Changes of State

Choose the letter of the best answer.

1. Dry ice is solid carbon dioxide. At room temperature, it changes directly into a gas. A model of which of the following would describe this change?

   A. Evaporation results in a reduction of the mass of carbon dioxide.

   B. Freezing occurs due to a decrease in the kinetic energy of the particles.

   C. Sublimation occurs due to an increase in the kinetic energy of the particles.

   D. Deposition causes the particles of the carbon dioxide gas to lock into place.

2. A student measured the mass of ice in a glass container with a tight lid. He allowed the ice to melt, and then found the mass of the container, its lid, and its contents again. What conclusion could he draw based on the masses he measured?

   A. No matter how tight the lid is, some mass is lost when a solid melts.

   B. The liquid formed from a melted solid has less mass than the solid has.

   C. The liquid formed from a melted solid has the same mass as the solid has.

   D. The liquid formed from a melted solid has a greater mass than the solid has.

3. Nora notices water droplets on the grass in the morning. It did not rain during the night. Which statement is true about this change of state?

   A. Mass was added to the water particles, resulting in deposition.

   B. Energy was added to the water particles, resulting in evaporation.

   C. Mass was removed from the water particles, resulting in sublimation.

   D. Energy was removed from the water particles, resulting in condensation.

4. Which changes of state result in a decrease in the kinetic energy of the particles?

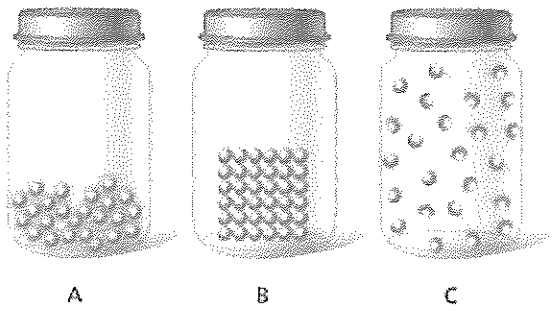
   A. sublimation, melting, boiling

   B. melting, freezing, evaporation

   C. sublimation, deposition, melting

   D. deposition, freezing, condensation

5. The following illustration shows three different states of a substance.



   Which of the following happens when the substance in jar B changes state to the substance in jar A?

   A. The particles vibrate faster.

   B. The mass of the substance increases.

   C. The identity of the substance changes.

   D. The particles expand to fill their container.