

Name: _____ Date: _____

Use the tables below to answer questions 1 and 2.

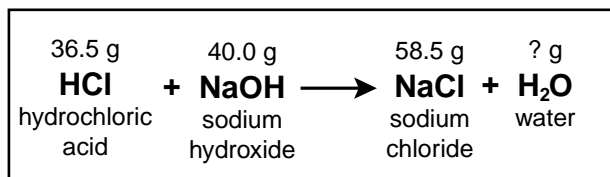
Baking Soda Analysis		
Element	Analysis by Mass	% by Mass
Oxygen	114.20 g	57.1%
Sodium	54.80 g	27.4%
Hydrogen	2.40 g	1.2%
Carbon	?	14.3%
Total	200.00 g	100%

Sodium Hydrogen Carbonate Analysis		
Element	Analysis by Mass	% by Mass
Oxygen	28.55 g	57.1%
Sodium	13.70 g	27.4%
Hydrogen	0.60 g	1.2%
Carbon	7.15 g	14.3%
Total	50.00 g	100%

- 1 The tables show the chemical analyses of two compounds: baking soda and sodium hydrogen carbonate. Because they have the same percent by mass, they must be the same compound according to the —
- A law of definite proportions
 - B law of multiple proportions
 - C law of conservation of energy
 - D law of conservation of mass
- 2 If baking soda and sodium hydrogen carbonate are the same compound, then the mass of carbon in 200.00 g of baking soda should be —
- A 7.15 g
 - B 14.30 g
 - C 28.6 g
 - D 57.20 g
- 3 Which of these phase changes does NOT involve the absorption of heat energy?
- A Boiling
 - B Condensation
 - C Melting
 - D Vaporization
- 4 In the periodic table, a series of elements that is arranged in a horizontal row is called a —
- A cluster
 - B family
 - C period
 - D group
- 5 Distillation is a separation technique that involves —
- A using a porous barrier to separate a solid from a liquid
 - B separating dissolved substances based on their tendency to be drawn across a surface
 - C the formation of pure, solid particles of a substance from a solution containing the dissolved substance
 - D separating two or more liquids based on differences in their boiling points

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Use the diagram below to answer questions 6 and 7.



- 6 The diagram shows a chemical equation representing a chemical reaction. The name and mass of each substance involved in the chemical reaction are also shown. Which of these are the reactants?

- A HCl and NaOH
- B NaCl and H₂O
- C HCl and H₂O
- D NaOH and NaCl

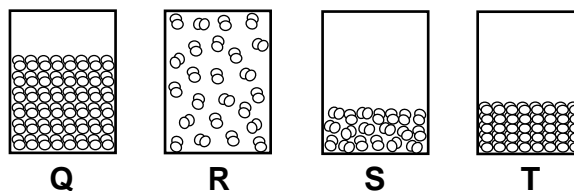
- 7 According to the law of conservation of mass, mass is neither created nor destroyed during a chemical reaction. On the basis of this law, what mass of water was produced in this reaction?

- A 16.0 g
- B 18.0 g
- C 20.0 g
- D 22.0 g

- 8 Characteristics of a substance can be classified as physical properties or chemical properties. Which of the following is a chemical property?

- A Boils at 56°C
- B Tastes sour
- C Has a density of 2.9 g/cm³
- D Reacts with acid to produce hydrogen gas

Use the diagrams below to answer question 9.



- 9 Each diagram shows the particles of a substance in a closed container. Which of these shows the substance that is most easily compressed?

- A Q
- B R
- C S
- D T

