

Skill Practice 15

Periodic Table

Configurations

Name: _____

Date: _____

Hour: _____

1. Use the noble gases to write abbreviated electron configurations for...
 - a) Germanium
 - b) Barium
 - c) Bromine
 - d) Bismuth
 - e) Manganese
 - f) Gold
2. What column of the periodic table contains elements whose electron configurations end with d^4 ?
3. What row of the periodic table contains elements with 4d electrons?
4. What row of the periodic table contains elements with 3p electrons?
5. In each row of the “d block” there are only 10 elements. Why is this?
6. In each row of the “p block” there are only 6 elements. Why is this?

Skill Practice 16

Atomic Size
Practice

Name: _____

Date: _____

Hour: _____

1. What force of attraction does the second energy level of a phosphorus atom “feel” from the nucleus? Draw a Bohr diagram and use it to explain your answer.
2. Using the concepts of shielding and attraction, explain why sulfur is smaller in radius than silicon.
3. Why can't you tell by looking at the periodic table whether chlorine or lithium is larger?
4. Order the following elements from smallest to largest.
 - A) Al, Na, S, Mg
 - B) C, Sn, Pb, Si
 - C) K, Se, Ca, Br
 - D) Be, Ca, C, B, Mg
 - E) Ga, Al, Cl, P
 - F) O, Se, S, Ne

Skill Practice 17

Ionization Practice

Name: _____

Date: _____

Hour: _____

1. If an atom has a “high first ionization energy” does this mean that it is relatively easy or relatively hard to remove an electron from the atom?
2. Arrange the following atoms in order from lowest to highest 1st ionization energy.
 - A) Ca, Se, As, Br
 - B) As, N, P, Bi
 - C) Ga, Al, S, Si
 - D) Li, K, O, C
 - E) Te, O, S, Po
 - F) In, Te, Sn, I
3. A certain atom in the 2nd period has an unusually high 3rd ionization energy. Name this element. Draw a Bohr diagram and use it to illustrate why you were able to identify this atom.
4. Compare the trends for size and for ionization energy. As the size of an atom increases, what happens to the ionization energy? Explain *why* the ionization energy seems to depend on the size.