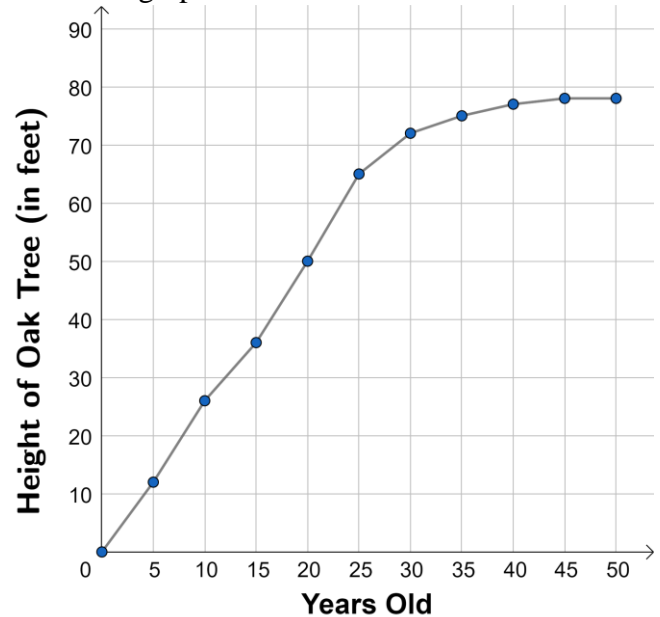


**Directions:** Choose the best choice for each question. Write the CAPITAL LETTER in the answer sheet provided. Each correct answer is worth +5 points. For each incorrect answer, deduct 2 points. No points are awarded or deducted for skipped or unanswered questions. Erasures are permitted.

1. Water in a glass beaker is heated from 50°C to 120°C. Which of the following is expected?
  - A. The water will turn into ice cubes.
  - B. The water will turn into steam.
  - C. The water will break the jar.
  - D. The water will turn into its liquid form.
  
2. What is the primary function of the digestive system of an organism?
  - A. send signals from a stimulus to the brain
  - B. process light rays into nerve impulses
  - C. change food into energy
  - D. pump blood throughout the body
  
3. When the moon directly passes between the Earth and the Sun, which of the following occurs?
  - A. solar eclipse
  - B. lunar eclipse
  - C. summer solstice
  - D. winter solstice
  
4. A beach ball will float in a swimming pool. This is due to which property of the beach ball?
  - A. color
  - B. density
  - C. circumference
  - D. temperature

5. The height of an oak tree over time is shown in the graph below.



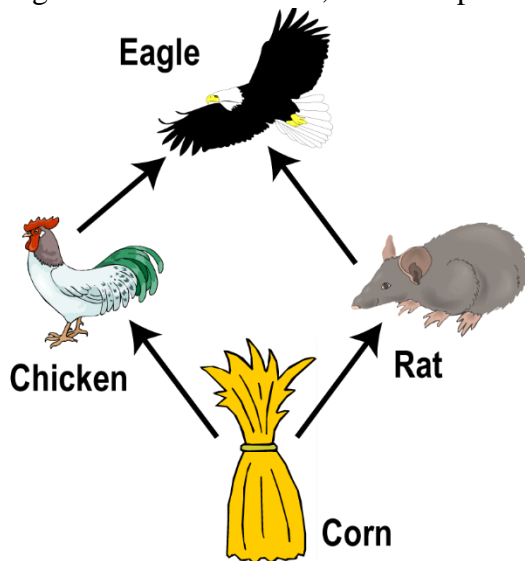
Which of the following statements about the oak tree is true based on the graph?

- A. The oak tree provided great shade.
- B. The oak tree was replanted when it was 15 years old.
- C. The oak tree lived through a drought after it was 30 years old.
- D. The oak tree grew at the faster rate before it was 25 years old than after 25 years old.

6. The earphones shown provide an example of which type of energy transformation?



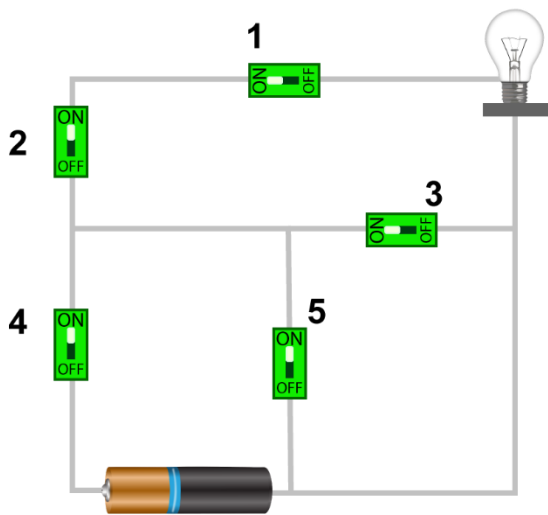
- A. sound energy into solar energy  
 B. sound energy into mechanical energy  
 C. electric energy into sound energy  
 D. light energy into sound energy
7. In the food web shown, which of the organisms is a consumer, but not a producer?



- A. eagle  
 B. chicken  
 C. rat  
 D. corn

8. What planet lies between Earth and Jupiter?  
 A. Neptune  
 B. Venus  
 C. Saturn  
 D. Mars
9. Marcia takes beads of different colors (used to make necklaces and bracelets) and places them in a jar. She adds water and then stirs the beads in the jar. What is the mostly likely result?  
 A. The beads all change to the same color.  
 B. The beads melt into a liquid.  
 C. The beads fuse together to form one big mass.  
 D. The beads do not change.
10. Which of the following is an example of a renewable resource?  
 A. plastics  
 B. fresh water  
 C. natural gas  
 D. coal

11. A circuit with five open switches are shown. Which set of these switches should be closed in order to light up the bulb?

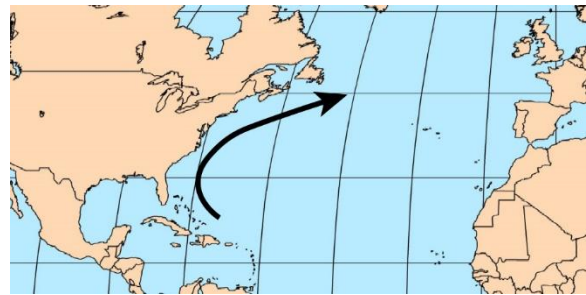


- A. 1, 2, and 4  
 B. 1, 2, 3, and 4  
 C. 1, 3, and 4  
 D. 1, 2, 4, and 5
12. Which of the following is a human genetic trait?  
 A. cooking skill  
 B. sense of humor  
 C. eye color  
 D. taste in music
13. Which of the following is a learned behavior for a dog?  
 A. wagging its tail when excited  
 B. panting on a hot summer day  
 C. chasing cats and squirrels in the park  
 D. coming to the dinner table when everyone sits down to eat

14. Carbon has an atomic number of 6. This means that it has ...  
 A. exactly 6 protons  
 B. more than 6 protons  
 C. less than 6 protons  
 D. any number of protons

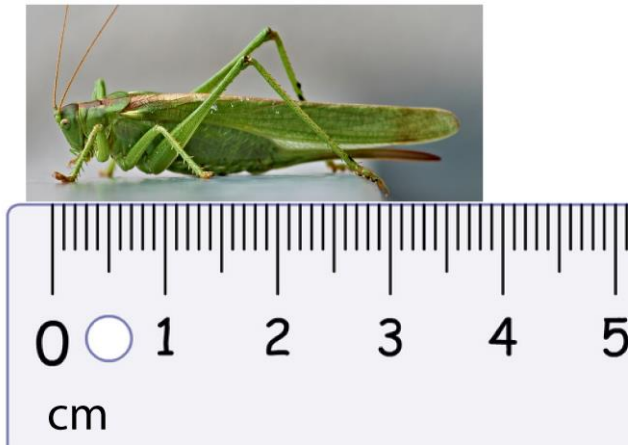
15. Which layer contains most of the air in the atmosphere?  
 A. stratosphere  
 B. troposphere  
 C. mesosphere  
 D. thermosphere

16. What name is given to the ocean current shown below?



- A. Florida Current  
 B. Labrador Current  
 C. Gulf Stream  
 D. Equatorial Counter Current
17. Brass is an alloy that is composed of which two elements?  
 A. cooper and sulfur  
 B. cooper and tin  
 C. tin and zinc  
 D. copper and zinc

18. An experiment is performed with a peeled banana and an unpeeled banana. Both bananas were purchased from the grocery store earlier today. You place both fruits on the ground about 2 feet from each other in the park. Every 10 minutes, you return to record the number of ants that are found on each banana. What hypothesis would this experiment most likely be used to test?
- Ants like to eat bananas more than apples.
  - Ants lack the muscle strength to peel bananas on their own.
  - Ants are more attracted to peeled bananas than unpeeled bananas.
  - Ants like sugary fruits more than tangy fruits.
19. A grasshopper’s length is measured using a centimeter ruler. What is the length of the grasshopper?



- 5.1 cm
- 3.2 cm
- 3.8 cm
- 3.6 cm

20. Which of the following minerals has the smallest number on the Mohs hardness scale?
- topax
  - talc
  - diamond
  - quartz
21. In the Rock Cycle, how is sedimentary rock transformed into metamorphic rock?
- by erosion
  - by cooling and hardening
  - by melting
  - by heat and pressure
22. An underwater earthquake can cause what?
- tsunami
  - hurricane
  - tornado
  - cyclone
23. The number of earthquakes by magnitude for 2021 worldwide is given in the table.

Magnitude	Number of Earthquakes
8.0 +	3
7.0 – 7.9	16
6.0 – 6.9	141
5.0 – 5.9	2,046
4.0 – 4.9	14,658

What can you conclude from this data?

- Earthquakes of larger magnitude occurred more frequently in 2021 than in 2020.
- Earthquakes of smaller magnitude were more common than larger earthquakes.
- The number of deaths from smaller earthquakes must be significantly more than larger earthquakes.
- For each increase by 1 in magnitude, approximately one-seventh of the number of earthquakes occurred.

24. Bob threw a ball at Carl, causing Carl to fall down. How did Bob cause Carl to fall?
- By throwing the ball toward Carl, Bob caused a change in gravity near Carl, enough to knock him down.
  - The wind that was displaced by the ball caused Carl to fall.
  - Bob transferred energy into the ball, which then transferred enough energy into Carl to overcome his inertia.
  - Bob threw the ball with enough spin to cause Carl to fall down.

25. Which of the following units of measurement is in the SI (International System) Units?
- meters
  - square feet
  - pints
  - Fahrenheit

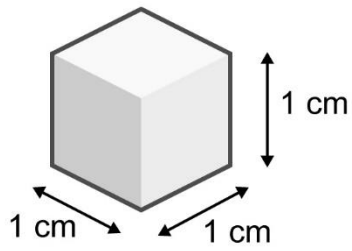
26. Which of the following is not soluble in water?
- sand
  - sugar
  - salt
  - aspirin

27. Based on the weather map below, which of the following statements is most likely true?



- Abilene and Dallas are the same temperature.
  - Austin is warmer than Midland.
  - It is snowing in Amarillo.
  - Rain is expected in College Station.
28. The anemone provides protection and shelter for the clownfish. The clownfish provides nutrients to the anemone in the form of its waste. What relationship does the anemone and clownfish share?
- mutualism
  - parasitism
  - predation
  - competition

29. The sugar cube shown below weighs 0.85 grams. What is the density of the sugar cube?



- A.  $0.85 \text{ g/cm}^3$
- B.  $85 \text{ g/cm}^3$
- C.  $0.00085 \text{ g/cm}^3$
- D.  $8.5 \text{ g/cm}^3$

30. Which of the following images shows the correct rotation of the Earth?

