Atoms, Elements & the Periodic Table (6.P.2.1)

Name: _____ **Date:** _____

1. Generally, how do atomic masses vary throughout the periodic table of the elements?

   A. They increase from left to right and top to bottom.

   B. They increase from left to right and bottom to top.

   C. They increase from right to left and top to bottom.

   D. They increase from right to left and bottom to top.

2. Which of the following is the *most* important factor in determining an element's place in the periodic table?

   A. Number of protons

   B. Number of neutrons

   C. Atomic Charge

   D. Atomic Density

3. The chemical properties of an element are determined by its

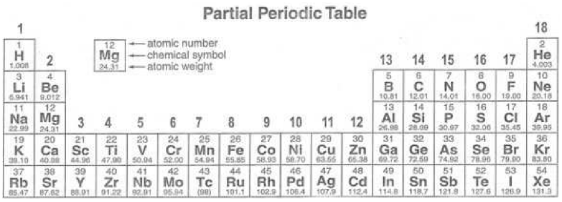
   A. atomic mass.

   B. proton number.

   C. electron arrangement.

   D. atomic size.

4. The Periodic Table of the Elements classifies all of the known elements into categories based on their physical and chemical properties. Repeating patterns within the table are useful in predicting how elements combine to form every kind of matter.



   In order to be identified as the element carbon (C), an atom must have _____.

   A. 6 protons B. 6 neutrons

   C. 12 electrons D. 12 electrons

5. Group I (the alkali metals) includes lithium (Li), sodium (Na), and potassium (K). These elements have similar chemical properties because they have the same _____.

   A. numbers of protons and neutrons

   B. numbers of electrons in the outer energy level

   C. numbers of protons in the nucleus

   D. numbers of neutrons in the nucleus

6. The pictures below show the position of different elements on the periodic table. Which picture has an X in the locations of the three elements that would be most similar in the way they react?

A.

X		
X		
X		

B.

X	X	X

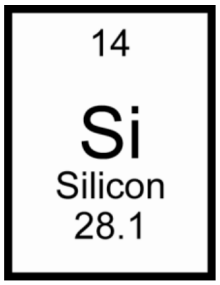
C.

X		
	X	
		X

D.

		X
	X	
X		

7. Use this element from the periodic table to answer the question.



What is the atomic mass for silicon?

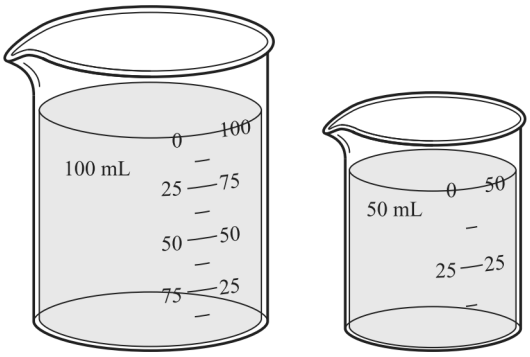
A. 14.0 B. 14.1 C. 28.1 D. 42.1

8. What is the smallest particle of the element gold (Au) that can still be classified as gold?

A. atom B. molecule

C. neutron D. proton

9. The two beakers below contain pure water.



Which of the following properties is the same for both of these samples?

A. mass B. weight

C. volume D. boiling point

10. Which of the following substances can be separated into several elements?

A. nitrogen B. zinc

C. air D. aluminum

11. A student is given a sample of an unknown liquid to test in the laboratory. The student thinks that the liquid is water. Which of the following physical properties of the sample is *most* helpful to determine if the liquid is water?

A. color of the liquid

B. mass of the liquid

C. volume of the liquid

D. boiling point of the liquid

12. Which two substances are elements?

A. sand and air B. salt and sand

C. iron and helium D. helium and water

13. A question on Jamal's homework assignment asked him to explain why air is matter. Which of the following statements should Jamal write to answer the question correctly?

A. Air is invisible.

B. Air is needed for breathing.

C. Air takes up space and has mass.

D. Air takes the shape of its container.

14. Which of the following will form a compound when combined?

A. Atoms B. Elements

C. Neutrons D. Electrons

15. Why are elements considered the building blocks of all compounds?

A. Elements can change into liquids or gases.

B. Elements can change into smaller elements.

C. Elements can combine to create different substances.

16. Which element is located in Group 2 (IIA) and Period 6 of the periodic table?

A. barium (Ba) B. molybdenum (Mo)

C. radium (Ra) D. tungsten (W)

17. Which is the *best* example of a pure substance?

A. peanuts B. milk

C. gold D. air

18. The smallest particle of any element that still has the properties of that element is called

A. an atom. B. a compound.

C. a solution. D. a mixture.

19. Which chemical property places neon (Ne) and argon (Ar) in the same group?

A. Both elements form ionic compounds.

B. Both elements have a full outer energy level.

C. Both elements have low ionization energy.

D. Both elements are liquids at 38° C.

20. Which of the following *best* describes an atom?

A. protons and electrons grouped together in a random pattern

B. protons and electrons grouped together in an alternating pattern

C. a core of protons and neutrons surrounded by electrons

D. a core of electrons and neutrons surrounded by protons

21. Which of the following is found farthest from the center of an atom?

A. nucleus B. proton

C. neutron D. electron

22. Which of the following atoms has six valence electrons?

A. magnesium (Mg) B. silicon (Si)

C. sulfur (S) D. argon (Ar)

23. Silver (Ag) has 47 protons in each atom. Based on this information, which of the following also describes an atom of silver?

A. It has no neutrons.

B. It has 47 electrons.

C. It has 23 neutrons and 24 electrons.

D. It has a total of 94 neutrons and electrons.

24. Which of the following subatomic particles can be found inside the nucleus of an atom?

A. electrons only

B. neutrons only

C. protons and neutrons

D. protons, neutrons, and electrons