KSS #5 - Science Practice

Name: _____ **Date:** _____

1. Many laboratory preparations of solutions call for stirring the solvent while adding the solute. Which of the following is always an effect of this procedure?

   A. It decreases the reactivity of the solute.

   B. It decreases the solubility of the solute.

   C. It brings the solute and solvent rapidly into contact.

   D. It produces a double displacement reaction.

2. The solubility of a substance can be described in a variety of ways. Some references may use descriptive terms for solubility, such as those in the table illustrated below.

Descriptive terms	Parts of solvent needed for 1 part solute
Very soluble	<1
Freely soluble	1–10
Soluble	10–30
Sparingly soluble	30–100
Slightly soluble	100–1,000
Very slightly soluble	1,000–10,000
Practically insoluble or insoluble	>10,000

   Using the table above as a reference, what descriptive term would be used for a medication that required 4,000 mg of water to dissolve 200 mg of the drug?

   A. soluble B. slightly soluble

   C. sparingly soluble D. very slightly soluble

3. A student pours mineral salts into a bottle of cold water. Which of the following *best* explains why shaking the bottle will affect the dissolving rate of the salt?

   A. Shaking exposes the salts to the solvent more quickly.

   B. Shaking helps more water to evaporate.

   C. Shaking causes more ions to precipitate out of solution.

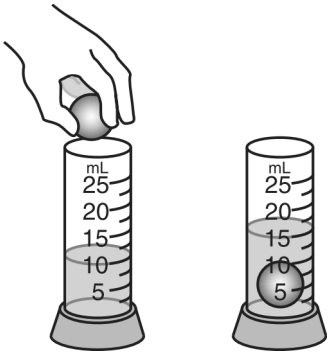
   D. Shaking equalizes the water temperature.

4. A chemist wishes to react 500 g of marble ($CaCO_3$) with an excess of hydrochloric acid. In which of the following forms will the marble react most rapidly?

   A. small chips B. fine powder

   C. a solid cube D. a solid sphere

5. A student added a small ball to a graduated cylinder containing 10 milliliters of water.



   What is the volume of the ball?

   A. 5 mL B. 10 mL C. 15 mL D. 20 mL

6. Which of the following *best* describes how most substances change from a solid to a liquid state?

   A. Molecules move closer together.

   B. Molecules move farther apart.

   C. Molecules lose energy.

   D. Molecules slow down.

7. What happens to the molecules in a pot of water as it is heated?

   A. They move faster.

   B. They move slower.

   C. They lose thermal energy.

   D. They gain potential energy.

8. Which state of matter is water in before it evaporates?

   A. solid B. liquid C. gas D. plasma

9. Which sequence represents matter that is losing energy?

A. solid → gas → liquid B. solid → liquid → gas

C. gas → solid → liquid D. gas → liquid → solid

10. When water evaporates to form water vapor, what type of process is taking place?

A. heating of water B. dissolving of water

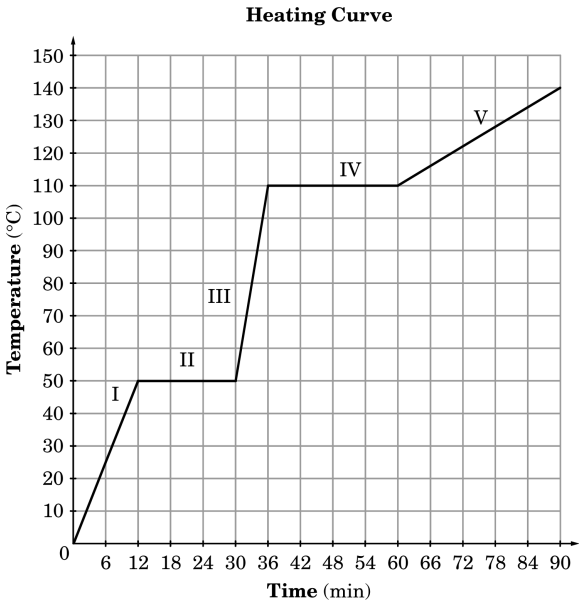
C. a chemical change D. a physical change

11. Which substance listed in the table is a liquid at 27°C?

	Melting Point	Boiling Point
I	28°C	140°C
II	10°C	—25°C
III	20°C	140°C
IV	90°C	—14°C

A. I B. II C. III D. IV

12. This graph represents a heating curve of a substance.



Which region on the graph represents the solid phase?

A. I B. II C. III D. IV

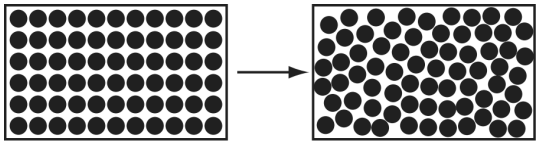
13. Which is the *best* example of a physical change?

A. ice melting B. candle burning C. bread baking

14. A jar and three ice cubes weigh 30 g. What do the jar and the water weigh after the ice cubes melt?

A. 10 g B. 30 g C. 60 g D. 90 g

15. Which diagram represents the change of ice to water?

A.


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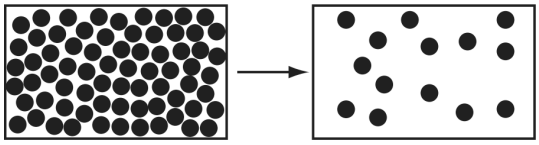

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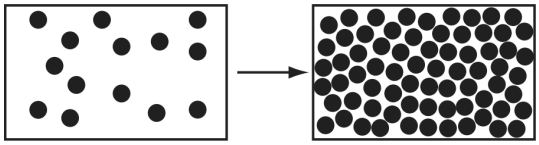

D.