

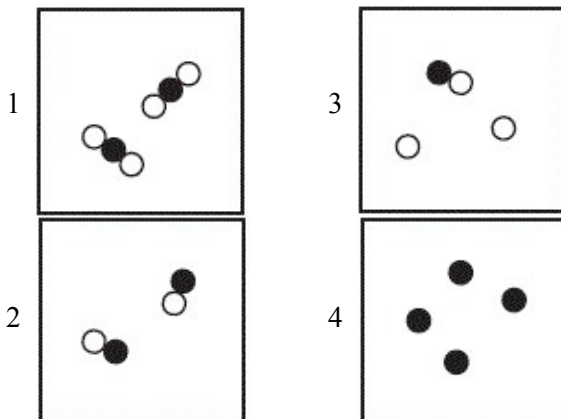
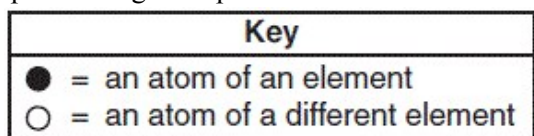
Name: _____

Class/Period: _____

Assignment: Unit 1 Assignment- Classifying, Describing, and Separating Matter

Teacher: Martin

1 Which particle diagram represents a mixture?



2 What is represented by the chemical formula $\text{PbCl}_2(\text{s})$?

- 1 a substance
- 2 a solution
- 3 a homogeneous mixture
- 4 a heterogeneous mixture

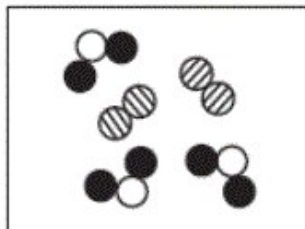
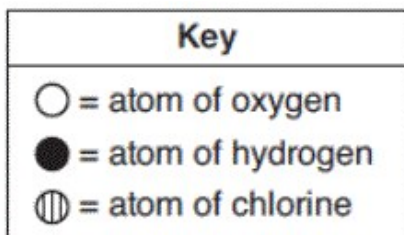
3 Which statement describes a chemical property of iron?

- 1 Iron oxidizes.
- 2 Iron is a solid at STP.
- 3 Iron melts.
- 4 Iron is attracted to a magnet.

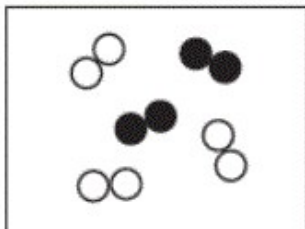
4 Which substance can **not** be broken down by a chemical change?

- 1 ammonia
- 2 ethanol
- 3 tungsten
- 4 water

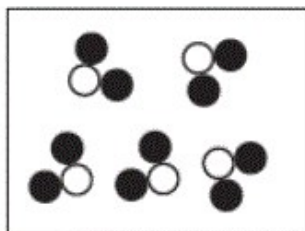
5 Which two particle diagrams each represent a sample of one substance?



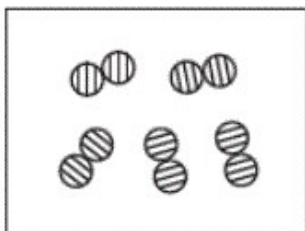
I



III



II



IV

- 1 I and II
- 2 I and III
- 3 II and III
- 4 II and IV

6 Which sample of matter is a mixture?

- 1 air
- 2 ammonia
- 3 manganese
- 4 water

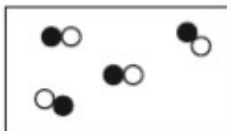
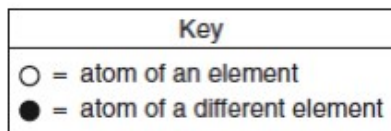
7 Which substance can be decomposed by chemical means?

- 1 cobalt
- 2 krypton
- 3 methane
- 4 zirconium

8 A compound is a substance composed of two or more elements that are

- 1 physically mixed in a fixed proportion
- 2 physically mixed in a variable proportion
- 3 chemically combined in a fixed proportion
- 4 chemically combined in a variable proportion

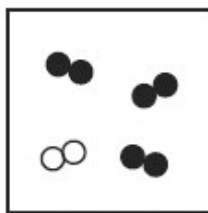
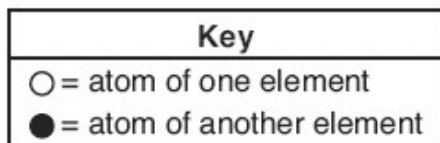
9 Given the particle diagram:



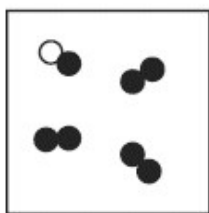
Which type of matter is represented by the particle diagram?

- 1 an element
 - 2 a compound
 - 3 a homogeneous mixture
 - 4 a heterogeneous mixture
- 10 A mixture consists of sand and an aqueous salt solution. Which procedure can be used to separate the sand, salt, and water from each other?
- 1 Evaporate the water, then filter out the salt.
 - 2 Evaporate the water, then filter out the sand.
 - 3 Filter out the salt, then evaporate the water.
 - 4 Filter out the sand, then evaporate the water.
- 11 Powdered iron is magnetic, but powdered sulfur is *not*. What occurs when they form a mixture in a beaker at room temperature?
- 1 The iron retains its magnetic properties.
 - 2 The iron loses its metallic properties.
 - 3 The sulfur gains magnetic properties.
 - 4 The sulfur gains metallic properties.
- 12 A substance is classified as either an element or a
- 1 compound
 - 2 solution
 - 3 heterogeneous mixture
 - 4 homogeneous mixture
- 13 Matter is classified as a:
- 1 substance, only
 - 2 substance, or as a mixture of substances
 - 3 homogenous mixture, only
 - 4 homogenous mixture, or as a heterogeneous mixture

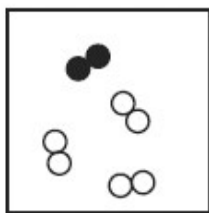
14 Which two particle diagrams represent mixtures of diatomic elements?



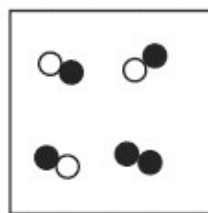
A



B



C



D

- 1 A and B
- 2 A and C
- 3 B and C
- 4 B and D

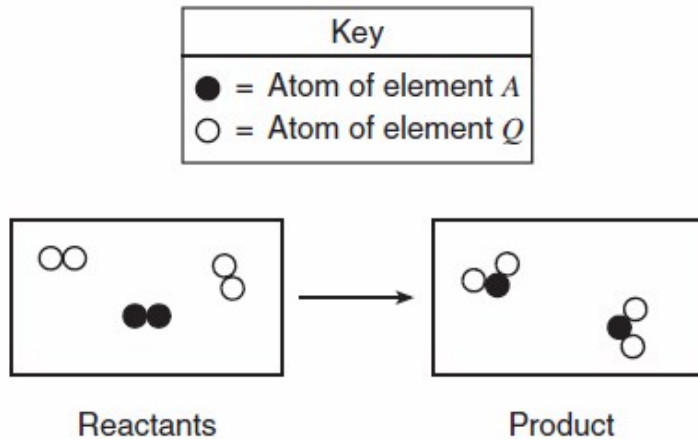
15 Which list of formulas represents compounds, only?

- 1 CO_2 , H_2O , NH_3
- 2 H_2 , N_2 , O_2
- 3 H_2 , Ne , NaCl
- 4 MgO , NaCl , O_2

Figure 1

Base your answer to the question on the information below.

The particle diagrams below represent the reaction between two nonmetals, A_2 and Q_2



Refer to Figure 1 and answer the following Question:

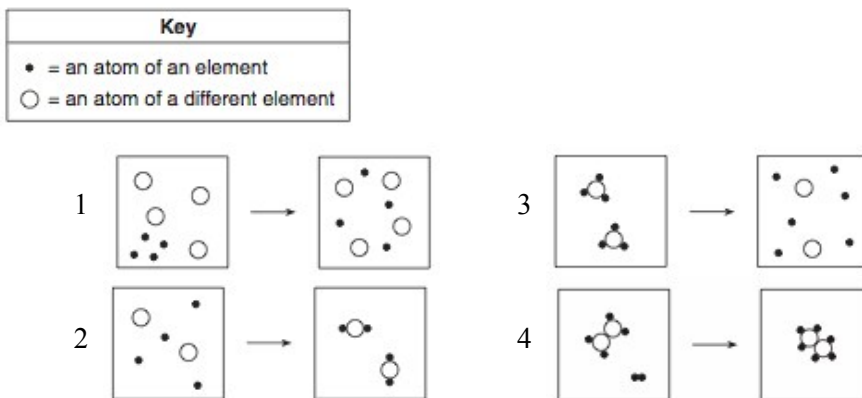
Using the symbols A and Q , the chemical formula of the product could be written as

- 1 AQ
- 2 A_2Q
- 3 AQ_2
- 4 A_2Q_2

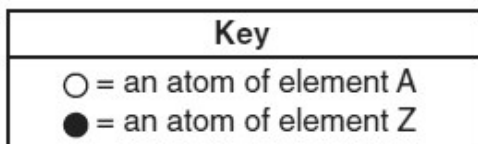
17 Which of these terms refers to matter that could be heterogeneous?

- 1 element
- 2 mixture
- 3 compound
- 4 solution

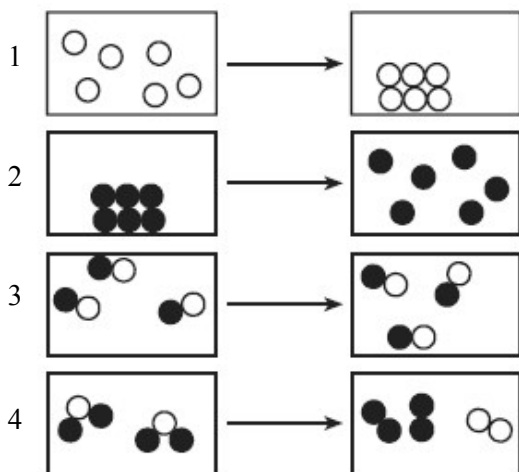
18 Which diagram represents a physical change, only?



19 Given the key:



Which particle model diagram represents a chemical change?



20 Which process is a chemical change?

- 1 evaporating an alcohol
- 2 subliming of iodine
- 3 melting an ice cube
- 4 rusting of iron

21 Which statement describes a chemical change?

- 1 Alcohol evaporates.
- 2 Water vapor forms snowflakes.
- 3 Table salt (NaCl) is crushed into powder.
- 4 Glucose ($C_6H_{12}O_6$) and oxygen produce CO_2 and H_2O .

22 Which statement describes $H_2O(l)$ and $H_2O_2(l)$?

- 1 Both are compounds that have the same properties.
- 2 Both are compounds that have different properties.
- 3 Both are mixtures that have the same properties.
- 4 Both are mixtures that have different properties.

23 Which statement describes a chemical property of sodium?

- 1 Sodium has a melting point of 371 K.
- 2 Sodium has a molar mass of 23 grams.
- 3 Sodium can conduct electricity in the liquid phase.
- 4 Sodium can combine with chlorine to produce a salt.

- 24 Two substances in a mixture differ in density and particle size. These properties can be used to
- 1 separate the substances
 - 2 chemically combine the substances
 - 3 determine the freezing point of the mixture
 - 4 predict the electrical conductivity of the mixture
- 25 Which property could be used to identify a compound in the laboratory?
- 1 mass
 - 2 melting point
 - 3 temperature
 - 4 volume
- 26 A large sample of solid calcium sulfate is crushed into smaller pieces for testing. Which two physical properties are the same for both the large sample and one of the smaller pieces?
- 1 mass and density
 - 2 mass and volume
 - 3 solubility and density
 - 4 solubility and volume
- 27 Which statement describes a chemical property that can be used to distinguish between compound *A* and compound *B*?
- 1 *A* is a blue solid, and *B* is a white solid.
 - 2 *A* has a high melting point, and *B* has a low melting point.
 - 3 *A* dissolves in water, and *B* does not dissolve in water.
 - 4 *A* does not burn in air, and *B* does burn in air.
- 28 An example of a physical property of an element is the element's ability to
- 1 react with an acid
 - 2 react with oxygen
 - 3 form a compound with chlorine
 - 4 form an aqueous solution
- 29 Which process is commonly used to separate a mixture of ethanol and water?
- 1 distillation
 - 2 ionization
 - 3 filtration
 - 4 titration
- 30 A compound is broken down by chemical means during:
- 1 chromatography
 - 2 distillation
 - 3 electrolysis
 - 4 filtration

- 31** A beaker contains both alcohol and water. These liquids can be separated by distillation because the liquids have different:
- 1 boiling points
 - 2 densities
 - 3 particle sizes
 - 4 solubilities
- 32** Two grams of potassium chloride are completely dissolved in a sample of water in a beaker. This solution is classified as
- 1 an element
 - 2 a compound
 - 3 a homogeneous mixture
 - 4 a heterogeneous mixture
- 33** A mixture of crystals of salt and sugar is added to water and stirred until all solids have dissolved. Which statement best describes the resulting mixture?
- 1 The mixture is homogeneous and can be separated by filtration.
 - 2 The mixture is homogeneous and cannot be separated by filtration.
 - 3 The mixture is heterogeneous and can be separated by filtration.
 - 4 The mixture is heterogeneous and cannot be separated by filtration.
- 34** One similarity between all mixtures and compounds is that both
- 1 are heterogeneous
 - 2 are homogeneous
 - 3 combine in a definite ratio
 - 4 consist of two or more substances
- 35** An example of a heterogeneous mixture is
- 1 soil
 - 2 sugar
 - 3 carbon monoxide
 - 4 carbon dioxide