

## Periodic Trends Practice Quiz

1. From which of the following is it easiest to remove an electron?  
a. Mg            b. Na            c. Al            d. S
2. Which of the following influenced your answer to number one the most?  
a. nuclear charge (number of protons)            b. valence electrons  
c. inner shell electrons            d. shielding effect
3. What is the most probable oxidation state of the alkaline earth metals?  
a. -3            b. +2            c. +3            d. -1
4. Which of the following elements is least metallic?  
a. oxygen    b. fluorine    c. sulfur    d. chlorine
5. Which of the following has a smaller radius?  
a. chlorine    b. chlorine ion    c. they are the same
6. Which of the following is most likely to gain electrons in a chemical reaction?  
a. magnesium    b. chlorine    c. fluorine    d. oxygen
7. Low ionization energy is characteristic of:  
a. metals    b. non-metals    c. metalloids    d. liquids
8. Which of the following is the smallest?  
a. Ne            b. F<sup>-</sup>            c. Na<sup>+</sup>            d. Mg<sup>++</sup>

9. Rank the following elements by **increasing** atomic radius: sulfur, oxygen, neon, aluminum
10. Rank the following elements from high to low electronegativity: carbon, aluminum, oxygen, potassium.
11. Why does Chlorine have a higher ionization energy than Sulfur?
12. Indicate which element in each pair has the **smaller** atomic radius.
- a. Na or Li                      b. Sr or Mg                      c. C or Ge                      d. Se or O
13. Indicate which element in each pair has the **lowest** ionization energy.
- a. Li or B                      b. Mg or Sr                      c. Cs or Al
14. Name the following groups:
- a. Group 1
- b. Group 2
- c. Group 17
- d. Group 18
15. Who developed the first periodic table?
16. Who arranged the “modern” periodic table in order of increasing atomic number?

## Practice Quiz Answers

1. Answer: Na --It's the biggest
2. Answer: A. All of these elements are in the same period, so size is the biggest influence.
3. Answer: B They have two valence electrons, so they tend to lose them.
4. Answer: B fluorine is the smallest and the most non metallic.
5. Answer: A. Chlorine is smaller. The chlorine ion forms by gaining an electron, so the atom was smaller before the electron was gained.
6. Answer: C Fluorine is the smallest atom
7. Answer: A Metals are bigger than non metals and lose their electrons easier.
8. Answer: D All of these ions have the same number of electrons. Mg has the largest number of protons, so it is the smallest.
9. Ne, O, S, Al
10. O, C, Al, K
11. Chlorine has more protons than Sulfur and they have the same outer shell.
12. Li Mg C O
13. Li Sr Cs
14. A. Alkali Metals b. Alkaline Earth Metals c. Halogens d. Noble Gases
15. Dmitri Mendeleev
16. Henry Mosely