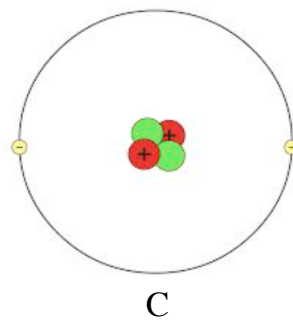
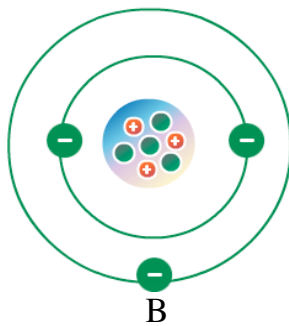
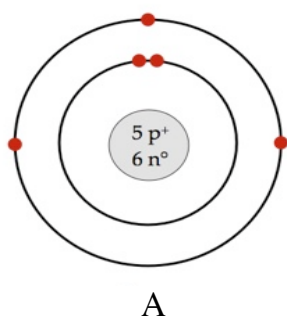


# Periodic Trends Quiz

- From which of the following is it easiest to remove an electron?  
a. Mg      b. Na      c. Al      d. S
- 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
- What is the most probable oxidation state of the alkaline earth metals?  
a. -3   b. +2   c. +3   d. -1   e. none of these
- Which of the following elements is most nonmetallic? (most likely to gain an electron)  
a. oxygen   b. fluorine   c. sulfur   d. chlorine
- Which of the following has a smaller radius?  
a. chlorine   b. chlorine ion   c. they are the same
- Which of the following is most likely to gain electrons in a chemical reaction?  
a. magnesium   b. chlorine   c. fluorine   d. oxygen
- Low ionization energy is characteristic of:  
a. metals   b. non-metals   c. metalloids   d. liquids
- Which of the following is the smallest?  
a. Ne      b. F<sup>-</sup>      c. Na<sup>+</sup>      d. Mg<sup>++</sup>
- Rank the following elements by **increasing** atomic radius: sulfur, oxygen, neon, aluminum
- Rank the following elements from high to low electronegativity: carbon, aluminum, oxygen, potassium.
- Why does Chlorine have a higher ionization energy than Sulfur?

Use the following diagrams to answer questions 12-17



12. Which of the atoms has the highest Ionization energy?
13. Which of the atoms has the smallest radius?
14. Which of the atoms has the easiest electron to be removed?
15. Which of the atoms is the largest?
16. Assuming the atoms are neutral, write the element names above the diagram.
17. Rank the diagrams from lowest to highest electronegativity.
18. Why do the noble gases lack electronegativity values?
19. Indicate which element pair has the **smaller** atomic radius.
  - a. Na or Li
  - b. Sr or Mg
  - c. C or Ge
  - d. Se or O
20. Indicate which element pair has the **lowest** ionization energy.
  - a. Li or B
  - b. Mg or Sr
  - c. Cs or Al
21. Indicate which is the **largest** in each pair.
  - a. Na or Na<sup>+</sup>
  - b. S or S<sup>2-</sup>
  - c. I or I<sup>-</sup>
  - d. Al or Al<sup>3+</sup>
22. The ions O<sup>2-</sup>, F<sup>-</sup>, Na<sup>+</sup>, Mg<sup>2+</sup>, and Al<sup>3+</sup> have the same total number of electrons as Neon. Which has the smallest radius and which has the largest radius? Explain your answer to receive credit.