

Name _____ Date _____ Class _____

Trends in the Periodic Table Practice Quiz

1. Which group contains elements whose atoms have 4 electrons in their outer level?
 - a. Group 3
 - b. Group 14
 - c. Group 4
 - d. Group 15

2. Mystery element A has 6 valence electrons located in its third electron orbital. What do you know about this element?
 - a. It is in Group 16 and Period 3
 - b. It is in Group 3 and Period 16
 - c. It has 6 protons and 6 electrons
 - d. It has 3 protons and 3 electrons

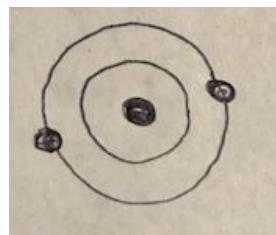
3. Look at your periodic table. Which element is an alkaline-earth metal?
 - a. Fluorine
 - b. Calcium
 - c. Carbon
 - d. Oxygen

4. A hydrogen atom is made up of one proton and one electron. The proton and electron stay near each other because
 - a. Positive and negative charges repel
 - b. Positive and negative charges attract
 - c. Positive and positive charge repel
 - d. Two negatives make a positive

5. An element and an atom are different but related because
 - a. A particular element is made up of many different types of atoms
 - b. A molecule is the same as an atom
 - c. An element is made up of all the same type of atom
 - d. An element is smaller than an atom

6. The atoms in a column of the periodic table all have
 - a. The same abbreviation
 - b. The same number of energy levels
 - c. The same number of electrons
 - d. The same number of electrons in the outer energy level

7. An element's properties can be predicted from its
- a. number of neutrons
 - b. number of isotopes
 - c. atomic mass
 - d. location in the periodic table
8. Look at your periodic table. Which of the following elements probably has physical and chemical properties most similar to boron (B)?
- a. magnesium
 - b. aluminum
 - c. neon
 - d. chlorine
9. Which group of elements will most likely give one electron away when bonding with other atoms?
- a. nitrogen
 - b. potassium
 - c. chlorine
 - d. carbon
10. As you move down the same group, or column, of the periodic table, elements have
- a. fewer protons
 - b. a lower atomic number
 - c. more energy levels
 - d. a different group number
11. Most elements are
- a. metals
 - b. metalloids
 - c. nonmetals
 - d. semiconductors
12. Alkali metals are extremely reactive because they
- a. have very small atomic masses
 - b. are not solid at room temperature
 - c. have one valence electron that is easily removed
 - d. have two valence electrons that can be removed
13. Identify the following atoms:



a. _____ b. _____ c. _____

- _____ 15. This is the largest group of elements in the periodic table and their properties vary so generalities are harder to make. Two properties they share are good conductors of heat and electric current.
- _____ 16. This group contains the most reactive elements in the periodic table.
- _____ 17. The elements in this group all react violently with elements in group 1 to form salts. As such, they are never found uncombined in nature.
- _____ 18. Imagine these elements sitting alone on their throne. These elements are stable and happy with their full outer electron orbitals.
- _____ 19. Looking up at the stars at night you will see brilliant speckling bits of light. This element makes up stars and is so unique it makes up a group of its own.
- _____ 20. Which group contains an element that is part of every living thing on Earth. Because this element has four valence electrons it can form large bonds with other nonmetals to form organic molecules. The elements in this group are all solids at room temperature.
- _____ 21. Which group contains elements whose atoms contain six electrons in their outermost orbital?
- _____ 22. Which group contains one metalloid and five metals and contains aluminum, which is made so cheaply these days?
- a. Alkali metals
- b. Oxygen group
- c. Hydrogen group
- d. Halogens group
- e. Transition metals
- f. Boron group
- g. Carbon group
- h. Noble gases

Finish the graph, then answer...

24. What is the relationship between atomic number and atomic radius as you go down each group in the periodic table?

23. **Directions:** Use the information in the chart to graph the relationship between atomic number and atomic radius of elements as you go down each group in the periodic table.

Graph atomic number on the x-axis and atomic radius on the y-axis. Don't forget to title your graph!

Symbol	Atomic Number	Atomic Radius (pm)
Li	3	167
Na	11	190
K	19	243
Rb	37	265
Cs	55	298

