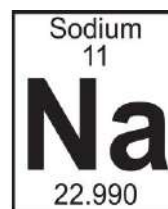
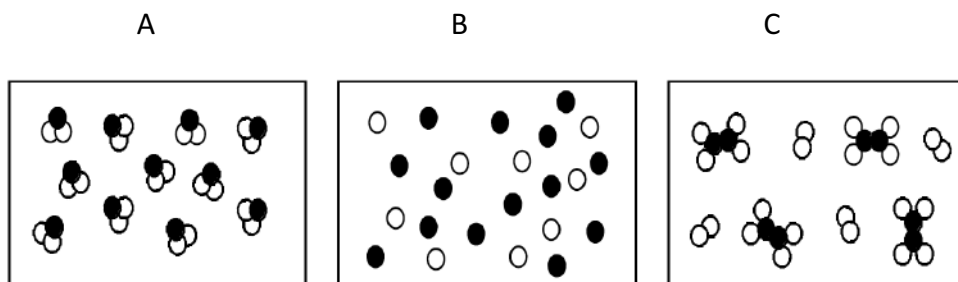


Matter Benchmark Study Guide

1. What are groups? What do elements in the same group have in common? Give an example.
2. What are periods? What do elements in the same period have in common? Give an example.
3. Explain at least 2 differences between a chemical and a physical change?
4. Explain the difference between a chemical and a physical change?
5. List at least 3 physical properties of baking soda.
6. List at least 1 chemical properties of baking soda.
7. List at least 5 clues that chemical change has occurred.
8. List at least 5 clues that a physical change has occurred.
9. Answer the following questions for Sodium.
 - a. Chemical Symbol _____
 - b. Atomic Number _____
 - c. Atomic Mass _____
 - d. Number of protons _____
 - e. Number of electrons _____
 - f. Number of neutrons _____
10. Draw the Bohr Model for Sodium.
11. Draw the Lewis Dot Structure for Sodium.
12. Which element would behave most similarly to sulfur (S)? Si, Se, Ar Explain.
13. Explain the Law of Conservation of Matter.



14. In relation to the Law of Conservation of Matter, what is the relationship between the reactants and products in a chemical reaction?
15. What is density?
16. Is density a physical or chemical change? Why?
17. Explain how you could use physical or chemical properties to identify a substance.
18. Explain the difference between a pure substance and a mixture.
19. Explain the difference between a homogeneous mixture and a heterogeneous mixture.
20. Give 2 examples of a pure substance. Explain why your examples are pure substances.
21. Give 2 examples of a homogeneous mixture. Explain why your examples are homogeneous mixtures.
22. Give 2 examples of a heterogeneous mixture. Explain why your examples are homogeneous mixtures.
23. What is the difference between a molecule and a compound?
24. Use the diagram below to answer the questions below.



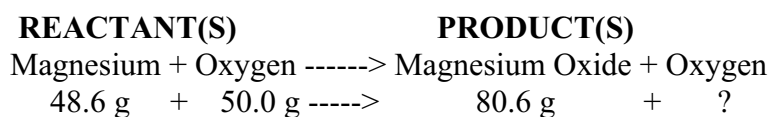
- a. Which box represents a pure substance? _____

b. Which box represents a mixture of molecules and compounds? _____

25. Explain what an atom is and give 2 examples.

26. What is sublimation? Give an example of a substance that sublimates.

27. Predict the mass of oxygen that will be left over after the reaction of 48.6 grams of magnesium combines with 50.0 grams of oxygen.



28.

State of Matter	Shape and Volume	Particle Movement	Energy	Sketch of Particle Arrangement
Solid				
Liquid				
Gas				
Plasma				

29. Write the chemical formula for each of the following.

a. Water

b. Oxygen + Oxygen

c. Carbon Dioxide

d. Hydrogen Peroxide

30. $4\text{Al}_2(\text{CO}_3)_3$

a. How many different atoms?

b. How many total atoms?