2.11 (a) O^- 7 valence e⁻ (b) Kr 8 valence e⁻ Ne 8 valence e⁻
Cl^- 8 valence e⁻ Rb^+ 0 valence e⁻ Mg^{2+} 0 valence e⁻
Ag 8 valence e⁻ Sr 2 valence e⁻

2.15 ~~compounds~~ ionic compounds form by electrostatic interactions. Those atoms that tend to lose e⁻ (metals, those elements on the left to middle of the periodic table) form ionic compounds with those that tend to gain e⁻ (nonmetals, those elements on the right of the periodic table).

(a) ionic
(b) both Na & Ca tend to lose e⁻. they do not react together
(c) N & O form covalent molecules like N_2O
(d) C & H form covalent molecules like CH_4

2.16 (a) $Rb^+ + F^- \longrightarrow RbF$

(b) $Mg^{2+} + O^{2-} \longrightarrow MgO$

(c) $2Al^{3+} + 3O^{2-} \longrightarrow Al_2O_3$

(d) $Ca^{2+} + 2I^- \longrightarrow CaI_2$

2.20

~~SALT~~ SALT	%(MASS) Cl	%(mole) Cl
NaCl	$\frac{35.453\ g\ Cl}{58.443\ g\ NaCl} \times 100\% = 60.663\%$	$\frac{1\ mol\ Cl}{1\ mol\ Na + 1\ mol\ Cl} \times 100\% = 50\%$
KCl	$\frac{35.453\ g\ Cl}{74.55\ g\ KCl} \times 100\% = 47.555\%$	$\frac{1\ mole\ Cl}{1\ mole\ K + 1\ mole\ Cl} \times 100\% = 50\%$
RbCl	$\frac{35.453\ g\ Cl}{120.921\ g\ RbCl} \times 100\% = 29.319\%$	$\frac{1\ mole\ Cl}{1\ mol\ Rb + 1\ mol\ Cl} \times 100\% = 50\%$