E. All of these are forms of energy

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Energy

38. Potential energy is _____ energy.

A. Electrical
B. Motion
C. Stored
D. Heat
E. Latent

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Energy

39. The motion of a rock rolling downhill is known as _____ energy.

A. Kinetic
B. Latent
C. Potential
D. Electrical
E. Mechanical

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Energy

40. Which of the following has the highest quality energy?

A. A warm brick
B. An intense fire
C. A flowing stream
D. A rock rolling downhill
E. Hot air

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Energy

41. The first law of thermodynamics and the law of conservation of matter are similar in that

A. Under normal circumstances neither energy nor matter is created nor destroyed.
B. Both energy and matter flow in a one-way path through biological systems.
C. Under normal circumstances energy and matter are created as they pass through biological systems.
D. The first law of thermodynamics and the law of conservation of matter are not similar.

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Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Energy

42. The second law of thermodynamics states that as energy moves through different forms and systems, it gradually:

A. Becomes more concentrated
B. Dissipates and becomes unavailable
C. Disappears and is lost
D. Accumulates in the form of electricity
E. Changes from kinetic to potential energy

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Energy

43. As energy is used and transformed, it gradually becomes _____ quality and _____ concentrated.

A. Higher; more
B. Lower; more
C. Higher; less
D. Lower; less
E. As energy is used, it does not become transformed; there is no change in quality, and it stays the same concentration

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Energy

44. What implication(s) does the second law of thermodynamics have for biological systems regarding entropy?

A. Systems cannot create energy because it is neither created nor destroyed.
B. With each transformation, less energy is available to do work, so older systems have less energy.
C. A constant supply of energy is necessary for maintenance of biological systems.
D. Energy is unlimited because it is used and reused by living organisms.
E. None of these is an implication of the second law of thermodynamics.

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Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Energy

45. Photosynthesis is the process of converting _____ into _____ energy.

A. Chemical bond energy; kinetic
B. Sunlight; chemical bond
C. Solar energy; kinetic
D. Solar electrical energy; heat
E. Chemical bond energy; potential

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.03
Topic: Photosynthesis

46. On the electromagnetic spectrum of energy wavelengths, visible light falls nearest to:

A. Gamma radiation
B. Radio waves
C. Infrared radiation
D. X-rays
E. Microwaves

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.03
Topic: Photosynthesis

47. About _____ percent of the solar energy that falls on plants is captured for photosynthesis.

A. 100
B. 60–70
C. 40–50
D. 10–20
E. 1–2

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.03
Topic: Photosynthesis

48. Photosynthesis produces sugars from

A. Water, carbon dioxide, and solar energy
B. Water, other sugars, and oxygen
C. Oxygen, carbon dioxide, and water
D. Carbon dioxide, enzymes, and solar energy
E. Oxygen, water, and solar energy

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.03
Topic: Photosynthesis

49. The process of photosynthesis and cellular respiration are similar as that they both

A. Capture energy in the form of sugar
B. Occur in all living organisms
C. Store energy in the form of ATP
D. Capture energy from the sun
E. Photosynthesis and cellular respiration are not similar, they are opposite processes

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.03
Topic: Respiration

50. The process of cellular respiration:

A. Helps primary producers store energy accumulated by chloroplasts
B. Utilizes energy from chemical bonds of molecules, such as glucose
C. Eliminates the need for enzymes in metabolism
D. Does not occur in primary producers
E. Does not occur in detritivores

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.03
Topic: Respiration

51. The process of _____ allows organisms to use inorganic molecules as an energy source.

A. photosynthesis
B. phosphorylation
C. cellular respiration
D. chemosynthesis

Accessibility: Keyboard Navigation
Chapter: 03
Gradable: automatic

52. Producers and consumers rely on _____ to release chemical energy stored as ATP.

A. Photosynthesis
B. Cellular respiration
C. The sun
D. Metabolism
E. Chemosynthesis

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.03
Topic: Respiration

53. Although there are exceptions, in general, a species includes all organisms that are similar enough to:

A. Produce fertile offspring in nature
B. Look alike
C. Fill the same niche
D. Occupy the same community
E. Live together

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

54. All members of a species that live in the same area, at the same time, make up a(n):

A. Species
B. Ecosystem
C. Community
D. Population
E. Biome

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

55. A biological community consists of all:

A. Populations living and interacting in an area
B. Members of a species living in the same area
C. Living things on Earth
D. Populations of a given species
E. Members of a species living in the same biome

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

56. An ecosystem consists of:

A. A physical environment within which a biological community lives
B. The species with which a biological community interacts
C. A biological community and its physical environment
D. The primary producers within a biological community
E. All the species in a biological community

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

57. If an ecosystem exchanges both matter and energy with its surroundings, it would be referred to as a(n) _____ system.

A. Closed
B. Open
C. Dynamic
D. Isolated
E. Interactive

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

58. Many ecologists think of ecosystems and even the Earth as a superorganism because its systems appear to be:

A. Unregulated
B. Self-regulating and self-stabilizing
C. Completely unpredictable
D. Unchangeable
E. Hierarchical

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

59. Productivity in an ecosystem has to do with:

A. The efficiency of its primary producers
B. The number of different species living in the ecosystem
C. Its longevity
D. The combined metabolic rate of the biological communities
E. Its rate of producing biomass

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

60. Biomass includes all:

A. Material in an ecosystem
B. Things that are living at a given time
C. Living and nonliving things
D. Matter produced by primary producers
E. Biological material

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

61. A simple linked feeding series such as grass-rabbit-wolf is known as a(n):

A. Energy cycle
B. Food web
C. Carbon cycle
D. Food chain
E. Food cycle

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

62. Primary consumers are also known as:

A. Carnivores
B. Scavengers
C. Decomposers
D. Herbivores
E. Top carnivores

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

63. Omnivores eat mainly:

A. Detritivores
B. Plants
C. Animals
D. Dead plants and animals
E. Plants and animals

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

64. Detritivores, scavengers, and decomposers are all similar as they:

A. Consume nonliving organic matter
B. Are primarily microorganisms
C. Are primary producers
D. Are among the Earth's least useful organisms
E. Consume abiotic material

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

65. Energy enters a system as sunlight and a producer is able to produce 10 kilograms of tissue. If eaten, the producer would produce about _____ kilogram(s) of consumer tissue that would provide about _____ kilogram(s) of tissue for a secondary consumer.

A. 100; 10
B. 10; 1
C. 100; 1
D. 1; 0.1
E. 10; 0.1

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

66. Which of the following does not cycle repeatedly through the Earth's ecosystems?

A. Water
B. Nitrogen
C. Matter
D. Carbon
E. Energy

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Ecology

67. Living vegetation and the ocean are known as "carbon sinks" because:

A. They are made of carbon.
B. They create carbon.
C. They destroy carbon.
D. They store carbon.
E. Due to gravity, carbon is found closer to the ground.

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Ecology

68. Nitrogen is an essential component of:

A. Amino acids and proteins
B. Organic molecules
C. Sugars, the product of photosynthesis
D. The hydrologic cycle
E. Carbohydrates

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Ecology

69. Which of the following is not a step in the global nitrogen cycle?

A. Nitrogen fixation
B. Nitrification
C. Photosynthesis
D. Ammonification
E. Denitrification

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Ecology

70. Phosphorus cycles through the Earth's ecosystems:

A. Extremely quickly
B. Very slowly
C. Only when activated by human activity
D. Very rarely
E. Quickly when humans burn large amounts of fossil fuels

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Ecology

71. Which of the following biogeochemical cycles does not have an atmospheric phase?

A. Hydrologic cycle
B. Nitrogen cycle
C. Sulfur cycle
D. Carbon cycle
E. Phosphorous cycle

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Ecology

72. Human activities such as the _____ release large quantities of sulfur.

A. Burning of fossil fuels
B. Burning of wood
C. Use of synthetic fertilizers
D. Use of detergents
E. Cultivation of sulfur-fixing crops

Accessibility: Keyboard Navigation
Chapter: 03
Gradable: automatic
Section: 03.05
Topic: Ecology

73. The amount of energy in the universe is believed to be the same as it was billions of years ago.

TRUE

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.02
Topic: Ecology

74. Water molecules readily dissolve ionic substances such as sugar because of the covalent bonds between the hydrogen and oxygen atoms.

TRUE

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

75. Acids and bases are highly reactive; therefore, they can cause important environmental problems.

TRUE

Accessibility: Keyboard Navigation
Bloom's: 1. Remember
Chapter: 03
Gradable: automatic
Section: 03.01
Topic: Matter

76. Approximately one-half of the energy available in an organism is transferred to the consumer that eats it.

FALSE

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: automatic
Section: 03.04
Topic: Ecology

77. Which of the following statements is false?

I. Nutrients are cycled in the ecosphere in biogeochemical cycles.
II. Elements in the rock cycle are generally cycled slower than elements in gaseous cycles.
III. Biogeochemical cycles are driven by the sun and by gravity.
IV. There are three types of biogeochemical cycles: air, water, and land.
V. The hydrologic cycle involves the ocean, air, land, and living organisms.

Change the false answer above to a true statement.
IV is false. There are many types of biogeochemical cycles, including carbon, nitrogen, phosphorus, and sulfur.

Accessibility: Keyboard Navigation
Bloom's: 2. Understand
Chapter: 03
Gradable: manual
Section: 03.05
Topic: Ecology

78. Using examples, compare and contrast the cycling of energy through biological systems and biogeochemical cycles.

Points awarded on depth and accuracy of answer. Answer should mention sunlight as the starting point for all energy and transfer of energy through living things in the food chain/web (including energy lost as heat along each step of the pathway).

Accessibility: Keyboard Navigation
Bloom's: 3. Apply
Chapter: 03
Gradable: manual
Section: 03.05
Topic: Ecology

79. Outline the path of a carbon atom as it moves through the carbon cycle. Do not include human influences.

Should include the following: carbon dioxide in the atmosphere, taken up by photosynthesis and released by cellular respiration (same in the oceans); carbon stored in the oceans; carbon deposits (dead organisms) forming calcium carbonate (limestone) on the ocean floor; carbon deposition from dead plants and animals millions of years ago formed today's fossil fuels.

Accessibility: Keyboard Navigation
Bloom's: 3. Apply
Chapter: 03
Gradable: manual
Section: 03.05
Topic: Ecology

Chapter 03 Test Bank: Matter, Energy, and Life Summary

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