

Homework #11

Name: _____

Student ID: _____

Chem 192 – Spring 2010
Cañada College

Total Possible Points: 20
Due Tuesday April 22nd

Suggested ch 11 ques.: 1, 5, 7, 8, 10, 12, 22, 24; exer.: 2, 12, 14, 22, 24, 30, 32, 38, 59

1. (1 ½ points) Consider trends in the periodic table to organize the sets of elements below.

a) Write the following elements in order of increasing atomic radius.

Ga, Ge, Br, K _____

b) Write the following elements in order of decreasing atomic radius.

Kr, Ne, He, Rn _____

c) Write the following elements in order of decreasing ionization energy.

Al, B, In _____

d) Write the following elements in order of increasing ionization energy.

C, N, Be, F _____

e) Write the following elements in order of increasing electronegativity.

N, O, B, C _____

f) Write the following elements in order of decreasing electronegativity.

Te, Po, S, O _____

2. (2 points) Predict whether the **bond** in each molecule below is ionic, covalent, or polar covalent. Write **I** for ionic, **C** for covalent, or **P** for polar covalent.

a) Br₂ _____

b) NO _____

c) LiCl _____

d) Al₂O₃ _____

3. (3 points) Below are three ions. For each ion below:

- (a) Write the number of protons.
- (b) Write the number of electrons.
- (c) Write the electron configuration.



(a) _____ electrons

(b) _____ protons

(c) _____



(a) _____ electrons

(b) _____ protons

(c) _____



(a) _____ electrons

(b) _____ protons

(c) _____

4. (1 ½ points) The three ions below have different atomic radius. Draw a circle around the particle below with the largest atomic radius, draw a triangle around the particle with the smallest atomic radius. (Hint: consider your answers to question #3)



5. (3 points) When one electron is removed from an atom of lithium to form the lithium +1 ion, two electrons are left. Helium also has only two electrons. Why is more energy required to remove a second electron from lithium (to form lithium +2 ion) than to remove the first electron helium (to form helium +1 ion)?

6. (4 points) Write the Lewis dot structure for each atom, ion, or compound below.

a) **N**

b) **Cl**

c) **O⁻²**

d) **Br₂**

e) **H₂S**

f) **CCl₄**

g) **NH₃**

h) **HCO₃⁻**

