Name: _____ **Date:** _____

Chemistry *~ Ms. Hart* **Class:** Anions or Cations

THE URBAN ASSEMBLY SCHOOL FOR CRIMINAL JUSTICE

5.4 Polyatomic Ions and Covalent Bonding

Part I:

Directions - For each question: Remember - All atoms must have a complete outer shell!

A) Use the criss-cross method to balance the charge and determine the formula.

B) Write the name of the compound formed.

Example:

1) Mg^{+2} & OH^{-}: a) $Mg(OH)_2$ b) Magnesium hydroxide

2) SO_4^{-2} and Mg^{+2}:

3) Na^{+} and PO_4^{-3}

4) Ba^{+2} and CO_3^{-2}

5) Cu^{+2} and NO_3^{-}

6) NH_4^{+} and N^{-3}

Part II:

For each question: Write the Name for the following compounds. Hint: You will need to determine the oxidation number of the transition metal.

7) Fe_2O_3

8) $CuClO_4$

9) HgO

10) $ZnSO_4$

CHALLENGE QUESTIONS:

Write the formula and name for the compounds formed from the ions below:

11) $CH3COO^{-}$ and Na^{+}

12) NH_4^{+} and OH^{-}

If the name of the compound is given, write the formula. If the formula is given, write the name.

1. CF_4 _____
2. N_2O_5 _____
3. CS_2 _____
4. SO_3 _____
5. P_4O_8 _____
6. iodine tribromide _____
7. chlorine dioxide _____
8. sulfur hexafluoride _____
9. difluorine octachloride _____
10. tribromine nonatelluride _____
11. H_2O _____
12. P_2S_4 _____
13. N_2O_4 _____
14. XeF_4 _____
15. SI_4 _____
16. carbon dioxide _____
17. trinitrogen hexabromide _____
18. diiodine heptaselenide _____
19. CO _____
20. dicarbon octafluoride _____
21. P_4O_{10} _____
22. Si_3N_4 _____
23. Cl_2S_7 _____
24. NBr_5 _____
25. phosphorus trichloride _____
26. PI_3 _____
27. disulfur trioxide _____
28. PCl_5 _____
29. diiodine dichloride _____
30. dinitrogen monoxide _____
31. I_4O_9 _____
32. dihydrogen monoxide _____