

**PERIODIC TRENDS PRACTICE QUESTIONS:** Name \_\_\_\_\_

Answer the questions for each sections by comparing the elements in each section:

1) B Al Ga

- a) Which will have the lowest electronegativity? Ga
- b) Highest ionization energy? B
- c) Largest atomic radius? Ga
- d) Which are metals?
- e) List them from largest to smallest in atomic radii.  $Ga > Al > B$
- f) Which would gain electrons to become stable? none of these
- g) Would the ions of these elements be larger or smaller than the neutral atoms? smaller

2) Sb Sn I

- a) Which would have the most metallic properties? Sn
- b) Highest electron affinity? I
- c) Lowest Ionization energy? Sn
- d) Smallest atomic radii? I
- e) Which are metalloids? Sb
- f) When Iodine becomes an ion, is the ion larger or smaller than the atom? larger  $I^-$
- g) Which one is a halogen? I

3) Ca Ba Mg

- a) Lowest electronegativity? Ba
- b) Highest ionization energy? Mg
- c) Which are non-metals? none
- d) List them in order from the highest to the lowest electronegativity.  $Mg > Ca > Ba$
- e) Would the ion be larger or smaller than the atoms? smaller + IM
- f) Lowest electron affinity? Ba

4) Si            Al            P

- a) Highest electron affinity? P
- b) Lowest ionization energy? Al
- c) Smallest atomic radii? P
- d) Which are metalloids? Si
- e) List in order of increasing size (from small to large) Al, Si, Al
- f) Which are non-metals? P
- g) Lowest electronegativity? Al

5) In each set, tell which is larger

- a) Ca v. K K
- b) As v. P As
- c) O v.  $O^{2-}$   $O^{2-}$
- d) Ca v.  $Ca^{+2}$  Ca
- e)  $O^{2-}$  v.  $F^{-1}$   $O^{2-}$

6) Arrange the following in increasing (smallest to largest) atomic radii

- a) sulfur, chlorine, aluminum, and sodium. (2) (1) (3) (4)
- b) carbon, germanium, lead, silicon (1) (3) (4) (2)

7) Arrange the following in increasing Ionization Energy

- a) Be, Mg, Sr (3) (2) (1)
- b) Bi, Cs, Ba (3) (1) (2)

8) In each of the following pairs, which element is the most electronegative?

- a) chlorine, fluorine F
- b) carbon, nitrogen N
- c) magnesium, neon Mg
- d) arsenic, calcium AS

9) Arrange these in increasing atomic radii

- a) barium, magnesium, beryllium, radium (4) (2) (1) (3)
- b) strontium, indium, iodine, antimony (4) (3) (1) (2)