Chemistry
Writing & Naming Chemical Compounds Review

Name Key

Ion Charges

Instructions: Write the charge that each of the following elements would form in an ionic compound.

a) Al +3
b) S -2
c) K +1
d) F -1
e) Cs +1
f) Ag +1
g) Fe(II) +2
h) Li +1
i) Sn(IV) +4

Naming Ion Charges

Instructions: Name each of the following ions correctly.

a) N^{3-} nitride
b) Cl^- chloride
c) Na^+ Sodium ion
d) Cd^{2+} cadmium ion
e) Fe^{3+} iron(III) ion
f) S^{2-} sulfide
g) Cu^+ copper(I) ion
h) O^{2-} oxide
i) Br^- bromide

Molecular vs. Ionic Naming

Instructions: Determine whether the following compounds are ionic (I) or molecular (M) (circle one). Then use the correct rules to name the following compounds.

a) (M) or I – As_4O_{10} tetraarsenic decoxide
b) M or (I) – $KMnO_4$ potassium permanganate
c) M or (I) – $HgCl_2$ mercury(II) chloride
d) M or (I) – $FePO_4$ iron (III) phosphate
e) (M) or I – NO nitrogen monoxide
f) (M) or I – F_2Cl_5 difluorine pentachloride
g) M or (I) – NH_4Br ammonium bromide
h) (M) or I – N_2O_5 dinitrogen pentaoxide
i) M or (I) – $Zn(OH)_2$ zinc hydroxide
j) (M) or I – ICl_3 iodine trichloride

Molecular vs. Ionic Formulas

Instructions: The following contains a mixture of both ionic and molecular compounds. Determine whether the following compounds are ionic (I) or molecular (M) (circle one). Then determine the correct chemical formula from the name.

a) M or (I) – Zinc cyanide $Zn(CN)_2$
b) (M) or I – Selenium hexafluoride SeF_6
c) (M) or I – Nitrogen dioxide NO_2
d) M or (I) – Lithium nitride Li_3N
e) M or (I) – Lead (II) phosphate $Pb_3(PO_4)_2$
f) (M) or I – Dinitrogen trioxide N_2O_3
g) M or (I) – Magnesium chlorate $Mg(ClO_3)_2$

h) (M) or I – Tetraphosphorus nonasulfide P_4S_9

i) M or (I) – Calcium sulfide CaS

j) M or (I) – Copper (II) nitride Cu_3N_2

Naming Common Acids			
Anion ending	Example	Acid name	Example
-ide	chlor*ide*, Cl^-	*hydro*-(stem)-*ic* acid	*hydro*chlor*ic* acid
-ite	sulf*ite*, SO_3^{-2}	(stem)-*ous acid*	sulfur*ous acid*
-ate	nitr*ate*, NO_3^-	(stem)-*ic acid*	nitr*ic acid*

Acid vs Bases Naming

Instructions: Determine whether the following compounds are acids (A) or bases (B) (circle one). Then use the correct rules to name the following compounds.

a) (A) or B – H_3As hydroarsenic acid

b) A or (B) – $Co(OH)_3$ Cobalt (III) hydroxide

c) A or (B) - $AgOH$ silver hydroxide

d) A or (B) - $Cd(OH)_2$ cadmium hydroxide

e) (A) or B - HCN hydrocyanic acid

f) (A) or B – H_3P hydrophosphoric acid

g) (A) or B – H_3PO_4 phosphoric acid

h) A or (B) - $CsOH$ Cesium hydroxide

i) (A) or B - $HClO$ hypochlorous acid

Acid vs Bases Formulas

Instructions: Determine whether the following compounds are acids (A) or bases (B) (circle one). Write the correct chemical formulas for the following acids and bases.

a) (A) or B – Hydrosulfuric acid H_2S

b) A or (B) - Barium hydroxide $Ba(OH)_2$

c) (A) or B - Chlorous acid $HClO_2$

d) (A) or B – Hydroiodic acid HI

e) A or (B) - Iron (III) hydroxide $Fe(OH)_3$

f) (A) or B – Carbonic Acid H_2CO_3

g) (A) or B – Sulfuric Acid H_2SO_4

h) (A) or B – Nitrous Acid HNO_2

i) A or (B) - Sodium hydroxide $NaOH$