Name:

# Unit 5: Nomenclature Review Sheet

***Answer the following questions:***

An IONIC compound is between Metal & Nonmetal or (cation & anion)

A covalent or MOLECULAR compound is between nonmetal & nonmetal

When is a roman numeral needed in a name? For ionic nomenclature w/ multiple charges (Multivalent)

When are numeric prefixes used in a name? only for COVALENT (molecular) nomenclature

When are parentheses used in a formula? For polyatomic ions

In covalent nomenclature, when do you not use the prefix mono-? 1st element

Write the CHARGES for the following group numbers:

| Group 1/ 1A | Group 2/ 2A | Group 13/ 3A | Group 14/ 4A | Group 15/ 5A | Group 16/ 6A | Group 17/ 7A | Group 18/ 8A |
|---|---|---|---|---|---|---|---|
| +1 | +2 | +3 | +/-4 | -3 | -2 | -1 | 0 |

***Name the following: Label the following as an ionic (I) or covalent (C) first, then give the name.***

I 1. $CaCO_3$ Calcium carbonate

C 2. $N_2O$ dinitrogen monoxide

I 3. $NH_4NO_3$ ammonium nitrate

C 4. CO carbon monoxide

I 5. $CaSO_4$ Calcium sulfate

I 6. $MgCl_2$ Magnesium chloride

I 7. $Cd(OH)_2$ Cadmium hydroxide

I 8. LiBr Lithium Bromide

C 9. $NO_2$ Nitrogen dioxide

★ I 10. MnBr $X^{-1}$ $X-1=0 \rightarrow X=1$ manganese (I) bromide

★ I 11. $CuSO_4$ $X^{+2}$ $X-2=0 \rightarrow X=2$ copper (II) sulfate

C 12. $SO_2$ sulfur dioxide

C 13. $NO_2$ nitrogen dioxide

★ I 14. $FeCl_3$ $X^{+3}$ $X-3=0 \rightarrow X=3$ iron (III) chloride

C 15. $N_2O_3$ dinitrogen trioxide

I 16. $(NH_4)_3PO_4$ ammonium phosphate

★ = Multivalent, needs roman numeral

***Write the chemical formula: Label the following as an ionic (I) or covalent (C) first, then give the formula.***

I 17. Ammonium phosphate $NH_4^{+1}$ $PO_4^{-3}$ = $(NH_4)_3PO_4$

I 18. Nickel (III) bromide $Ni^{+3}$ $Br^{-1}$ = $NiBr_3$

C 19. Carbon monoxide CO

C 20. Diphosphorus pentoxide $P_2O_5$

I 21. Magnesium hydroxide $Mg^{+2}$ $OH^{-1}$ = $Mg(OH)_2$

I 22. Beryllium nitrate $Be^{+2}\ NO_3^{-1} = Be(NO_3)_2$

I 23. Lead (IV) sulfite $Pb^{+4}\ SO_4^{-2} = Pb(SO_4)_2$ * reduced

C 24. Phosphorus pentachloride $PCl_5$

I 25. Cobalt (III) chlorate $Co^{+3}\ ClO_3^{-1} = Co(ClO_3)_3$

I 26. Zinc sulfate $Zn^{+2}\ SO_4^{-2} = ZnSO_4$ ★

I 27. Lead (II) oxide $Pb^{+2}\ O^{-2} = PbO$ ★

C 28. Silicon dioxide $SiO_2$

C 29. Carbon disulfide $CS_2$

I 30. Copper (II) nitrite $Cu^{+2}\ NO_2^{-1} = Cu(NO_2)_2$

C 31. Boron trinitride $BN_3$

I 32. Sodium bicarbonate $Na^{+1}\ HCO_3^{-1} = NaHCO_3$

***Choose the best answer for the following:***

33. What is the name of the following monoatomic ion: $Mn^{+4}$ ✓ Multivalent

a. Manganese ion b. Manganese c. Manganese (IV) ion d. Manganese (V) ion

34. What is the name of the following monoatomic ion: $Cr^{+}$

a. Chromium ion b. Chromium (I) ion c. Chromium d. Chromium II) ion

35. What is the name of the following monoatomic ion: $Cl^{-1}$

a. Chloride ion b. chlorine c. Chlorine ion d. Chloride (I) ion

36. What is the name of the following monoatomic ion: $N^{-3}$

a. Nitrogen ion b. Nitrogen c. Nitride (III) ion d. Nitride ion

37. What is formula for the following monoatomic ion: Copper (III) ion

a. $Cu^{+1}$ b. $Cu^{+2}$ c. $Cu^{+3}$ d. Cu

38. What is formula for the following monoatomic ion: Sulfide ion

a. $S^{-1}$ b. $S^{-2}$ c. $S^{-3}$ d. S