

# CHEMISTRY WORKSHEET ON NAMING AND WRITING COMPOUNDS.

In the problems below, decide if the compound is ionic or molecular. Mark your answers with an "I" or an "M". If molecular, go on to use a code after the M such as B for Binary, N for Nonoxy acid, and O for Oxyacid. After you have coded the problem, supply the missing formula or name.

REMEMBER: use Roman numerals where needed to identify transition metals. Use prefixes only with *binary molecules*. Try to complete these problems using only the periodic table. Resort to your notes and your naming guides only after you have really tried!

Part 1: Name these compounds

1. NaOH (BI) Sodium hydroxide
2. HBr (aq) (BN) hydrobromic A.
3. H<sub>2</sub>S (g) (BM) dihydrogen monosulfide
4. HClO<sub>3</sub> (MO) chloric Acid
5. Cu(ClO<sub>4</sub>)<sub>2</sub> (BI) Copper
6. H<sub>2</sub>SO<sub>4</sub> (MO) sulfuric A.
7. NaBr (BI) Sodium bromide
8. Hg(CN)<sub>2</sub> (BI) mercury(II) cyanide
9. SrCO<sub>3</sub> (BI) Strontium carbonate
10. (NH<sub>4</sub>)<sub>2</sub>SO<sub>3</sub> (BI) ammonium sulfite
11. FeO (BI) iron(II) oxide
12. Sn<sub>3</sub>N<sub>4</sub> (BI) Tin(IV) nitride
13. CO<sub>2</sub> (BM) carbon dioxide
14. PCl<sub>5</sub> (BM) phosphorus pentachloride
15. SF<sub>6</sub> (BM) sulfur hexafluoride
16. CoCl<sub>3</sub> (BI) cobalt(III) chloride
17. H<sub>2</sub>CO<sub>3</sub> (MO) carbonic Acid
18. HNO<sub>3</sub> (MO) nitric Acid
19. Fe(MnO<sub>4</sub>)<sub>3</sub> (BI) iron(III) permanganate
20. Ni(NO<sub>3</sub>)<sub>2</sub> (BI) nickel(II) nitrate

Part 2: Give the correct formula

1. zinc phosphide (BI) Zn<sub>3</sub>P<sub>2</sub>
2. tin(II)phosphate (BI) Sn<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>
3. barium chromate (BI) BaCrO<sub>4</sub>
4. aluminum acetate (BI) Al(CH<sub>3</sub>COO)<sub>3</sub>
5. Iodine pentoxide (BM) I<sub>2</sub>O<sub>5</sub>
6. ammonium acetate (BI) NH<sub>4</sub>CH<sub>3</sub>COO
7. mercury(II)sulfate (BI) HgSO<sub>4</sub>
8. sodium dihydrogen phosphate (BI) NaH<sub>2</sub>PO<sub>4</sub>
9. phosphorous acid (MO) H<sub>3</sub>PO<sub>3</sub>
10. acetic acid (MO) CH<sub>3</sub>COOH OR HC<sub>2</sub>H<sub>3</sub>O<sub>2</sub>
11. hydrochloric acid (MN) HCl
12. Chromic acid (MO) H<sub>2</sub>CrO<sub>4</sub>
13. dinitrogen monoxide (BM) N<sub>2</sub>O
14. carbon tetrachloride (BM) CCl<sub>4</sub>
15. iodine monobromide (BM) IBr
16. hydrocyanic acid (BN) HCN
17. sulfuric acid (MO) H<sub>2</sub>SO<sub>4</sub>
18. silver chloride (BI) AgCl
19. lead(IV)sulfide (BI) PbS<sub>2</sub>
20. dichlorine heptoxide (BM) Cl<sub>2</sub>O<sub>7</sub>

Label the following formulae according to the following codes:

- I = ionic . . . [BI = binary ionic . . . TI = ternary ionic (polyatomic ions)]
- M = molecular . . .
- A = acid . . . [BA = binary acid (or non-oxyacid) . . . . OA = oxyacid]

Part I: Give the correct formula for each of the following . . . .

1. mercury(II)sulfate (BI)  $HgSO_4$
2. lithium acetate (BI)  $LiCH_3COO$
3. zinc oxide (BI)  $ZnO$
4. sulfuric acid (OA)  $H_2SO_4$
5. diphosphorus pentoxide (BM)  $P_2O_5$
6. barium phosphate (BI)  $Ba_3(PO_4)_2$
7. ammonium hydroxide (BI)  $NH_4OH$
8. iron(II)perchlorate (BI)  $Fe(ClO_4)_2$
9. potassium fluoride (BI)  $KF$
10. perchloric acid (OA)  $HClO_4$
11. sodium carbonate (BI)  $Na_2CO_3$
12. nickel(II)oxide (BI)  $NiO$
13. boron trifluoride (BM)  $BF_3$
14. magnesium phosphate (BI)  $Mg_3(PO_4)_2$
15. hydrogen chloride (BM)  $HCl$
16. hydrobromic acid (BA)  $HBr$
17. calcium bromide (BI)  $CaBr_2$
18. carbon dioxide (BM)  $CO_2$
19. lead(IV)nitrate (BI)  $Pb(NO_3)_4$
20. sodium hydroxide (BI)  $NaOH$
21. aluminum hydrogen sulfate (BI)  $Al(HSO_4)_3$
22. hydroiodic acid (BA)  $HI$
23. nitrous acid (OA)  $HNO_2$
24. copper(II)nitride (BI)  $Cu_3N_2$
25. carbon tetrabromide (BM)  $CBr_4$

Part II: Give the correct name for each of the following . . . .

26.  $Al_2O_3$  (BI) Aluminum oxide
27.  $Ag_2S$  (BI) silver sulfide
28.  $CBr_4$  (BM) carbon tetrabromide
29.  $PbSO_3$  (BI) lead(II)sulfite
30.  $LiI$  (BI) Lithium iodide
31.  $Mg(OH)_2$  (BI) magnesium hydroxide
32.  $K_2S$  (BI) potassium sulfide
33.  $Ca(CN)_2$  (BI) calcium cyanide
34.  $Fe_3(PO_4)_2$  (BI) iron(II) phosphate
35.  $N_2O_5$  (BM) dinitrogen pentoxide
36.  $HBrO_2$  (OA) Bromous A.
37.  $HCl(aq)$  (BA) hydrochloric A.
38.  $HF(aq)$  (BA) hydrofluoric A.
39.  $KMnO_4$  (BI) potassium permanganate
40.  $OF_2$  (BM) oxygen difluoride
41.  $CO_2$  (BM) carbon dioxide
42.  $Al(NO_2)_3$  (BI) aluminum nitrite
43.  $CuO$  (BI) copper(II) oxide
44.  $Be_3P_2$  (BI) Beryllium phosphide
45.  $NaF$  (BI) Sodium fluoride
46.  $CaHPO_4$  (BI) calcium hydrogen phosphate
47.  $Al_2S_3$  (BI) Aluminum sulfide
48.  $Cu_2O$  (BI) copper(I) oxide
49.  $Br_2O_7$  (BM) dibromine heptoxide
50.  $SnCl_4$  (BI) tin(IV) chloride