

1. Which compounds are ionic, **write I**, which compounds are Molecular, **write M**?

a)  $\text{KMnO}_4$    **I**  

b)  $\text{NaHCO}_3$    **I**  

c)  $\text{TiCl}_4$    **M**  

d)  $\text{NH}_4\text{Cl}$    **I**  

2. Name the following compounds.

<b>FORMULA</b>	<b>NAME</b>
$\text{Li}_3\text{N}$	<b>Lithium nitride</b>
$\text{Hg}_2\text{Cl}_2$	<b>Mercury(I) chloride</b>
$\text{N}_2\text{O}_5$	<b>Dinitrogen pentoxide</b>
$\text{NH}_4\text{C}_2\text{H}_3\text{O}_2$	<b>Ammonium acetate</b>
$\text{Fe}_2(\text{CO}_3)_3$	<b>Iron(III) carbonate</b>
$\text{I}_4\text{O}_9$	<b>Tetraiodine nonoxide</b>
$\text{AgCN}$	<b>Silver cyanide</b>
$\text{NaH}_2\text{PO}_4$	<b>Sodium dihydrogen phosphate</b>
$\text{Ba}(\text{IO}_3)_2$	<b>Barium iodate</b>
$\text{KNO}_2$	<b>Potassium nitrite</b>

3. Write formulas for the compounds given in the table.

<b>NAME</b>	<b>FORMULA</b>
Gold(III) nitrate	<b>Au(NO<sub>3</sub>)<sub>3</sub></b>
Lead(IV) oxide	<b>PbO<sub>2</sub></b>
Calcium acetate	<b>Ca(C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>)<sub>2</sub></b>
Iron(III) hydroxide	<b>Fe(OH)<sub>2</sub></b>
Mercury(I) bromide	<b>Hg<sub>2</sub>Br<sub>2</sub></b>
Aluminum sulfite	<b>Al<sub>2</sub>(SO<sub>3</sub>)<sub>3</sub></b>
Chromium(III) sulfate	<b>Cr<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub></b>
Disulfur decafluoride	<b>S<sub>2</sub>F<sub>10</sub></b>
Tin(II) sulfide	<b>SnS</b>
Nickel(II) iodate	<b>Ni(IO<sub>3</sub>)<sub>2</sub></b>
Strontium phosphate	<b>Sr<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub></b>
Diiodine pentoxide	<b>I<sub>2</sub>O<sub>5</sub></b>
Carbon tetrabromide	<b>CBr<sub>4</sub></b>
Tetraphosphorous heptasulfide	<b>P<sub>4</sub>S<sub>7</sub></b>
Magnesium hydrogencarbonate	<b>Mg(HCO<sub>3</sub>)<sub>2</sub></b>

4. Given that selenium (Se) is similar to sulfur, and that francium (Fr) is similar to sodium, write the formulas for the following compounds.

a) Zinc selenide           **ZnSe**          

b) Cobalt(II) selenite           **CoSeO<sub>3</sub>**          

c) Selenium dioxide           **SeO<sub>2</sub>**          

d) Selenium hexafluoride           **SeF<sub>6</sub>**          

e) Francium hydroxide           **FrOH**          

f) Hydro selenic acid           **H<sub>2</sub>Se(aq)**          

5. Give the formula for the following compounds.

a) Zinc fluoride trihydrate **ZnF<sub>2</sub>·3H<sub>2</sub>O**

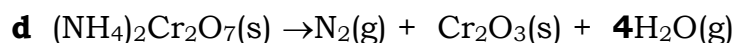
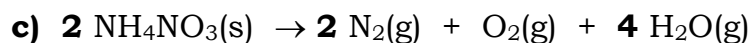
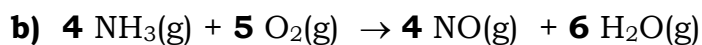
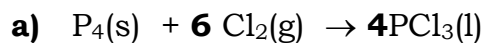
b) Copper(II)sulfate pentahydrate **CuSO<sub>4</sub>·5H<sub>2</sub>O**

6. Give the name for the following compounds.

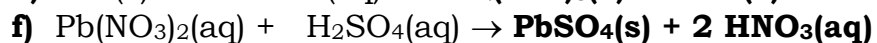
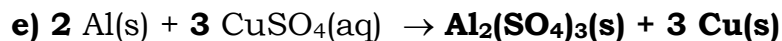
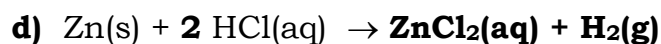
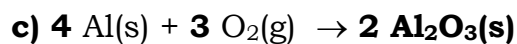
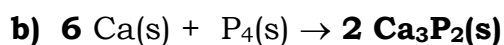
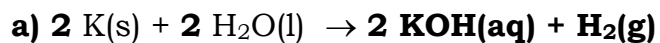
a) NaC<sub>2</sub>H<sub>3</sub>O<sub>2</sub> · 3 H<sub>2</sub>O **Sodium acetate trihydrate**

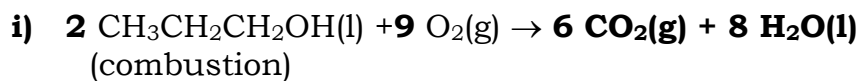
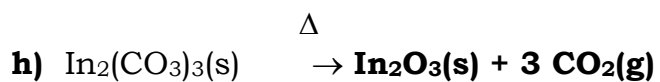
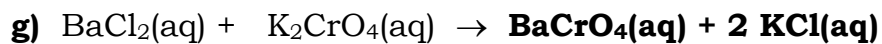
b) Na<sub>2</sub>CO<sub>3</sub> · 10 H<sub>2</sub>O **Sodium carbonate decahydrate**

7. Balance the following equations.



8. Complete and balance the following reactions for which reactants are given. Give **states** of substances. In each case there is a reaction.





**9.** Give the net-ionic equations for the following balanced reactions.

