

1. (6 points) What is the group name for

a) group one elements?

b) group seventeen elements?

c) group eighteen elements?

2. (20 points) Name the following compounds.

a)  $\text{Cr}(\text{OH})_2$

b)  $\text{Ca}_3\text{N}_2$

c)  $\text{SO}$

3. (20 points) Write the chemical formulas for the following compounds.

a) carbon disulfide

b) dinitrogen monoxide

c) hydrogen bromide

d) potassium carbonate

e) silver(I) acetate

f) sodium phosphate

g) nickel(II) sulfate

h) phosphorous trichloride

i) zinc cyanide

j) calcium hydroxide

4. (8 points) Name the element with each of the following electronic configurations.

a)  $[\text{He}] 2s^2 2p^2$

b)  $[\text{Ne}] 3s^2 3p^5$

c)  $[\text{Ar}] 4s^1 3d^5$

d)  $[\text{Ar}] 4s^2 3d^{10}$

5. (8 points) Write the electronic configuration for each of the following atoms or ions. Use the noble gas shorthand.

a) Ar

b) Cu

c)  $\text{Al}^{3+}$

d) Si

6. (8 points) List the elements F, N, P, and S from least to most electronegative.

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7. (6 points) Describe the type of bond in the following compounds (i.e., covalent single, covalent double, covalent triple, or ionic.)

a)  $\text{Rb}_2\text{O}$

b)  $\text{F}_2$

c)  $\text{SrCl}_2$

8. (24 points) Write the Lewis dot structure for the following molecules or polyatomic ions and name its molecular geometry. Include all nonbonding electron pairs.

a)  $\text{OF}_2$

b)  $\text{NO}_2^-$

c)  $\text{HCN}$  (carbon is the central atom)

d)  $\text{O}_3$

e)  $\text{CCl}_4$

f)  $\text{CS}_2$