**CH 7 QUIZ**

**Matching**

*Match the reactants with the correct products. Make sure the elements are balanced.*

|  |  |
| --- | --- |
| a. | 4Al + 3O2 |
| b. | 2C2H6 + 7O2 |
| c. | CO2 + 4H2 |

\_\_\_\_ 1. CH4 + 2H2O

\_\_\_\_ 2. 2Al2O3

\_\_\_\_ 3. 4CO2 + 6H2O

*Match each term with the correct definitions below.*

|  |  |  |  |
| --- | --- | --- | --- |
| a. | element | c. | substance |
| b. | matter | d. | compound |

\_\_\_\_ 4. has mass, takes up space

\_\_\_\_ 5. all atoms the same

\_\_\_\_ 6. composition definite

*Match the type of property with the example.*

|  |  |  |  |
| --- | --- | --- | --- |
| a. | physical property | b. | chemical property |

\_\_\_\_ 7. a box measures 4 cm by 3 cm by 8 cm

\_\_\_\_ 8. the liquid burned easily

\_\_\_\_ 9. the muffins baked for 20 minutes until done

\_\_\_\_ 10. the dessert tasted rich and chocolaty

**Short Answer**

 1. What can differ between the atoms of different elements?

 2. Explain how to choose a method to separate a mixture of two substances.

 3. Josie has a bag of ice that weighs 5 pounds. She left it in a sealed container and it melted. How much does the resulting water weigh? How do you know this?

 4. How can you tell if a chemical equation is balanced?

 5. Describe how concentration can affect the speed of a chemical reaction.

 6. How can you tell that fireworks exploded during a typical Fourth of July display don't all contain exactly the same ingredients?

 7. Explain why the appearance of a gas is not always a sign of a chemical change.

 8. Suppose a customer brings a gold bracelet to a jeweler and asks for it to be changed into a gold ring. What property will distinguish the ring from the bracelet? Will the changes required be physical or chemical? Explain your answer.

 9. When a shiny penny turns dull, is the change physical or chemical?

 10. Rock candy is made by crystallizing sugar out of a sugar-water solution. If the initial solution weighs 485 grams and the leftover water weighs 94 grams, how much rock candy is made?

**Essay**

 1. Explain the differences between physical changes and chemical changes. Include definitions of physical and chemical properties and changes.

**CH 7 QUIZ**

**Answer Section**

**MATCHING**

 1. ANS: C PTS: 1 DIF: Bloom's Level 3 | DOK 2-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-12

 2. ANS: A PTS: 1 DIF: Bloom's Level 3 | DOK 2-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-12

 3. ANS: B PTS: 1 DIF: Bloom's Level 3 | DOK 2-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-12

 4. ANS: B PTS: 1 DIF: Bloom's Level 2 | DOK 1-LOW

REF: To review this topic refer to Foundations of Chemistry: Lesson 1

OBJ: 7-1

 5. ANS: A PTS: 1 DIF: Bloom's Level 2 | DOK 1-LOW

REF: To review this topic refer to Foundations of Chemistry: Lesson 1

OBJ: 7-1

 6. ANS: C PTS: 1 DIF: Bloom's Level 2 | DOK 1-LOW

REF: To review this topic refer to Foundations of Chemistry: Lesson 1

OBJ: 7-1

 7. ANS: A PTS: 1 DIF: Bloom's Level 2 | DOK 1-LOW

REF: To review this topic refer to Foundations of Chemistry: Lesson 2

OBJ: 7-5

 8. ANS: B PTS: 1 DIF: Bloom's Level 2 | DOK 1-LOW

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-10

 9. ANS: B PTS: 1 DIF: Bloom's Level 2 | DOK 1-LOW

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-10

 10. ANS: A PTS: 1 DIF: Bloom's Level 2 | DOK 1-LOW

REF: To review this topic refer to Foundations of Chemistry: Lesson 2

OBJ: 7-5

**SHORT ANSWER**

 1. ANS:

The atoms of different elements may have different numbers of protons, neutrons, or electrons.

PTS: 1 DIF: Bloom's Level 3 | DOK 2-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 1

OBJ: 7-2

 2. ANS:

Sample answer: You would need to compare the physical properties of the two substances. You would compare the state of matter, size of particles, mass, volume, density, solubility, melting or boiling points, conductivity, and magnetism. Whichever physical property differs between the two substances can be used to separate them.

PTS: 1 DIF: Bloom's Level 3 | DOK 3-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 2

OBJ: 7-6

 3. ANS:

The final liquid would weigh 5 pounds. Conservation of Mass tells us that the total mass before a physical change equals the total mass after the change.

PTS: 1 DIF: Bloom's Level 3 | DOK 3-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 3

OBJ: 7-9

 4. ANS:

The number of atoms of each element before a reaction must equal the number of atoms of each element after the reaction.

PTS: 1 DIF: Bloom's Level 2 | DOK 2-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-12

 5. ANS:

Concentration is the amount of substance in a certain volume. A reaction occurs faster if the concentration of at least one reactant increases. When concentration increases, there are more particles available to bump into each other and react.

PTS: 1 DIF: Bloom's Level 3 | DOK 2-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-13

 6. ANS:

The starting materials must differ because the materials produced during the explosions have different colors.

PTS: 1 DIF: Bloom's Level 4 | DOK 3-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-11

 7. ANS:

A gas can be the result of a change of state, which is a physical change. The boiling of water produces water vapor; opening a carbonated beverage releases dissolved carbon dioxide.

PTS: 1 DIF: Bloom's Level 4 | DOK 3-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-11

 8. ANS:

shape; physical; The solid bracelet must be heated until it melts, then liquid gold must be poured into a ring-shaped mold and allowed to harden. The new ring will still have the same composition as the bracelet.

PTS: 1 DIF: Bloom's Level 5 | DOK 3-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 3

OBJ: 7-7

 9. ANS:

chemical; the metal in the penny has combined with oxygen in the air

PTS: 1 DIF: Bloom's Level 3 | DOK 2-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-10

 10. ANS:

Total mass before a physical change is the same as the total mass after the change.

485 g – 94 g = 391 g

PTS: 1 DIF: Bloom's Level 3 | DOK 3-MOD

REF: To review this topic refer to Foundations of Chemistry: Lesson 3

OBJ: 7-9

**ESSAY**

 1. ANS:

Physical changes occur without changing the physical properties of the substance.

Physical properties can be observed or measured without changing the composition of matter. These include states of matter, mass, volume, melting point, boiling point, density, conductivity, solubility, and magnetism. A chemical change is a change in matter in which the substances that make up the matter change into other substances with new physical and chemical properties. Chemical properties are characteristics of matter that can be observed as it changes to a different type of matter.

|  |  |
| --- | --- |
| **Score** | **Description** |
| **4** | Student’s response includes the following:definition of physical propertydefinition of physical changedefinition of chemical propertydefinition of chemical change |
| **3** | Student’s response includes three of the following:definition of physical propertydefinition of physical changedefinition of chemical propertydefinition of chemical change |
| **2** | Student’s response includes two of the following:definition of physical propertydefinition of physical changedefinition of chemical propertydefinition of chemical change |
| **1** | Student’s response includes one of the following:definition of physical propertydefinition of physical changedefinition of chemical propertydefinition of chemical change |
| **0** | Student’s response is totally incorrect or irrelevant. |
| **Blank** | **No student response.** |

PTS: 1 DIF: Bloom's Level 5 | DOK 4-HIGH

REF: To review this topic refer to Foundations of Chemistry: Lesson 2 | To review this topic refer to Foundations of Chemistry: Lesson 3 | To review this topic refer to Foundations of Chemistry: Lesson 4

OBJ: 7-5 | 7-6 | 7-7 | 7-8 | 7-9 | 7-10 | 7-11 | 7-12 | 7-13