Chemistry 101 – Unit 5
Practice Problems

1. Fill in the Table below with the correct name or formula for each compound. For each indicate if the compound is IONIC, MOLECULAR, or an ACID.

#	Name	Formula	Type
1	calcium fluoride		
2		$NaC_2H_3O_2$	
3	iron(III) sulfate		
4	sodium oxide		
5		Li_3PO_4	
6	ammonium chloride		
7		MgI_2	
8	nickel phosphate		
9	potassium chlorate		
10	carbon disulfide		
11		H_2SO_4	
12	sulfur hexafluoride		
13	lithium bromide		
14		N_2O_5	
15	copper(II) nitrate		
16	ammonia		
17		$AlPO_4$	
18	mercury(II) sulfide		
19	ammonium sulfate		
20		$FeCl_2$	
21	barium carbonate		
22	sulfur trioxide		
23	phosphoric acid		
24		NO_2	
25	silver nitrate		
26		$Al_2(CO_3)_3$	
27	phosphorus pentabromide		
28	nitric acid		
29	carbon tetraiodide		
30	lithium phosphide		

Fill in the Table below with the correct name or formula for each compound. For each indicate if the compound is IONIC, MOLECULAR, or an ACID.

#	Name	Formula	Type
31	potassium hydroxide		
32		$CoCl_3$	
33	sodium sulfate		
34	nitrous acid		
35	potassium chlorite		
36	lead(IV) oxide		
37		$CaCO_3$	
38	sodium hydrogen sulfate		
39	barium nitrate		
40		HBr	
41	sodium nitride		
42		CaO	
43	nickel acetate		
44	aluminum sulfate		
45		AgI	
46	tetrasulfur tetranitride		
47		NH_4OH	
48	copper(II) sulfate		
49	lead(II) acetate		
50		K_2SO_4	
51	magnesium chloride		
52	copper(I) sulfide		
53		PCl_3	
54	sodium hydrogen carbonate		
55	hydrofluoric acid		
56		HgO	
57	silver chloride		
58	sulfurous acid		
59	cobalt(III) nitrate		
60	magnesium hydroxide		

2. Indicate the number of atoms in each of the following:

3 $Mg(OH)_2$	_____ Mg	_____ O	_____ H	
4 $(NH_4)_2SO_4$	_____ N	_____H	_____S	_____ O
2 $Ca_3(PO_4)_2$	_____ Ca	_____P	_____O	
6 $Co(NO_3)_3$	_____ Co	_____N	_____ O	

3. Fill in the Table below for ionic compounds. How do you recognize an ionic compound?

Compound	Cation	Anion	Formula
magnesium fluoride			
sodium carbonate			
iron(III) bromide			
silver nitrate			
barium sulfate			
aluminum oxide			
lead(II) acetate			
potassium sulfide			
zinc phosphate			
	Ca^{2+}	PO_4^{3-}	
	Cu^{2+}	Cl^-	
	NH_4^+	SO_4^{2-}	

4. Fill in the following Table for acids. How do you recognize an acid?

cation formula	anion formula	anion name	acid name	acid formula
H^+			nitric acid	
H^+			hydrofluoric acid	
H^+			acetic acid	
H^+			chlorous acid	
H^+				HI
H^+				H_2SO_4
H^+				H_2S
H^+	PO_4^{3-}			

5. Write the name or the formula for the following molecular compounds. How do you recognize molecular compounds?

NAME	FORMULA
phosphorus tribromide	
dichlorine heptoxide	
carbon tetrachloride	
sulfur dioxide	
	SF_6
	NO
	P_2O_5
	IF_3

6. Write the chemical formulas for the following compounds:

1. Sodium Nitrite
2. Calcium Carbonate
3. Carbon Tetrafluoride
4. Hydrochloric Acid
5. Barium Hydroxide
6. Potassium Iodide
7. Calcium Chlorate
8. Dinitrogen Pentoxide
9. Copper (II) Iodide
10. Copper (II) Nitrate
11. Silver Bromide
12. Ammonium Sulfate
13. Hydrobromic Acid
14. Potassium Chlorate
15. Sulfur Hexafluoride
16. Sulfurous Acid
17. Tin (IV) Oxide
18. Magnesium Carbonate
19. Cesium Hydroxide
20 Strontium Fluoride
21. Sulfur Trioxide
22. Rubidium Sulfate
23. Iron (II) Phosphate
24. Copper (I) Sulfite
25. Lead (IV) Chloride
26. Nitrous Acid
27. Lithium Hydrogen Sulfate
28. Ammonia
29. Cobalt (III) Iodide
30. Ammonium Hydroxide
31. Potassium Hydrogen Carbonate
32. Strontium Chloride
33. Acetic Acid
34. Aluminum Hydroxide
35. Iron (III) Nitrate
36. Nickel (II) Phosphate
37. Lead (II) Iodide
38. Tin (II) Sulfate
39. Nitric Acid
40. Water
41. Boron Trichloride
42. Iron (II) Bromide
43. Lithium Phosphate
44. Lead (II) Sulfate
45. Zinc Carbonate
46. Sulfuric Acid
47. Cobalt (II) Acetate
48. Zinc Chloride
49. Cesium Iodide
50. Phosphoric Acid