TEST NAME: **EOG Review**
TEST ID: **3106341**
GRADE: **08 - Eighth Grade**
SUBJECT: **Life and Physical Sciences**
TEST CATEGORY: **My Classroom**

Student: _____

Class: _____

Date: _____

1. **Which of these provides the BEST evidence that an environmental change has occurred?**

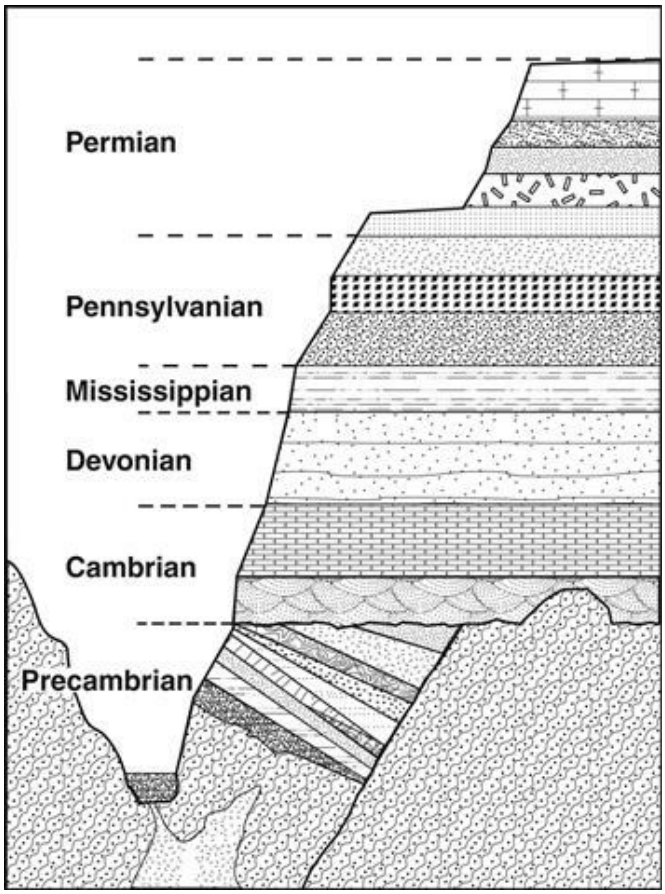
   A. a freshwater lake in the mountains

   B. marine fossils in a freshwater lake

   C. saltwater clams in the ocean

   D. a sandy beach next to the ocean

2. **The figure below shows a wall of the Grand Canyon.**




**The most recent rocks of the Grand Canyon formed during which geologic period?**

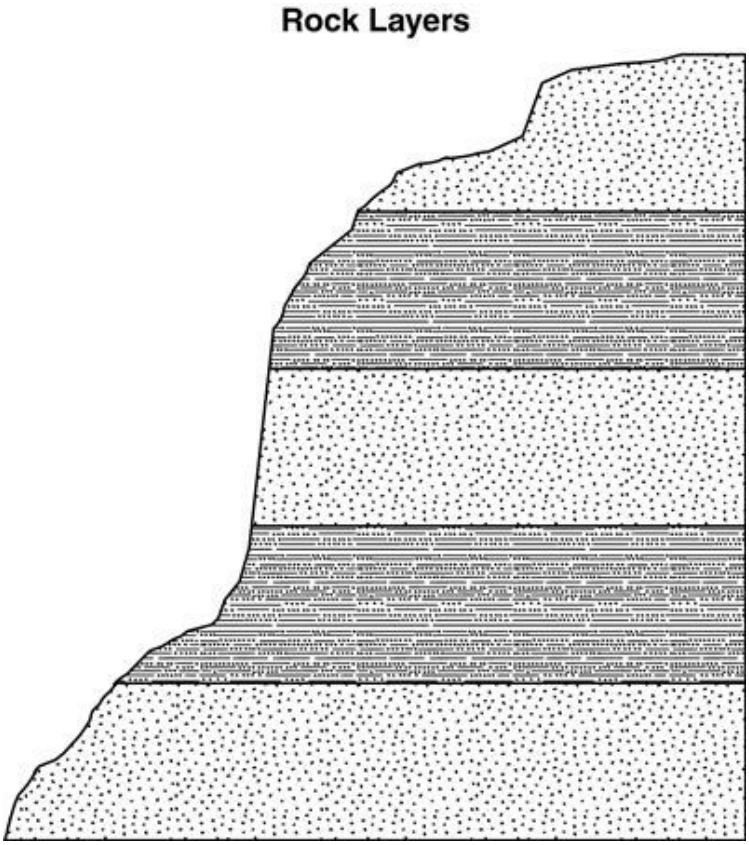
   A. Permian

   B. Devonian

   C. Cambrian

   D. Precambrian

3. **A teacher gave students this diagram of rock layers. The teacher directed the students to determine the relative age of each rock layer based only on the information presented in the diagram.**




**Which method can BEST be used by the students to determine the relative age of these layers?**

A. radiometric dating
B. rock type evaluation
C. the law of superposition
D. principle of uniformitarianism

4. **Which method would be BEST for scientists to use to determine the absolute age of a Precambrian igneous rock?**

A. index fossils
B. law of superposition
C. radiometric dating
D. law of original horizontality

5. **Which discovery provides the BEST evidence of the age of the solar system?**

A. The oldest known rocks on Earth have been dated to 3.8 billion years old.

B. The *Apollo 17* mission found moon rocks that have been dated to 4.5 billion years old.

C. The volcanic activity that occurs on Earth's surface has recycled all its rocks at least once since its formation.

D. The *Apollo 11* and the *Apollo 12* missions gathered moon rocks similar in age to the oldest-known Earth rocks.

6. **Scientists are able to conclude that a forested ecosystem existed in Antarctica millions of years ago by studying**

A. the current climate.

B. the fossil record.

C. glacial movement.

D. seafloor spreading.

7. **Paleontologists are scientists who study evidence of past life on Earth. Which method do paleontologists MOST likely use to determine the forms of life that existed millions of years ago?**

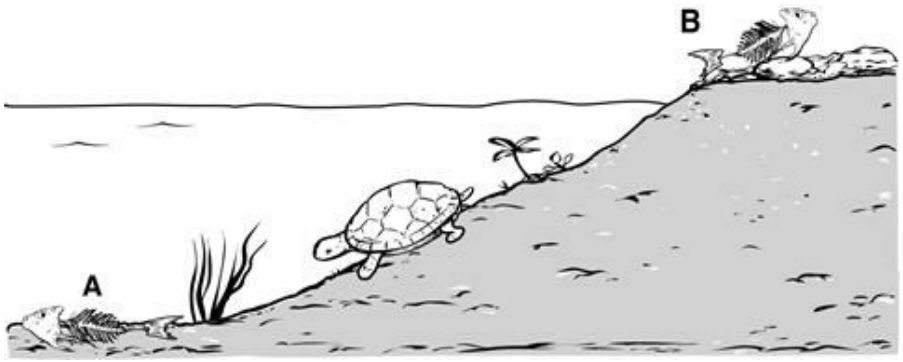
A. examine current species of plants and animals

B. research past species in the library

C. interview older scientists

D. examine fossils records

8. **When two fish die, Fish A sinks to the bottom of a lake and Fish B washes up on the rocky lake shore.**




**Why is a fossil more likely to form from the body of Fish A than from the body of Fish B?**

A. Soft parts of the fish will decay more quickly in the water.

B. Sediments in the water will quickly cover the fish.

C. Scavengers in the water will eat the remains of the fish.

D. Currents in the water will move the fish.

9. **In what type of rock would a geologist MOST likely find evidence of ancient life?**

A. sedimentary
B. foliated
C. metamorphic
D. volcanic

10. **A fossil discovered in Colorado dates from the early Mesozoic era. A year later a similar fossil is found in Wyoming that also dates from the early Mesozoic era. These two organisms most likely lived in**

A. the same environment at about the same time.
B. the same environment at different times.
C. different environments at about the same time.
D. different environments at different times.

11. Which ***best*** describes the most abundant form of ocean life?

A. fish
B. algae
C. microbes

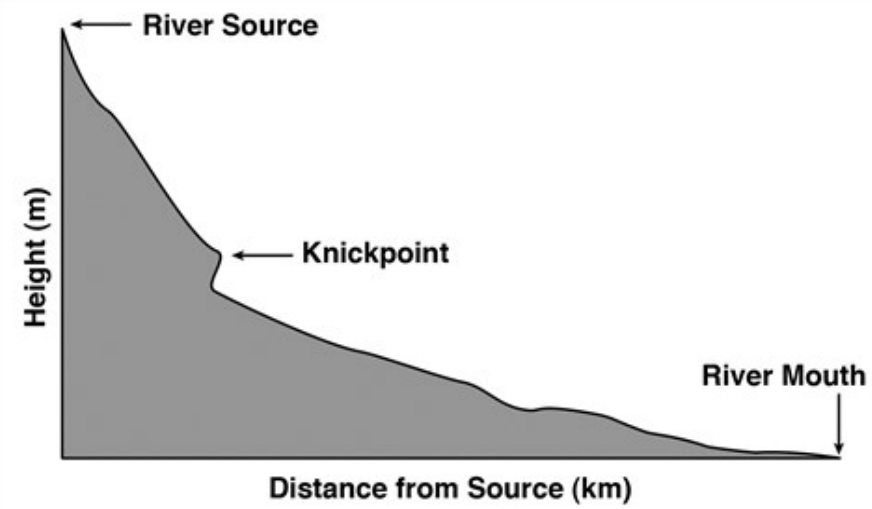
12. Which may cause scientists to be concerned about the quality of lake water?

A. low levels of salt
B. low levels of arsenic
C. high levels of oxygen
D. high levels of nitrates

13. Which has the ***greatest*** long-term impact on local water availability?

A. runoff
B. climate
C. pollution

14. **The figure below shows a cross section of the land beneath a river from the source to the mouth.**




**Which feature of the river would be seen at the knickpoint?**

A. headwaters
B. waterfall
C. tributary
D. delta

15. Of the compounds dissolved in ocean water, which is ***most*** needed by organisms that live there?

A. carbon dioxide
B. magnesium oxide
C. calcium carbonate
D. elemental nitrogen

16. **Which type of water reservoir contains the largest volume of fresh water?**

A. lakes
B. rivers
C. ice sheets
D. aquifers

17. A recreational lake experiences eutrophication because of excess nutrients. Based on this information, how would the recreational lake ***most likely*** appear?

A. clear and blue

B. oily and greasy

C. murky and full of algae

D. orange and rust-colored

18. Sea otters consume sea urchins, which in turn thrive in kelp forests off the coast of California. These underwater forests depend on cold water. Which would yield the ***most*** stable ecosystem for sea otters?

A. underwater volcanoes

B. hurricane activity

C. upwelling

19. Which aspect of stream ecology would be ***most*** affected by changes in water temperature?

A. water flow rate

B. coloration patterns of fish

C. energy transfer in the food chain

D. rate at which algae photosynthesizes

20. Which is the main source of dissolved oxygen in the ocean?

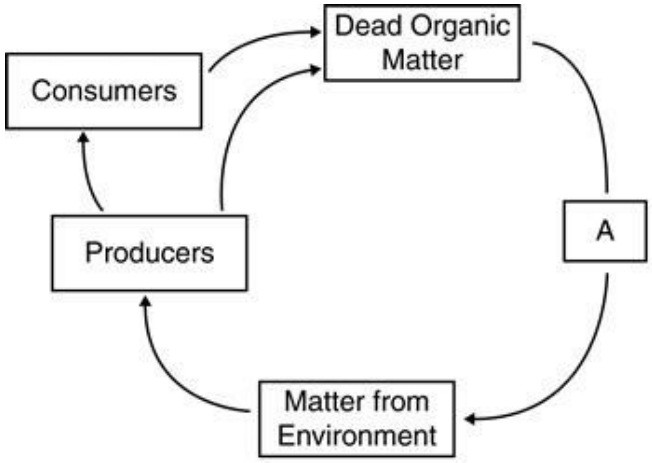
A. underwater earthquakes

B. decay of living organisms

C. animals that live near the surface

D. plants and algae that live near the surface

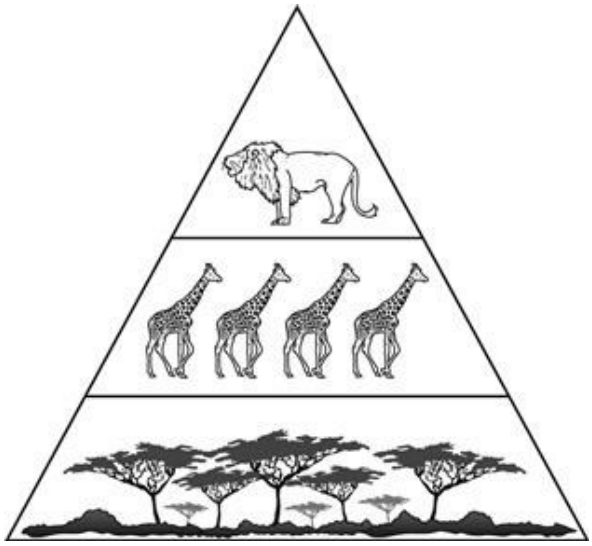
21. **Matter cycles between the environment and living organisms in a complex web of interactions.**




**Which organisms provide the important link in Box A from dead organic matter to matter from the environment?**

A. autotrophs
B. decomposers
C. parasites
D. photosynthesizers

22. **The diagram shows ecological relationships in an African savanna environment.**



**What happens to the amount of energy available to organisms when moving from trophic level 1 to trophic level 2?**

A. The energy decreases by approximately 90%.
B. The energy increases by approximately 90%.
C. The energy decreases by approximately 10%.
D. The energy increases by approximately 10%.

23. **Which of the following sentences BEST explains what happens when puddles evaporate?**

A. The water absorbs into the ground.
B. The particles of matter move more slowly.
C. The water changes from one form to another.
D. The particles of matter move closer together.

24. **Forest fires can benefit an ecosystem. Which abiotic factor does a forest fire MOST likely positively impact?**

A. Ashes become part of the soil when plants burn.
B. Fire changes the average temperature of the ecosystem.
C. Overall water increases because of methods used to fight the fire.
D. Rain decreases because of added particles in the air during the fire.

25. **In which process is nitrogen from the air put into a form that plants can use?**

A. nitrification
B. denitrification
C. nitrogen saturation
D. nitrogen fixation

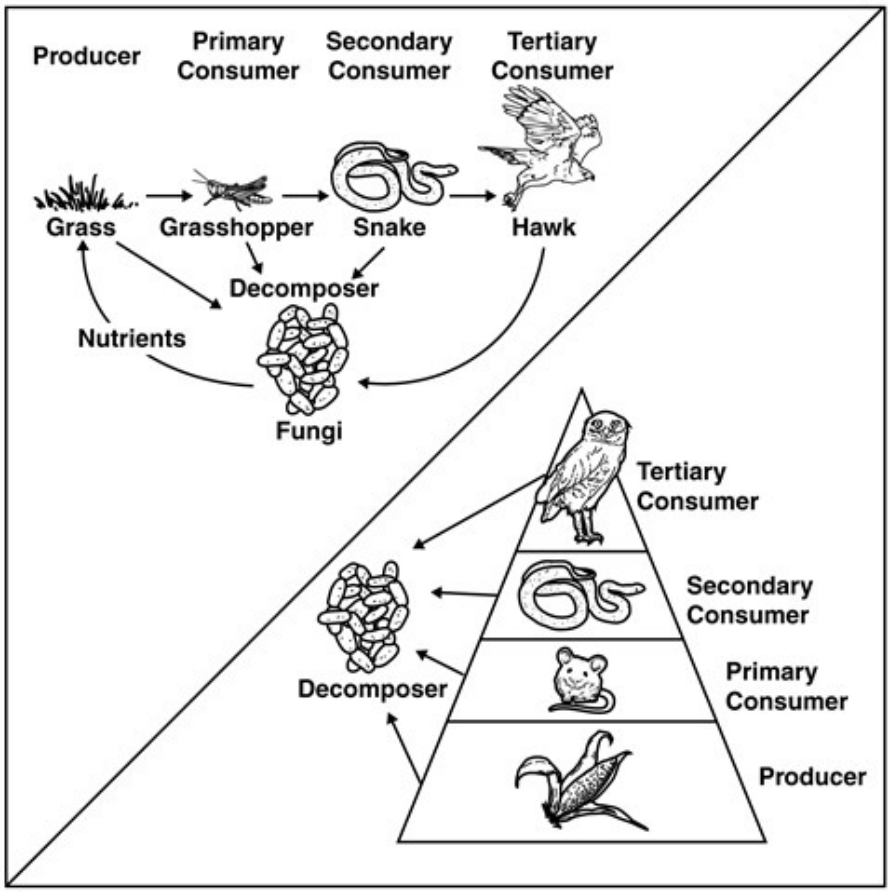
26. **Clear-cutting of old growth forests in Oregon provides lumber for housing. In the process of clear-cutting, plant diversity decreases and some organisms are pushed to extinction. Clear-cutting is an example of**

A. a change in aquatic conditions.
B. a change in societal conditions.
C. a change in atmospheric conditions.
D. a change in environmental conditions.

27. Which would a drought ***most likely*** affect?

A. all organisms in a particular ecosystem
B. only the plants in a particular ecosytem
C. only the animals in a particular ecosystem

28. **The diagrams show different ways to represent energy flow.**




**Although very different, both diagrams are acceptable because**

A. different energy diagrams require different organization.
B. both diagrams show the information accurately.
C. the numbers of animals in the diagrams are different.
D. the energy levels change between diagrams.

29. **Scientists have developed an allergy medication from a plant that is part of the rainforest food chain. What concern might develop when producing this medication from the plant?**

A. overproduction of the medication
B. increase in allergies in rainforest wildlife
C. lack of patients to test the new medication
D. decrease in a food source to rainforest wildlife

30. What happens to a population and to competition when there is a reduction of living space?

A. The population expands and competition intensifies.

B. Competition strengthens while the population contracts.

C. The population increases as competition decreases.

D. Competition weakens and the population decreases.

31. **Which of the following is a common renewable resource found in deserts?**

A. biodiesel

B. uranium

C. natural gas

D. solar energy

32. **Cars are powered by gasoline made from oil. Which is the BEST way to conserve gasoline?**

A. carpool to school

B. ride a bus to school

C. ride a bike to school

D. drive alone to school

33. **A typical nuclear power plant uses about 113 million liters (30 million gallons) of ocean or river water per hour for cooling. The water does not contact the nuclear material. It is taken in and surrounds the reactor where it absorbs thermal energy. Some of the water is released as steam, and the rest is returned to the source. Which subsystems are MOST affected by this use of water?**

A. atmosphere, biosphere, and lithosphere

B. atmosphere, lithosphere, and hydrosphere

C. hydrosphere, biosphere, and atmosphere

D. hydrosphere, biosphere, and lithosphere

34. **Acid rain can damage limestone buildings and marble statues. It can also harm organisms living in ponds and other ecosystems. Which pollutant in the atmosphere causes MOST of the acid rain?**

A. fluorocarbons from aerosol spray cans

B. nitrous oxide from volcanic eruptions

C. sulfur dioxide from burning fossil fuels

D. soil particles from the use of farm equipment

35. **The development of a nuclear power plant at an ocean site is expected to produce an enormous amount of electric power for a large population. Ocean water will be used to cool the plant and then returned to the ocean. What unintended consequences should be analyzed before starting construction?**

A. the effects of nutrients on algae
B. the effects of warmed water on aquatic life
C. the impacts of other energy-producing resources
D. the impacts of human populations on coastal areas

36. **Wind farms use turbines to generate electricity without using fossil fuels.**


**What is one negative consequence of using wind turbines to generate electricity?**

A. Wind turbines change global weather patterns.
B. Wind turbines produce excess carbon dioxide.
C. Power is produced by wind farms using a nonrenewable resource.
D. Developing and maintaining wind farms damages ecosystems.

37. **Which of these can be recycled in an attempt to conserve resources?**

A. gasoline
B. sunlight
C. aluminum
D. natural gas

38. **The burning of fossil fuels affects the atmosphere by**

A. adding more heat and carbon dioxide.
B. reducing the amount of necessary heat.
C. taking water vapor out of the atmosphere.
D. putting more oxygen in the atmosphere.

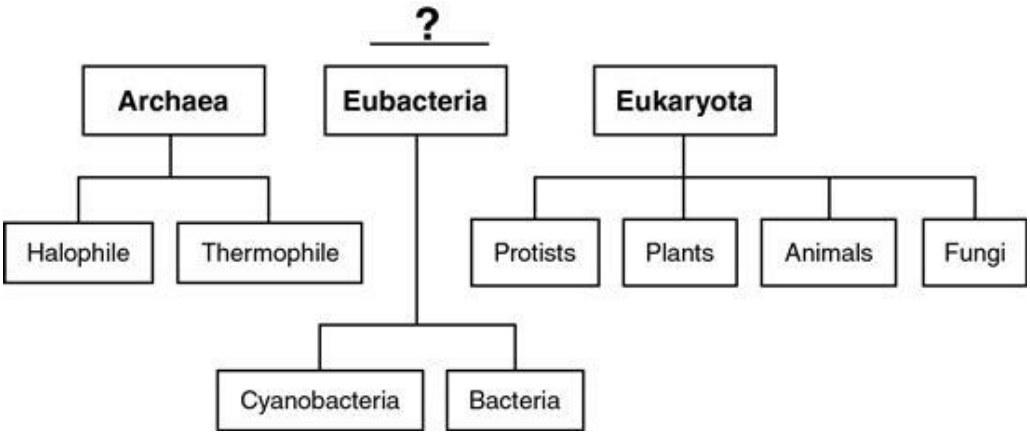
39. **Swamp plants die, fall to the ground, and are buried by other dying plants. Approximately how long would it take for plants to possibly become a fossil fuel?**

A. 1,000,000 years
B. 100,000 years
C. 10,000 years
D. 1,000 years

40. **Research is being conducted on using energy from the Sun to split water molecules into hydrogen and oxygen. The oxygen will be released into the environment, and hydrogen will be used for fuel. Which statement describes how this technology will benefit the environment?**

A. The properties of hydrogen will be better understood.
B. The availability of clean resources will increase.
C. The atmosphere will be supplied with oxygen.
D. The Sun's abundant supply of energy will be used.

41. **This diagram represents a classification of living organisms.**




**Which word is the BEST title for this diagram?**

A. Phyla
B. Classes
C. Families
D. Domains

42. Which would ***best*** allow a species to survive environmental changes?

A. similar physical features

B. low mutation rate

C. small population

D. genetic diversity

43. Which would indicate that a series of fossils represent the evolution of the horse?

A. All of the fossils were found in the same layers of rocks as horse fossils.

B. All of the fossils are completely identical to horse bones.

C. All of the fossils show similar structures to that of the modern horse.

D. All of the fossils were located in the same place on Earth as horses.

44. A low-level species in a food web suddenly becomes extinct. Of its predators, which will ***most likely*** survive?

A. the predators that are genetically similar

B. the predators that feed on many different organisms

C. the predators that primarily feed on the now-extinct species

45. **Charles Darwin made famous observations of finches on islands in the Pacific Ocean. The birds were believed to have come all from one population, but when separated on the islands with differing habitats, the birds changed. The beaks of the birds on islands with lots of seeds were different from the beaks of the birds on islands with lots of insects. How did their beaks come to match the food in their environments so well?**

A. The birds migrated to the island with the right food supply for their beaks.

B. The food supply on the islands changed to match the birds' beaks.

C. The predators on the islands eliminated the birds with the "wrong" beaks.

D. The birds with the "right" beaks for the food supply had more young.

46. **Who was the first person to base a system of classification on organisms having similar structures?**

A. Aristotle
B. Darwin
C. Einstein
D. Linnaeus

47. Which is an example of the forelimbs of humans and bats having the same basic skeletal structure but derived from the same evolutionary origin?

A. cellular structures
B. analogous structures
C. homologous structures

48. **A student used this table to classify groups of organisms into domains.**

| Domain Archaea | Domain Eubacteria | Domain Eukaryota |
|---|---|---|
| • | • | • protists |
| • | • | • ___?___ |
| • | • | • ___?___ |

**Which two groups of organisms can also be classified in the Domain Eukaryota?**

A. thermophiles and cyanobacteria
B. plants and thermophiles
C. animals and bacteria
D. plants and animals

49. **Organisms can be separated by their MOST basic characteristics into the broadest groups known as**

A. kingdoms.
B. domains.
C. phyla.
D. orders.

50. **How are organisms classified as *Eukarya* different from organisms classified as *Archaea* and *Bacteria*?**

A. They are all multicellular.

B. They all reproduce sexually.

C. They all produce their own food.

D. They all have membrane-bound nuclei.

51. **When potassium and bromine atoms form chemical bonds, which of these is produced?**

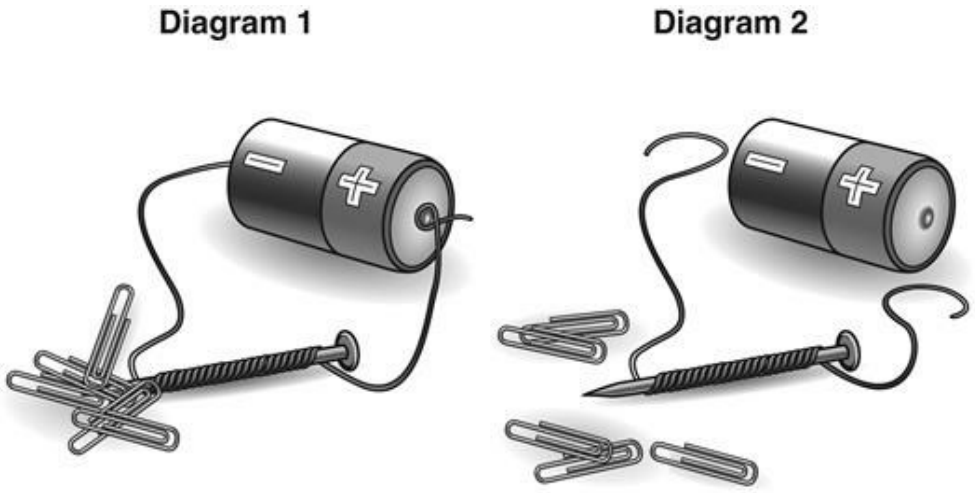
A. an element

B. a mixture

C. a compound

D. a new form of matter

52. **A student wrapped a wire around an iron nail and connected the wire to a battery. The nail became magnetized, as shown in Diagram 1. When the battery was disconnected, the nail was no longer magnetized, as shown in Diagram 2.**




**Which statement BEST describes what occurred during this investigation?**

A. A new property was acquired when the nail became magnetized and caused a chemical change in the nail.

B. When the nail became magnetized the iron atoms in the nail were temporarily aligned and caused a physical change.

C. The electric current passing through the wires heated the nail and caused the nail to undergo a chemical change.

D. The electric current passing through nail temporarily changed the iron atoms into another substance and caused a physical change.

53. **Which demonstrates a chemical change?**

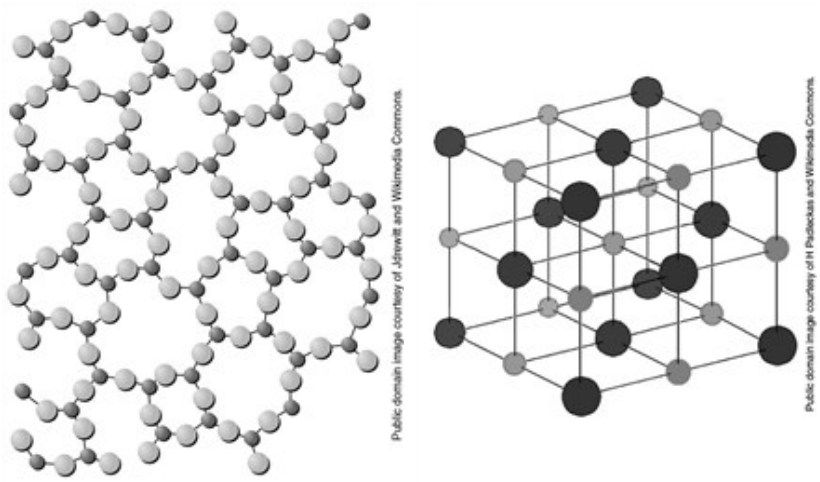
A. glass breaking
B. a garbage can rusting
C. sugar dissolving in water
D. water evaporating from a sidewalk

54. Which is an example of a mixture?

A. sodium chloride
B. fruit punch
C. water

55. **Students studying solid-state physics are discussing the microscopic structure of materials.**

**Material X** **Material Y**



**Which student's statement correctly identifies the nature of these materials?**

A. Material X would be classified as a crystalline solid because atoms are in a highly ordered three-dimensional arrangement.
B. Material X would be classified as an amorphous solid because atoms are in a highly ordered three-dimensional arrangement.
C. Material Y would be classified as a crystalline solid because atoms are in a highly ordered three-dimensional arrangement.
D. Material Y would be classified as an amorphous solid because atoms are in a highly ordered three-dimensional arrangement.

56. Which statement ***best*** explains how periods on the periodic table are organized?

A. increasing atomic number from left to right

B. increasing number of neutrons from left to right

C. decreasing number of electrons from left to right

D. decreasing atomic mass number from left to right

57. How can mixtures ***best*** be described?

A. made of one element

B. made of different elements that are all chemically bonded together

C. made of different elements that are not all chemically bonded together

58. **Which characteristic of an element determines its placement in the periodic table?**

A. mass

B. size

C. number of neutrons

D. number of protons

59. **A student is testing a solid material to determine whether it is a pure substance or a mixture. Which observation would MOST likely indicate that the material is a mixture?**

A. The material has crystals of two different colors.

B. The material does not dissolve completely in water.

C. The material does not melt when it is heated over a burner.

D. The material reacts with an acid solution to form bubbles of gas.

60. Which is a mixture?

A. $H_2O$

B. salad

C. table salt

61. **Sugars are necessary for human cell function. Which of the following are human cells NOT capable of doing?**

A. attaching sugars to protein molecules
B. building larger molecules from sugars
C. creating simple sugars from smaller molecules
D. breaking down complex carbohydrates into simple sugars

62. Why is respiration important for digestion?

A. Respiration provides carbon dioxide for the digestion of food.
B. Respiration provides hydrogen for the digestion of food.
C. Respiration provides oxygen for the combustion of food.

63. Which part of a plant captures the light energy used in photosynthesis?

A. guard cells
B. chlorophyll
C. roots

64. **Many factors affect human health. Which term BEST describes diet and exercise for MOST adults?**

A. lifestyle choice
B. environmental factor
C. genetic predisposition
D. medically prescribed behavior

65. **How are plant cells and human cells the same?**

A. They can produce their own oxygen.
B. They make their own food from sunlight.
C. They can receive nutrients through the cell wall.
D. They use mitochondria to release energy from sugars.

66. Why is a healthy diet important?

A. It maintains a constant body temperature.

B. It prevents damage to internal organs.

C. It makes oxygen for all the cells in the body.

D. It supplies the body's needs for growth and energy.

67. **How are bacterial cells and human cells alike?**

A. They allow oxygen through the cell wall.

B. They allow carbon dioxide through the cell wall.

C. They allow nutrients through the cell membrane.

D. They allow nutrients through the nuclear membrane.

68. Which activities can ***most*** effectively increase energy levels, increase respiration, and burn calories?

A. jogging

B. napping

C. weightlifting

69. **Which technology enables doctors to monitor the function of the heart?**

A. dialysis machine

B. electrocardiogram

C. electroencephalogram

D. automatic external defibrillator

70. Which ***best*** describes the relationship between digestion and respiration?

A. The respiratory and digestive systems are separate in their activities.

B. The muscles along the digestive tract depend upon oxygen in order to function.

C. Digestion breaks down food as fuel and the respiratory system only affects the lungs as well as the blood cells.

71. **The table below shows leading causes of death in the United States.**

**Leading Causes of Death**
**United States 2007**

| Cause of Death | Number of Deaths |
|---|---|
| Heart disease | 616,067 |
| Cancer | 562,875 |
| Stroke | 135,952 |
| Accidents | 123,706 |
| Diabetes | 71,382 |
| Influenza and Pneumonia | 52,717 |

**Which of the causes can be categorized as an infectious disease?**

A. cancer
B. stroke
C. diabetes
D. influenza

72. What type of science allows us to alter the DNA of a corn plant so that it will contain more protein?

A. biology
B. biotechnology
C. geology
D. physiology

73. **Which of these diseases is caused by a bacterium?**

A. rabies
B. influenza
C. strep throat
D. chicken pox

74. **Human Immunodeficiency Virus (HIV) infects the cells that coordinate the human immune response. When these cells are killed or compromised, the body cannot effectively protect itself from infection. Which cells does HIV infect?**

A. natural killer T cells
B. regulatory T cells
C. cytotoxic T cells
D. helper T cells

75. Which organisms are used to manufacture human insulin?

A. algae

B. amoebas

C. bacteria

D. protozoans

76. Which makes it possible for a person who has recovered from a cold to catch another cold?

A. A cold is a viral infection with many different strains.

B. A cold is a bacterial infection that remains active in the body.

C. A cold is a bacterial infection present only during the winter months.

D. A cold is a viral infection that remains active until treated with antibiotics.

77. Humans occasionally become infected with common colds and flu after flying on crowded airplanes. Which microscopic biological hazard is ***most likely*** responsible?

A. food-borne bacteria

B. airborne contagions

C. vector-borne parasites

D. environmental mutagens

78. Many countries in the world eat a diet consisting mostly of rice which is filling but is often low in nutritional value. Which one of these biotechnologies could be used to create a more nutritional rice?

A. genetic modification of current rice plants

B. selective breeding of current rice plants

C. cloning of current rice plants

79. **Having students wash their hands frequently with soap and water will limit the spread of infectious disease by**

A. protecting harmless bacterial cells.

B. changing viral and bacterial nucleic acids.

C. releasing mutated cells from pores.

D. removing viruses and bacteria from the skin.

80. How does the structure of a virus compare to that of a bacterium?

A. They are both multicellular and living.

B. They are both single-celled and nonliving.

C. The virus is nonliving so it has no cells, whereas the bacterium is single-celled.

D. The bacterium is nonliving, so it has no cells, whereas the virus is single-celled.