Name: _____   **Date:** _____

1. Use the Periodic Table of Elements to answer the following question(s).

    Which sentence about the periodic table of elements is *true*?

    A. All elements in period 2 are metals.

    B. All elements in group 18 are metals.

    C. Metals are found on the left side of the periodic table.

    D. Metals are found on the right side of the periodic table.

2. Steel is a metal that is made from iron and carbon. During the steel making process, iron and carbon are melted, blended together, and then allowed to harden into a solid. The iron and carbon do not chemically react with each other. After steel was made, 20 samples were taken from one piece and tested. Each sample contained 98% iron and 2% carbon.

    Which of the following terms *best* describes steel?

    A. element

    B. compound

    C. homogeneous mixture

    D. heterogeneous mixture

3. A diagram of the periodic table of the elements is shown below.

    Periodic Table of the Elements
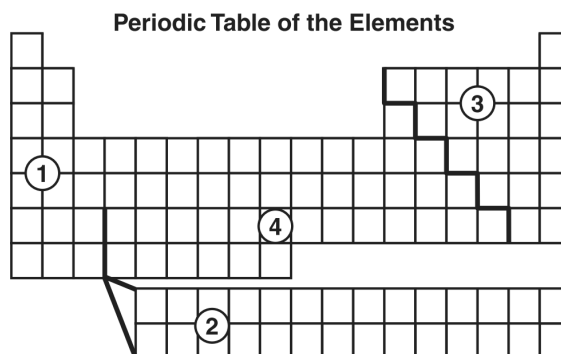
    In which region of the table would nonmetals be found?

    A. 1   B. 2   C. 3   D. 4

4. Which class of elements *best* conducts electricity?

    A. metals   B. nonmetals

    C. semimetals   D. noble (inert) gases

5. Generally, how do atomic masses vary throughout the periodic table of the elements?

   A. They increase from left to right and top to bottom.

   B. They increase from left to right and bottom to top.

   C. They increase from right to left and top to bottom.

   D. They increase from right to left and bottom to top.

6. Refer to this portion of the periodic table to answer the question that follows.

| 3 Lithium **Li** 6.939 2,1 | 4 Beryllium **Be** 9.01218 2,2 | 5 Boron **B** 10.81 2,3 | 6 Carbon **C** 12.011 2,4 | 7 Nitrogen **N** 14.0067 2,6 | 8 Oxygen **O** 15.9994 2,6 | 9 Fluorine **F** 18.9984 2,7 | 10 Neon **Ne** 20.183 2,8 |

   Which element in this group would be the *least likely* to react with other elements?

   A. Boron   B. Carbon

   C. Neon   D. Oxygen

7.

   Different elements are *most likely* to react in similar ways when they _____.

   A. are members of the same period

   B. are members of the same group

   C. have nearly the same atomic mass

   D. have the same number of neutrons

8. The Periodic Table of the Elements classifies all of the known elements into categories based on their physical and chemical properties. Repeating patterns within the table are useful in predicting how elements combine to form every kind of matter.

   In order to be identified as the element carbon (C), an atom must have _____.

   A. 6 protons   B. 6 neutrons

   C. 12 electrons   D. 12 electrons

9. The pictures below show the position of different elements on the periodic table. Which picture has an X in the locations of the three elements that would be most similar in the way they react?

A.
X		
X		
X		

B.
X	X	X

C.
X		
	X	
		X

D.
		X
	X	
X		

10. Use this element from the periodic table to answer the question.

14
Si
Silicon
28.1

What is the atomic mass for silicon?

A. 14.0   B. 14.1   C. 28.1   D. 42.1

11. On a warm sunny afternoon, ocean water splashed onto a rock. A short time later, the rock was dry. Which statement *best* explains what happened to the water on the rock?

A. Heat caused the water to become a gas.

B. Heat melted the water and it disappeared.

C. Salt caused the water to become a gas.

D. Salt melted the water and it disappeared.

12. The random molecular motion of a substance is greatest when the substance is

A. condensed.   B. a liquid.

C. frozen.   D. a gas.

13. **In the Kitchen**

Common kitchen appliances include electric stoves, toasters and blenders. Each appliance uses an energy source and involves energy changes to prepare food.

An open pot of water is heated on the stove. As water boils, the molecules _____.

A. move slower and closer together

B. move faster and farther apart.

C. get larger

D. get smaller

14. The picture below shows the Sun shining on an open jar with some water in it.
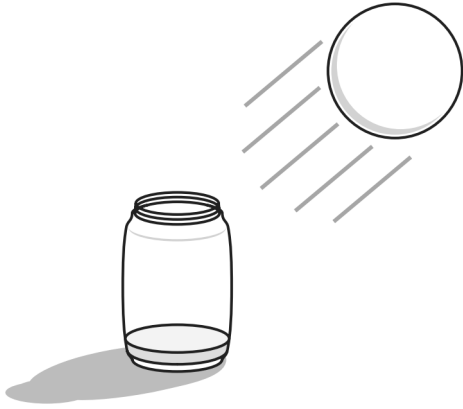
Justin put the jar of water on a picnic table outside in the sunlight. Which of the following pictures shows what Justin would observe after all of the water had turned into a gas?

A.

B.

C.

D.

15. In a laboratory, a sealed container with 100 g of steam is cooled until all the steam becomes a liquid. The container is then cooled further until all the water becomes a solid.

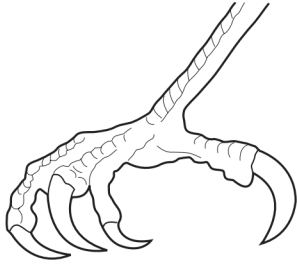Which of the following remains constant during both of these changes?

A. the mass of the water

B. the pressure in the container

C. the total energy of the water

D. the position of the atoms in the container
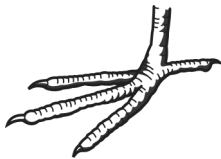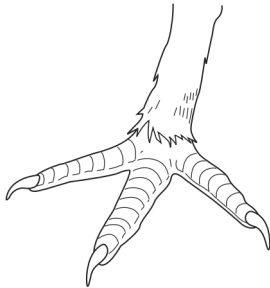
16. Which bird foot is *best* for swimming?

A.
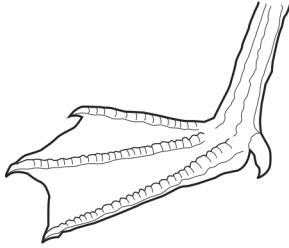
B.
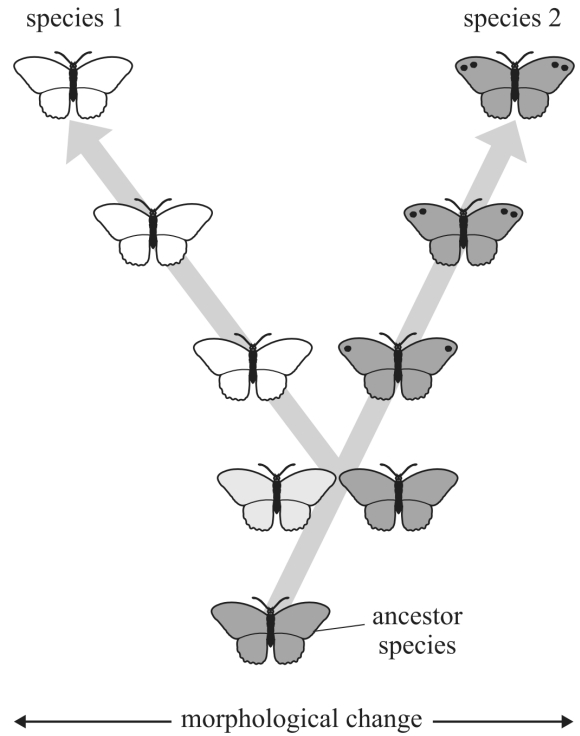
C.

D.

17. The illustration below shows the morphological change of two species.

species 1   species 2

ancestor
species

← morphological change →

Which statement explains why species 1 and species 2 are different?

A. An individual changed itself to suit the environment.

B. Natural selection can cause gradual speciation changes.

C. Interbreeding of species 2 results in no genetic mutations.

D. Extinction of ancestor species occurs as a result of interbreeding.

18. How is natural selection in the evolution of long necks in giraffes *best* explained?

   A. Shorter-necked giraffes were killed by long-necked giraffes.

   B. Giraffe necks grew longer because of the bone structure of the animals.

   C. Giraffes with longer necks survived because they were better suited to the environment.

   D. Long-necked giraffes mated only with other long-necked giraffes.

19. Which of the following is a source of genetic variation within a species?

   A. cloning   B. mutation

   C. selective breeding   D. natural selection

20. Which of these *best* illustrates natural selection?

   A. An organism with favorable genetic variations will tend to survive and breed successfully.

   B. A population monopolizes all of the resources in its habitat, forcing other species to migrate.

   C. A community whose members work together utilizes all existing resources and migratory routes.

   D. The largest organisms in a species receive the only breeding opportunities.

21. The diagram below shows the beaks of five species of birds that developed over time from one parent species. The five species of birds can be found living in the same area.
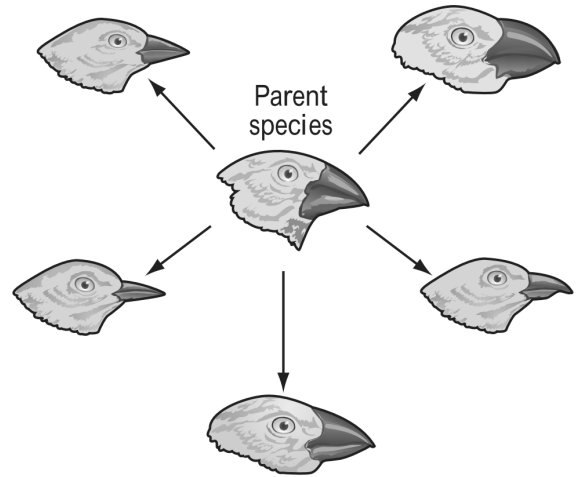

Which of the following *best* explains why the beak shape of each species of bird developed differently?

   A. Each beak shape helps the birds to produce different songs.

   B. Each beak shape is an adaptation to a specific source of food.

   C. Each beak shape is designed to construct a different type of nest.

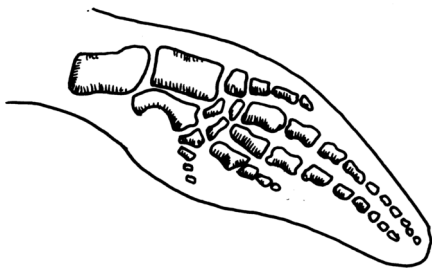   D. Each beak shape helps protect the birds from a different predator.

22. The pictures below show bone structures in three animals.
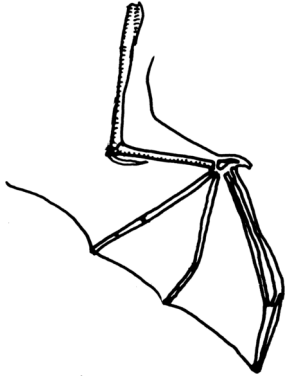

Bat Wing
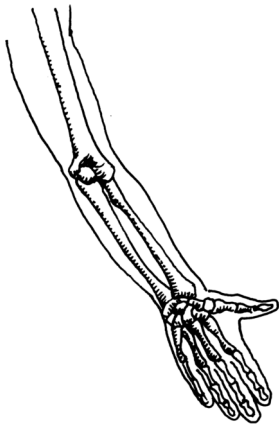
Human Arm

Dolphin Flipper

The similarity in structure of the bones of these animals suggests that

A. the size of these bones is the same.

B. these species share common ancestors.

C. these species developed at the same time and location.

D. the chemical make-up of these animals is exactly the same.

23. The bones of a whale flipper are similar to the bones of a bat wing as shown in the illustration below.
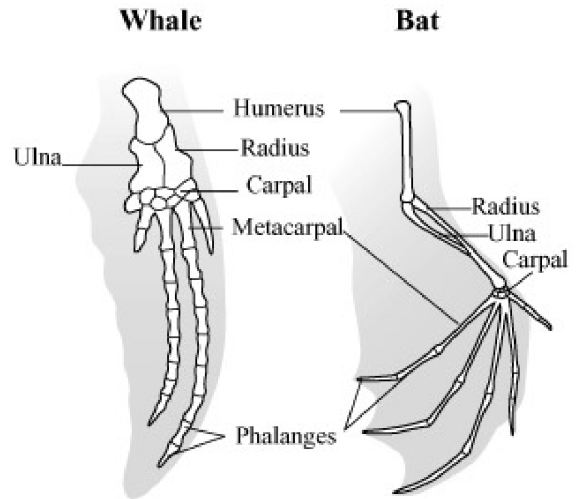
What does this similarity in bone structure suggest about the whale and the bat?

A. They use the same methods to travel.

B. They evolved from a common ancestor.

C. They can migrate to the same locations.

D. They can manipulate objects in the same way.

24. The picture below shows an energy pyramid.
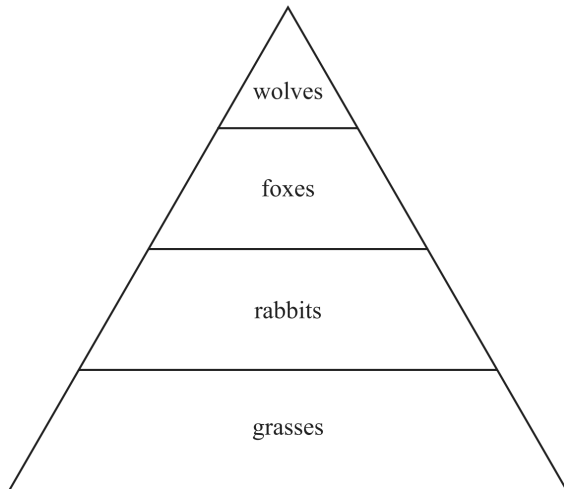
What will *most likely* happen to the foxes and the wolves if the rabbits are removed?

A. The foxes will eat more wolves.

B. The foxes will eat fewer wolves.

C. There will be more foxes and wolves.

D. There will be fewer foxes and wolves.

25. The picture below shows an ocean bay food chain.

Sun   kelp   sea   crabs   sea   arctic
               urchins   ducks   foxes
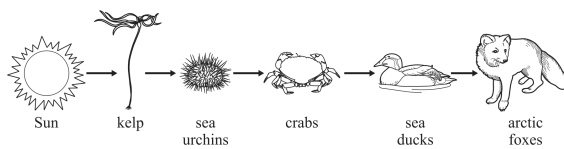
Sea otters move into the ocean bay. They eat all the sea urchins. This change will cause the

A. kelp to have less food.

B. crabs to have more food.

C. sea ducks to have less food.

D. arctic foxes to have more food.

26. The diagram below shows a simple food web.

Sun   grass   mouse   coyote
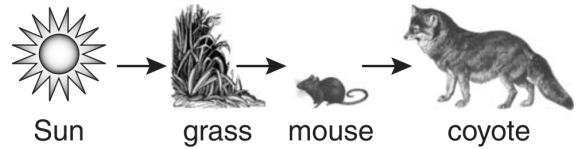
Which of the following animals might compete with the coyote in this food chain?

A.

B.

C.


D.

27. Decomposers are important in the food chain because they

A. produce their own food using light from the Sun.

B. stop the flow of energy from one organism to another.

C. break down dead organisms and recycle nutrients into the soil.

D. are microscopic and other organisms cannot consume them.

28. We get energy from the food we eat. The energy in the food first comes from the

A. soil.

B. fertilizers used by farmers.

C. sun.

D. vitamins added by food manufacturers.

29. Which example shows a relationship between a living thing and a nonliving thing?

A. An insect is food for a salmon.

B. Water carries a rock downstream.

C. A tree removes a gas from the air.

D. A flower makes food for a butterfly.

30. Scientists found that, over a period of 200 years, a mountain pond was transformed into a meadow. During that time, several communities of organisms were replaced by different communities. Which of these best explains why new communities were able to replace older communities?

A. The original species became extinct.

B. Species in the older community died from old age.

C. The abiotic characteristics of the habitat changed.

D. Diseases that killed the older organisms disappeared.

31. The highest concentration of life exists in the top 200 meters of ocean water. The *most important factor* that influences this concentration of life is the

A. amount of gases at the surface.

B. amount of nutrients in the water.

C. large number of predators at lower depths.

D. amount of sunlight.

32. Use the picture below to answer the following question.
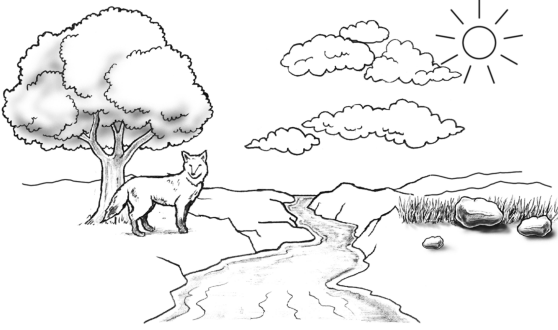
Which of these lists *only* living parts of this ecosystem?

A. fox, tree, grass   B. sun, stream, cloud

C. cloud, grass, rock   D. stream, cloud, fox

33. Which relationship is mutualistic?

A. an insect that lives and feeds on the body of an alligator

B. an ant that lives on a plant and defends the plant from other insects

C. a bird that migrates to follow the movements of the butterflies that it eats

D. a deer that eats one kind of plant, which allows another kind of plant to grow in its place

34. Many bacteria are decomposer organisms. Which of the following statements *best* describes how these bacteria help make soil more fertile?

A. The bacteria break down water into food.

B. The bacteria change sunlight into minerals.

C. The bacteria combine with sand to form rocks.

D. The bacteria break down plant and animal matter.

35. A tick feeds on the blood of a deer and can transmit diseases. Which of these terms describes the relationship between the tick and the deer?

A. parasitism   B. mutualism

C. predation   D. competition

36. Look at the picture below.
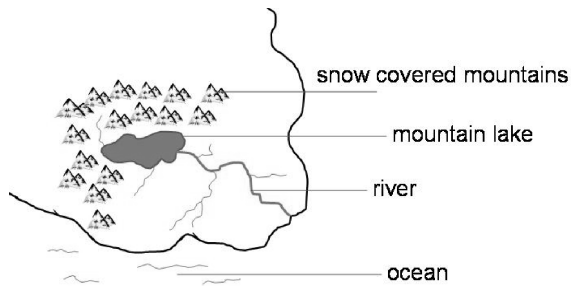
Where would you find the saltiest water?

A. river

B. ocean

C. mountain lake

D. snow covered mountains

37. Where is most of Earth's freshwater?

A. In the ground

B. In the atmosphere

C. In lakes and rivers

D. In glaciers and icecaps

38. Where can brackish water *most likely* be found?

A. Where lakes and rivers meet

B. Where rivers and oceans meet

C. Where ponds and creeks meet

D. Where streams and lakes meet

39. Deep-diving submarines have helped scientists learn that photosynthesis does not take place in the deeper parts of the ocean. Which of the following explains why photosynthesis does not occur very deep in the ocean?

A. There is no oxygen.

B. There is no glucose.

C. There is no sunlight.

D. There is no nitrogen.

40. Which *best* determines the health of a lake used as a source of freshwater?

A. its depth and width

B. its temperature and pH

C. its location and depth

D. its temperature and depth

41. Why is water from an aquifer more likely to be cleaner than water from other sources?

A. because it forms where fresh and salt water meet

B. because it receives water directly from precipitation

C. because it rises to the surface near the ocean

D. because pollutants are filtered by rock and soil deep within Earth

42. In which oceanic zone do clams and crabs survive by burrowing in the sand?

 A. oceanic   B. intertidal

 C. deep ocean   D. open ocean

43. If a body of water has high turbidity levels, what can *most likely* be concluded?

 A. It has a low pH.

 B. It is unsafe to drink.

 C. It is too hot to drink.

 D. It contains a lot of chemicals.

44. Which will *most likely* result if hot water is continually dumped into a stream?

 A. Nitrate levels in the stream will increase.

 B. Dissolved-oxygen levels in the stream will decrease.

 C. Phosphorus levels in the stream will decrease.

45. The road shown below was suddenly broken by a natural event.
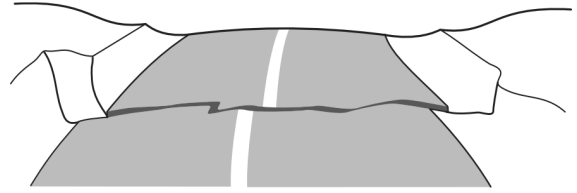
Which natural event *most likely* caused the crack in the road?

 A. wind

 B. earthquake

 C. a lava flow from a volcano

 D. an avalanche down a mountain

46. Which of the following *best* describes Earth's tectonic plates?

 A. They move away from each other at the equator.

 B. They move because of convection currents in the mantle.

 C. They collide at midocean ridges.

 D. They form at subduction zones.

47. An earthquake occurs when the tectonic plates below Earth's surface suddenly shift. These shifts of the tectonic plates are caused by

A. movements in Earth's core.

B. movements in Earth's mantle.

C. deposition of sediments.

D. eruption of volcanoes.

48. Use the diagram below to answer the following question(s).
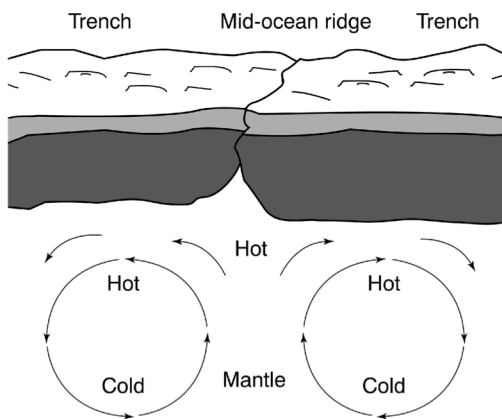
Based on the diagram, which process explains why less dense, hot magma rises to the surface to displace more dense, cooler magma?

A. conduction   B. diffusion

C. radiation   D. convection

49. Seafloor spreading provides evidence of which of the following Earth processes?

A. erosion of coastlines

B. weathering of mountains

C. movement of crustal plates

D. formation of sedimentary rocks

50. Which statement explains how a population's genetic variability and diversity can be affected by selective breeding?

A. Genetic variability and diversity decrease because only select individuals are bred.

B. Genetic variability and diversity increase because only select individuals are bred.

C. Genetic variability increases and diversity decreases because only select individuals are bred.

D. Genetic variability decreases and diversity increases because only select individuals are bred.

EOG Practice Set   04/14/2015

1.			21.	
Answer:	C		Answer:	B
2.			22.	
Answer:	C		Answer:	B
3.			23.	
Answer:	C		Answer:	B
4.			24.	
Answer:	A		Answer:	D
5.			25.	
Answer:	A		Answer:	C
6.			26.	
Answer:			Answer:	C
7.			27.	
Answer:	B		Answer:	C
8.			28.	
Answer:			Answer:	C
9.			29.	
Answer:			Answer:	C
10.			30.	
Answer:	C		Answer:	C
11.			31.	
Answer:	A		Answer:	D
12.			32.	
Answer:	D		Answer:	A
13.			33.	
Answer:	B		Answer:	B
14.			34.	
Answer:	B		Answer:	D
15.			35.	
Answer:	A		Answer:	
16.			36.	
Answer:	A		Answer:	B
17.			37.	
Answer:	B		Answer:	D
18.			38.	
Answer:	C		Answer:	B
19.			39.	
Answer:	B		Answer:	C
20.			40.	
Answer:	A		Answer:	B

41.
Answer: D

42.
Answer: B

43.
Answer: B

44.
Answer: B

45.
Answer: B

46.
Answer: B

47.
Answer: B

48.
Answer: D

49.
Answer: C

50.
Answer: A