Names and Symbols of Monatomic Ions

1+		2+		3+		4+	
hydrogen	H^+	magnesium	Mg^{2+}	aluminium	Al^{3+}	tin(IV)	Sn^{4+}
lithium	Li^+	calcium	Ca^{2+}	iron(III)	Fe^{3+}	lead(IV)	Pb^{4+}
sodium	Na^+	barium	Ba^{2+}	chromium(III)	Cr^{3+}		
potassium	K^+	manganese(II)	Mn^{2+}	gold(III)	Au^{3+}		
silver	Ag^+	iron(II)	Fe^{2+}				
copper(I)	Cu^+	copper(II)	Cu^{2+}				
gold(I)	Au^+	zinc	Zn^{2+}				
		mercury(II)	Hg^{2+}				
		tin(II)	Sn^{2+}				
		lead(II)	Pb^{2+}				
		strontium	Sr^{2+}				
		nickel(II)	Ni^{2+}				
		cobalt(II)	Co^{2+}				
		cadmium(II)	Cd^{2+}				

1-		2-		3-	
hydride	H^-	oxide	O^{2-}	nitride	N^{3-}
fluoride	F^-	sulfide	S^{2-}		
chloride	CI^-				
bromide	Br^-				
iodide	I^-				

Names and Formulae of Polyatomic Ions.

1–		2–		3–	
hydroxide	OH^-	carbonate	CO_3^{2-}	phosphate	PO_4^{3-}
nitrate	NO_3^-	sulfate	SO_4^{2-}		
nitrite	NO_2^-	sulfite	SO_3^{2-}		
hydrogencarbonate	HCO_3^-	dichromate	$Cr_2O_7^{2-}$		
hydrogensulfate	HSO_4^-	chromate	CrO_4^{2-}		
ethanoate (acetate)	CH_3COO^-	hydrogenphosphate	HPO_4^{2-}		
permanganate	MnO_4^-	oxalate	$C_2O_4^{2-}$		
cyanide	CN^-	peroxide	O_2^{2-}		
*perchlorate	ClO_4^-				
*chlorate	ClO_3^-				
*chlorite	ClO_2^-				
*hypochlorite	ClO^-				

1+		2+	
ammonium	NH_4^+	mercury(I)	Hg_2^{2+}

* These names do not need to be learned.

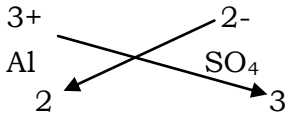
WRITING FORMULAE FOR IONIC SUBSTANCES:

1. Write down symbol for the positive and negative ion and put valence (charge) above.
   calcium carbonate: Ca^{2+} CO_3^{2-} aluminium sulfate: Al^{3+} SO_4^{2-}

2 A. If charges are the **same** then write the compound minus the charges.

$CaCO_3$

2 B. If charges are **different** then cross over the charges and use brackets if a polyatomic ion.



Answer: **$Al_2(SO_4)_3$**

Names and Formulae of molecular substances

Elements		**Compounds**	
hydrogen	H_2	carbon monoxide	CO
nitrogen	N_2	carbon dioxide	CO_2
oxygen	O_2	sulfur dioxide	SO_2
fluorine	F_2	sulfur trioxide	SO_3
chlorine	Cl_2	water	H_2O
bromine	Br_2	ammonia gas	NH_3 (g)
iodine	I_2	ammonia solution	NH_3 (aq)
phosphorus	P_4	hydrogen sulfide	H_2S
sulfur	S_8	hydrogen peroxide	H_2O_2
		hydrogen fluoride	HF
		hydrogen chloride gas	HCl (g)
		hydrogen bromide	HBr
		hydrogen iodide	HI
		nitrogen monoxide	NO (nitric oxide)
		nitrogen dioxide	NO_2
		dinitrogen monoxide	N_2O (nitrous oxide)
		dinitrogen tetroxide	N_2O_4
		hydrochloric acid	HCl (aq)
		nitric acid	HNO_3
		phosphoric acid	H_3PO_4
		sulfurous acid	H_2SO_3
		sulfuric acid	H_2SO_4
		hypochlorous acid	HClO
		organic compounds like	
		methane	CH_4
		ethanol	CH_3CH_2OH or C_2H_5OH
		ethanoic acid	CH_3COOH (acetic acid)