**Chem 1013 Intro to Chem**

**Spring 2010 Alfred State College**

**Exercise #1**

*Assigning stable charges to elements and building stable ionic (mineral/salt) compounds from them*

* 1. **Stable charges**

Use the Periodic Table deduce the likely charges on the elements below:

S Mg N As F Al C Sr Li

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1.2. Predict compound formulas for combinations of the elements paired below

1. Na + P \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Mg + F \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. K + O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Ca + O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Ba + N \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Al + Cl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Al + O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.3 **. Deducing element charges in ionic fragments**

(left most element in ion fragments are + charged. The fragment charge means the species is not neutral but bears the charge indicated)

1. What is the stable charge of O ? \_\_\_\_
2. What is the charge on S in SO42- (the sulfate anion) ? \_\_\_\_\_
3. Is this consistent with the Periodic ion trends discussed for elements ? \_\_\_\_\_
4. What is the charge on N in NO3- (the nitrate anion) ? \_\_\_\_\_\_
5. Is this consistent with Periodic ion trends discussed for the elements ? \_\_\_\_\_\_
6. What is the charge on P in PO43- (the phosphate anion) ? \_\_\_\_\_\_\_
7. Is this consistent with Periodic ion trends discussed for the elements ? \_\_\_\_\_\_
8. What is the charge on N in NO2- ? \_\_\_\_\_
9. Is this consistent with Periodic ion trends discussed for the elements ? \_\_\_\_\_
10. If N’s charge is +5, what would each O have to be in charge in NO2- ? \_\_\_\_\_