Nomenclature Worksheet

1. Binary Ionic Compounds

$MgCl_2$	
Na_2S	
KBr	
ScF_3	
$SrCl_2$	
BeI_2	
Rb_3F	
Al_2S_3	
Ba_3N_2	
Li_4C	
Calcium chloride	
Potassium oxide	
Magnesium selenide	
Cesium fluoride	
Strontium phosphide	
Sodium sulphide	
Zinc nitride	
Cadmium iodide	
Zirconium oxide	
Beryllium chloride	

2. The Stock System

$FeCl_3$	
CuS	
Hg2S	
AuBr3	
Pb3N4	
CuI2	
SnO2	
Au2O3	
MnCl3	
Co3P2	
Iron(II) chloride	
Copper(I) sulphide	
Lead(IV) iodide	
Tin(II) fluoride	
Mercury(I) bromide	
Tin(II) oxide	
Chromium(III) oxide	
Gold(I) iodide	
Manganese(II) nitride	
Cobalt(III) phosphide	

3. Polyatomic Ionic Compounds

$NaNO_3$	
$Cu(NO_3)_2$	
$PbCO_3$	
$CaCO_3$	
$CuSO_4$	
$Sn_3(PO_4)_2$	
$Fe_2(SO_4)_3$	
$Zr(ClO_3)_4$	
$Sr(CN)_2$	
$Co(NO_2)_2$	
Rubidium carbonate	
Calcium nitrate	
Lithium phosphate	
Magnesium sulphate	
Barium chlorate	
Potassium hydroxide	
Calcium cyanide	
Ammonium bromide	
Lead(IV) nitrate	
Scandium Iodate	

4. Molecular Compounds

SF_6	
NO_2	
PCl_3	
IF_7	
BF_3	
N_2O_3	
P_2S_5	
PCl_5	
CF_4	
CS_2	
Carbon dioxide	
Carbon tetraiodide	
Dinitrogen tetroxide	
Potassium iodide	
Carbon monoxide	
Sulfur trioxide	
Nitrogen trihydride	
Dihydrogen oxide	

5. Hydrates

$CuSO_4.H_2O$	
$Na_2SO_4.10H_2O$	
$MgSO_4.7H_2O$	
$SrSO_3.9H_2O$	
$NiPO_4.9H_2O$	
$PbI_2.3H_2O$	
$HgF_2.6H_2O$	
$MnO.5H_2O$	
$Ag_2SO_4.4H_2O$	
$SnCO_3.8H_2O$	
Rhodium(III) nitrate decahydrate	
Copper(I) sulphide pentahydrate	
Tin(II) sulphide monohydrate	

Iron(III) oxide trihydrate	
Cadmium(II) nitrate tetrahydrate	
Lithium chloride pentahydrate	
Calcium chloride dehydrate	
Aluminum chloride hexahydrate	
Sodium sulfite trihydrate	
Tin(IV)iodide heptahydrate	

6. Classical Names

FeC2	
CuCl2	
SnF4	
Sb2Se5	
HgBr2	
CoI3	
CuI	
AuS	
Ferrous oxide	
Cupric fluoride	
Stannous Chloride	
Aurous Nitride	
Stibnic sulfide	
Ferric carbide	
Mercuric chloride	
Iron(II) oxide	
Copper(III) fluoride	
Tin(IV) carbide	

7. Binary Acids

Write the classical name:

HF(aq)	
HCl(aq)	
HI(aq)	
HBr(aq)	
H_2S(aq)	

Write the IUPAC names:

HBr(aq)	
H_2S(aq)	
HCl(aq)	
HF(aq)	
HI(aq)	

Find the formula:

Hydrofluoric acid	
Aqueous hydrogen bromide	
Aqueous hydrogen sulphide	
Hydroiodic acid	
Hydrobromic acid	
Aqueous hydrogen chloride	
Aqueous hydrogen fluoride	
Hydrosulfuric acid	
Hydrochloric acid	
Aqueous hydrogen iodide	

8. Oxy Acids

H_3PO_3	
HNO_2	
H_2SO_3	
HClO	
H_2SO_5	

$HBrO_4$	
$HMnO_4$	
H_2TeO_3	
H_4XeO_5	
H_3AsO_3	
Aqueous hydrogen nitrite	
Aqueous hydrogen carbonate	
Aqueous hydrogen perchlorate	
Aqueous hydrogen acetate	
Iodic acid	
Telluric acid	
Hyposulfurous acid	
Periodic acid	
Perrhenic acid	
Phosphoric acid	

Molecular Compound Questions

1) What are molecular compounds composed of?
2) When are molecular compounds used?
3) When you write down the chemical formula, do you reduce to the Lowest Common Denominator?
4) What order of electronegativity do you write the formula in?
5) What does the Greek numeric prefix indicate?
6) What does the prefix "*penta*" stand for?
7) [redacted]
8) When Hydrogen bonds with Carbon why does it not follow the Electronegativity ordering rule?
9) [redacted]
10) [redacted]
11) [redacted]
12) Define a binary molecular compound.
13) When molecular compounds are dissolved in water, do they generally conduct electricity?
14) When a molecular compound is formed, is it a covalent or ionic bond?
15) Do molecular compounds generally have a low or high melting/boiling point?
16) Given P and F5, write the word equation and show how they bond.
17) What does the prefix "*tetra*" stand for?
18) What are "+" and "-" called?
19) What allows certain molecular compounds to dissolve in water?
20) [redacted]

Oxy-based Acids

1. What is an Oxy-based Acid?

a) an acid containing oxygen, chlorine, and a third element
b) an acid containing oxygen, hydrogen, and a third element.
c) an acid containing fluorine, hydrogen, and a third element.

2. A base is a substance that produces _____ when dissolved in water.

a) Fl
b) Cl
c) OH-

3. An acid is a substance that produces _____ when dissolved in water.

a) Hydrogen
b) Sodium
c) Hydronium

4. When we name oxyacids, we omit the word hydrogen and add what word?

5. What is another name for Aspirin?

Polyatomic ion	**Molecular Formula**	**Name of Acid**
a)	H_2NO_3	Nitric acid
Sulfite	b)	Sulfurous acid
Percarbonate	H_2CO_4	c)
Hypochlorite	d)	Hypochlorous acid
Phosphate	H_3PO_4	e)

11. When naming Oxyacids what portion of the acidic solution is omitted from the name?

A) Polyatomic ion
B) Hydrogen
C) Both A and B
D) None of the above

12) "When we name oxyacids we add the word 'acid' to the end of the name." This statement is...

A) True
B) False

13) Base polyatomic ions end with -ate, if the polyatomic ion is one atom less than the base it would end with what ending?

A) -ide
B) -ous
C) -ite
D) -ate

14) When naming an oxyacid, the # of oxygen atoms relating to the base polyatomic ion control the suffix placed at the end. If the oxyacid has less oxygen atoms than the base polyatomic ion, the suffix placed on the name would be...

A) -ous
B) -ic
C) -ade
D) -ate

15) Given the information you have learned, what would the name of HNO

A) Hyponitrous acid
B) Nitric acid
C) Hydrogen Nitride
D) None of the above

16) An oxyacid containing carbonate would have how many hydrogen atoms?

17) What does the oxyanion hypo-ite suggest?

18) Why is hydrochloric acid (HCL) not an oxyacid?

19) Using H_3PO_4 as an example, what must be the charge of the phosphate ion?

20) What must be the oxyanion for $HCLO_4$?