

Name: _____

Key

Periodic Trends Review Sheet

Answer each of the following questions using your knowledge of chemistry and the periodic table.

- 1) Circle the element with the largest atomic radius and put a square around the element with the smallest atomic radius:

O C Be Ne

Explain why you made these selections.

Atomic radius decreases across a period.

- 2) Circle the element with the largest atomic radius and put a square around the element with the smallest atomic radius:

Na H Fr Rb

Explain why you made these selections.

Atomic radius increases down a group.

- 3) Circle the element with the highest first ionization energy and put a square around the element with the lowest first ionization energy:

Be Sr Mg Ca

Explain why you made these selections.

First IE decreases down a group.

- 4) Circle the element with the highest first ionization energy and put a square around the element with the lowest first ionization energy:

Be O F C

Explain why you made these selections.

First IE increases across a period.

- 5) Circle the element in the group with the highest electronegativity and put a square around the element with the lowest electronegativity:

Al Cl K Si

Explain why you made these selections.

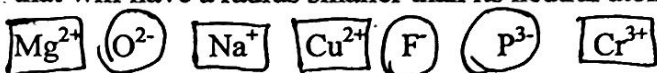
Electronegativity increases across a period.

- 6) Circle the element in the group with highest electronegativity and put a square around the element with the lowest electronegativity: Cl Br **(F)** **[I]**

Explain why you made these selections.

Electronegativity decreases
down a group.

- 7) Circle the ions that will have a radius larger than its neutral atom and put a square around the ions that will have a radius smaller than its neutral atom:



Explain why you made these selections.

- metals lose e⁻ to form smaller **(+)** ions
- nonmetals gain e⁻ to form larger **(-)** ions.

Answer each of the following questions using your knowledge of chemistry and the periodic table.

- 8) As the elements in Group 1 of the Periodic Table are considered in order from top to bottom down the group the ionization energy of each successive element decreases. This is to the a
- (A) Decrease in atomic radius and a decrease in shielding effect
 (B) Increase in atomic radius and a decrease in shielding effect
(C) Increase in atomic radius and an increase in shielding effect
 (D) Decrease in atomic radius and an increase in shielding effect

- 9) The ability of carbon to attract electrons is
- (A) Greater than nitrogen but less than oxygen
 (B) Less than nitrogen but greater than oxygen
 (C) Greater than nitrogen and oxygen
(D) Less than nitrogen and oxygen

C - 3.6
 N - 3.0
 O - 3.5

- 10) The amount of energy required to remove the outermost electron from a neutral gaseous atom in the ground state is called
- (A) Ionization energy** (C) Conductivity
 (B) Activation energy (D) Electronegativity

- 11) Which Group 17 element has the least attraction for electrons in a chemical bond?
- (A) F (B) Cl (C) Br **(D) I**

= lowest electroneg.
(D) I

- 12) Which properties are most common in nonmetals?
- (A) Low ionization energy and high electronegativity
 (B) Low ionization energy and low electronegativity
(C) High ionization energy and high electronegativity
 (D) High ionization energy and low electronegativity