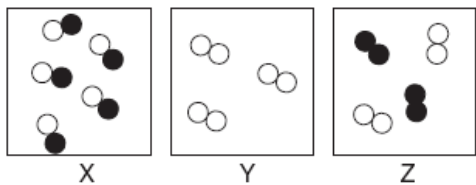


Name _____

Classification of Matter

- ____ 1. Which 5.0 milliliter sample of NH_3 will take the shape of and completely fill a closed 100.0 milliliter container?
1. $\text{NH}_3(\text{s})$ 2. $\text{NH}_3(\text{l})$ 3. $\text{NH}_3(\text{g})$ 4. $\text{NH}_3(\text{aq})$
- ____ 2. Which statement correctly describes a sample of gas confined in a sealed container?
1. It always has a definite volume, and it takes the shape of the container
2. It takes the shape and volume of any container in which it is confined
3. It has a crystalline structure
4. It consists of particles arranged in a regular geometric pattern
- ____ 3. At STP, which 2.0 gram sample of matter will retain its own shape in any closed container?
1. $\text{Br}_2(\text{l})$ 2. $\text{Fe}(\text{NO}_3)_2(\text{s})$ 3. $\text{KCl}(\text{aq})$ 4. $\text{Xe}(\text{g})$
- ____ 4. A sample of unknown composition was tested in a laboratory. The sample could *not* be decomposed by physical or chemical means. On the basis of these results, the laboratory reported that the unknown sample was most likely:
1. a compound 2. an element 3. a mixture 4. a solution
- ____ 5. Which species represents a chemical compound?
1. N_2 2. NH_4^+ 3. Na 4. NaHCO_3
- ____ 6. One similarity between all mixtures and compounds is that both:
1. are heterogeneous 3. combine in a definite ratio
2. are homogeneous 4. consist of two or more substances
- ____ 7. Which substance can be decomposed by chemical change?
1. Co 2. CO 3. Cr 4. Cu
- ____ 8. Which of these terms refers to matter that could be heterogeneous?
1. element 2. mixture 3. compound 4. solution
- ____ 9. Which type of change must occur to form a compound?
1. chemical 2. physical 3. nuclear 4. phase
- ____ 10. Which substance can *not* be decomposed by a chemical change?
1. Ne 2. N_2O 3. HF 4. H_2O
- ____ 11. Which of these contains only one substance?
1. distilled water 2. sugar water 3. salt water 4. rain water
- ____ 12. A sample is prepared by completely dissolving 10.0 grams of NaCl in 1.0 liter of H_2O . Which classification best describes this sample?
1. homogeneous compound 3. heterogeneous compound
2. homogeneous mixture 4. heterogeneous mixture

13. Given the diagrams X, Y, and Z below:

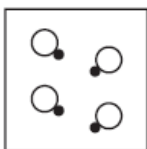


Key	
Atom of element A =	○
Atom of element B =	●

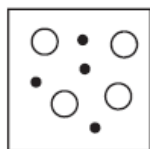
Which diagram or diagrams represent a mixture of elements A and B?

1. X, only
2. Z, only
3. X and Y
4. X and Z

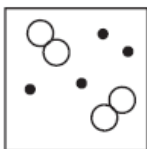
15. Which particle diagram represents one pure substance, only?



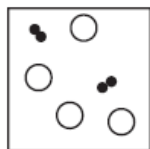
(1)



(3)

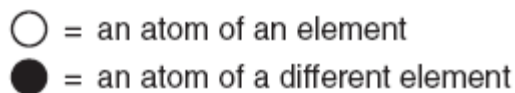


(2)

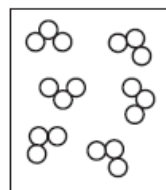


(4)

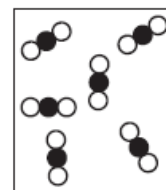
14. Given the simple representations for atoms of two elements:



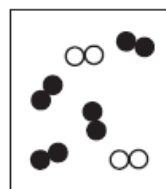
Which particle diagram represents molecules of only one compound in the gaseous phase?



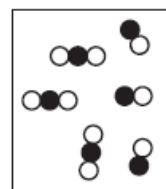
(1)



(3)



(2)

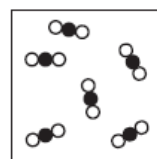


(4)

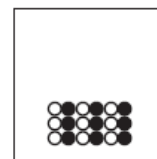
16. Given the key:

Key	
○ =	Atom of oxygen
● =	Atom of carbon

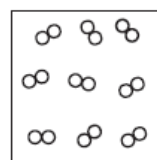
Which particle diagram represents a sample containing the compound $\text{CO}_{(g)}$?



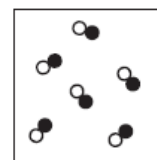
(1)



(3)



(2)



(4)