Final Exam Chemistry CP Version B Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Given the following reaction and that the reaction is started with 10 moles of BiCl3 what amount in moles of HCl is produced?

2BiCl3 + 3H2S 🡪 Bi2S3 + 6 HCl

1. Predict the products for each reaction and balance accordingly. Next, classify each reaction by its type.
2. K2(CO3) + NiBr2 🡪 Type:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Sr + CaBr2 🡪 Type:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. C2H6 + O2 🡪 Type:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Write the electron configuration for each of the following:

Ca2+:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cl-: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Given the following elements, identify the number of protons, electrons, and neutrons.
2. F protons = electrons = neutrons =
3. C protons = electrons = neutrons =
4. A reaction is started with 10 g of NaOH. Calculate the amount of moles.
5. A sample of F2 gas contains 12 moles, calculate the mass of fluorine gas.
6. Draw a Lewis Dot Structure for water.
7. Given the following equation:

FeCl3 + (NH4)(NO3) 🡪 Fe(NO3)3 + (NH4)Cl

If the reaction is started with 9 moles of NH4NO3, what amount of moles of iron nitrate will be produced? *Balance the equation first.*

11. Calculate the molarity of an acid that is prepared in 1000 mL and uses 10 g of HCl.

12. Calculate the molarity of a solution that has a volume of 20 L and has 5 moles.

13. Calculate the pH for the following:

A. .01 M HBr =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B. .00652 M Mg(OH)2 =\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C. .01 M LiOH =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D. 9.3 x 10-1 H2SO4 =\_\_\_\_\_\_\_\_\_\_\_\_\_

14. Balance the following reactions with the correct coefficients:

