

## 10th test

### True/False

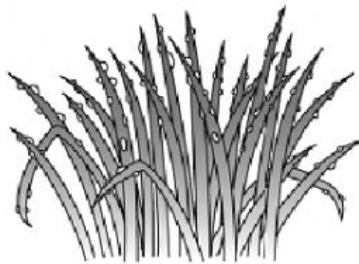
Indicate whether the statement is true or false.

- \_\_\_ 1. An ocean layer in which the temperature drops with depth faster than in other layers is called a thermocline.
- \_\_\_ 2. A wave that requires a medium such as air or water through which to travel is called a mechanical wave.
- \_\_\_ 3. Thermal expansion is the increase in volume that results from an increase in temperature.

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

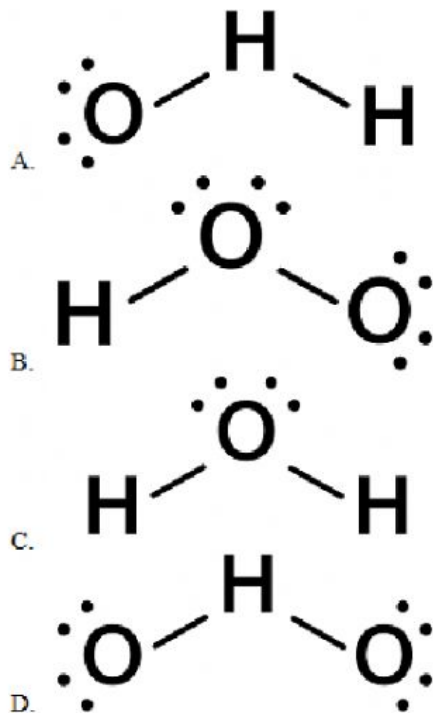
- \_\_\_ 1. On a cold morning, Pierre observed that the grass looked wet. The picture below shows what Pierre observed.



Which process occurred when the water droplets formed on the grass?

- A. deposition
  - B. sublimation
  - C. evaporation
  - D. condensation
- \_\_\_ 2. Bryan is doing a science experiment on the stomata of plants. He wants to study how tomato plants are involved in the water cycle. What is the main role of plants in the water cycle?
    - A. They take in water from the air.
    - B. They release water vapor into the air.
    - C. They provide a surface for condensation.
    - D. They store water in their stems and leaves.
  - \_\_\_ 3. If a warm wind passes over snow, the snow can be heated rapidly. When this happens, the snow can change directly into water vapor without first becoming liquid water. What is the correct term for this process?
    - A. melting
    - B. deposition
    - C. sublimation
    - D. evaporation
  - \_\_\_ 4. Water molecules are polar molecules. What is meant by the term *polar molecule*?
    - A. a molecule that has an overall positive charge on one end and an overall negative charge on the other end
    - B. a molecule that has no charge on one end and either an overall negative or positive charge on the other end
    - C. a molecule that has an overall positive charge on one end, as well as an overall positive charge on the other end
    - D. a molecule that has an overall negative charge on one end, as well as an overall negative charge on the other end

5. Hydrogen and oxygen are the two elements that make up water. Which of the following diagrams correctly shows how these elements form a water molecule?



6. Which property of water allows it to form droplets when in liquid form?

A. adhesion  
B. cohesion  
C. conductivity  
D. specific heat

7. Which is an example of water's importance that directly relates to the health of people living in developing countries?

A. Most of Earth's water is in the form of salt water.  
B. Every living organism on Earth is made up partly of water.  
C. Water that is contaminated causes diseases in people who drink it.  
D. Water has a much higher heat capacity than other substances have.

8. The table below shows the amounts of different types of surface water on Earth.

Water source	Water volume (cubic miles)
Groundwater	5,614,000
Lakes	42,320
Rivers	509
Swamp water	2,752

Based on the table, about how much water is available to provide habitat for wildlife?

A. just over 3,000 cubic miles  
B. nearly 43,000 cubic miles  
C. about 46,000 cubic miles  
D. close to 6,000,000 cubic miles

- \_\_\_\_ 9. Which pair of factors determines the density of ocean water?
- A. salinity and latitude
  - B. latitude and longitude
  - C. salinity and temperature
  - D. longitude and temperature
- \_\_\_\_ 10. Which is a principle that allows scientists to use sonar to map the ocean floor?
- A. Sound waves travel more quickly through gases than they do through liquids or solids.
  - B. Sound waves travel more quickly through solids than they do through liquids or gases.
  - C. It takes more time for sound pulses to travel through deep water than through shallow water.
  - D. Sound waves have a higher apparent frequency to an observer who is moving toward the sound's source.
- \_\_\_\_ 11. Which of the following terms is used to indicate the maximum distance that a wave moves from its rest position?
- A. amplitude
  - B. wavelength
  - C. wave speed
  - D. wave period
- \_\_\_\_ 12. In what way are waves such as those that occur on the ocean surface different from a radio wave?
- A. They transfer energy from one location to another.
  - B. They must have a medium through which to travel.
  - C. Their wavelength is determined by their wave period.
  - D. Their wave amplitude can change from one value to another.
- \_\_\_\_ 13. If a wave has a wave period of 30 s and a wave speed of 2 m/s, what is its wavelength?
- A. 0.03 m
  - B. 15 m
  - C. 28 m
  - D. 60 m
- \_\_\_\_ 14. Throughout the day, Matthew and Mei measure the temperature of lake water as it is warmed by the sun. The following table shows their data at four different times.

Time	Temperature (°C)
9 a.m.	12
11 a.m.	14
3 p.m.	16
5 p.m.	13

At what time was the thermal energy of the lake water the greatest?

- A. 9 a.m.
- B. 11 a.m.
- C. 3 p.m.
- D. 5 p.m.