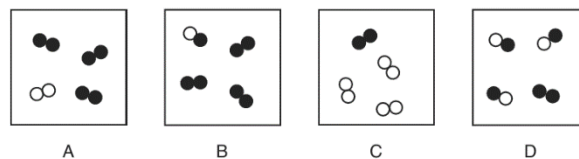


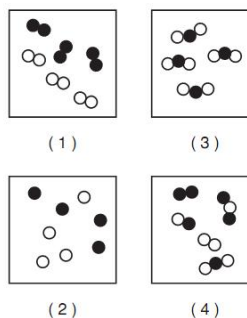
Unit 2A Quest Review

- Which substance represents a compound?
A. C (s) C. CO (g)
B. Co (s) D. O₂ (g)
- When potassium chloride, KCl (s) is dissolved in water, the resulting solution is classified as a
A. heterogeneous compound
B. homogeneous compound
C. heterogeneous mixture
D. homogeneous mixture

- Circle the two particle diagrams that represent mixtures of diatomic elements

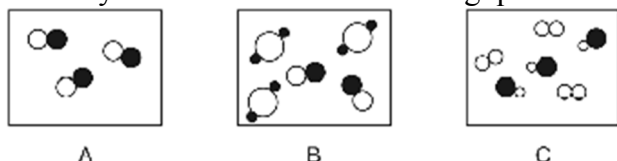


- Which particle model diagram represents only one compound composed of elements X and Z?



- Two substances, A and Z, are to be identified. Substance A cannot be broken down by a chemical change. Substance Z can be broken down by a chemical change. What can be concluded about these substances?
A. Both substances are elements.
B. Both substances are compounds.
C. Substance A is an element and substance Z is a compound.
D. Substance A is a compound and substance Z is an element.

- Base your answers to the following questions on the particle diagrams below:



- Explain, in terms of composition, why sample A represents a pure substance
- Explain why sample C would represent a mixture of fluorine (F₂) and hydrogen chloride (HCl)
- Contrast sample A and sample B, in terms of compounds and mixtures. Include both sample A and sample B in your answer
- What mass contains 6.02×10^{23} atoms?
A. 7 g of nitrogen B. 40 g of calcium C. 10 g of neon D. 14 g of silicon

11. How many moles are present in 34 grams of $\text{Cu}(\text{OH})_2$?

12. How much does 4.2 moles of $\text{Ca}(\text{NO}_3)_2$ weigh?

13. How many moles are present in 2.45×10^{23} molecules of CH_4 ?

14. How many grams are there in 3.4×10^{24} molecules of NH_3 ?

15. The molecular formula of glucose is $\text{C}_6\text{H}_{12}\text{O}_6$. What is the empirical formula of glucose?

16. What is the percent composition by mass of oxygen in H_2SO_4 (molar mass = 98 g/mol)?

17. A compound has the empirical formula CH_2O and a gram-formula mass of 60 grams per mole. What is the molecular formula of this compound?

18. A certain blue solid contains 36.84% N and 63.16% O. What is the empirical formula of this compound?