

- 1) $3 \text{ ZnSO}_3 + 2 \text{ Co}(\text{BrO}_2)_3 \rightarrow 3 \text{ Zn}(\text{BrO}_2)_2 + \text{Co}_2(\text{SO}_3)_3$
- 2) $\text{Mg}_3\text{N}_{2(s)} + 6 \text{ H}_2\text{O}_{(l)} \rightarrow 3 \text{ Mg}(\text{OH})_{2(aq)} + 2 \text{ NH}_{3(l)}$
- 3) $\text{NCl}_{3(g)} + 3 \text{ H}_2\text{O}_{(l)} \rightarrow 3 \text{ HClO}_{(aq)} + \text{NH}_{3(l)}$
- 4) $\text{N}_2\text{O}_{5(g)} + \text{H}_2\text{O}_{(l)} \rightarrow 2 \text{ HNO}_{3(aq)}$
- 5) $4 \text{ FeO}_{(s)} + \text{O}_{2(g)} \rightarrow 2 \text{ Fe}_2\text{O}_{3(s)}$
- 6) $\text{Fe}_2\text{O}_{3(s)} + 3 \text{ CO}_{(g)} \rightarrow 2 \text{ Fe}_{(s)} + 3 \text{ CO}_{2(g)}$
- 7) $\text{PCl}_{5(g)} + 4 \text{ H}_2\text{O}_{(l)} \rightarrow \text{H}_3\text{PO}_{4(aq)} + 5 \text{ HCl}_{(aq)}$
- 8) $\text{Al}_2(\text{CO}_3)_{3(s)} + 6 \text{ LiNO}_{2(aq)} \rightarrow 2 \text{ Al}(\text{NO}_2)_{3(aq)} + 3 \text{ Li}_2\text{CO}_{3(aq)}$
- 9) $\text{PCl}_{3(g)} + 3 \text{ H}_2\text{O}_{(l)} \rightarrow \text{H}_3\text{PO}_{3(aq)} + 3 \text{ HCl}_{(aq)}$
- 10) $\text{P}_2\text{O}_{5(g)} + 3 \text{ H}_2\text{O}_{(l)} \rightarrow 2 \text{ H}_3\text{PO}_{4(aq)}$
- 11) $\text{Ni}(\text{NO}_3)_{2(aq)} + 2 \text{ NaOH}_{(aq)} \rightarrow \text{Ni}(\text{OH})_{2(s)} + 2 \text{ NaNO}_{3(aq)}$
- 12) $(\text{NH}_4)_2\text{Cr}_2\text{O}_7 \rightarrow \text{N}_{2(g)} + \text{Cr}_2\text{O}_{3(s)} + 4 \text{ H}_2\text{O}_{(l)}$
- 13) $3 \text{ H}_2\text{SO}_{4(aq)} + 2 \text{ Bi}(\text{OH})_{3(s)} \rightarrow \text{Bi}_2(\text{SO}_4)_{3(aq)} + 6 \text{ H}_2\text{O}_{(l)}$
- 14) $4 \text{ Sb}_3(\text{AsO}_4)_{5(s)} + 15 \text{ TiO}_{2(s)} \rightarrow 6 \text{ Sb}_2\text{O}_{5(s)} + 5 \text{ Ti}_3(\text{AsO}_4)_{4(s)}$
- 15) $2 \text{ C}_8\text{H}_{18(l)} + 25 \text{ O}_{2(g)} \rightarrow 18 \text{ H}_2\text{O}_{(l)} + 16 \text{ CO}_{2(g)}$
- 16) $3 \text{ H}_{2(g)} + \text{N}_{2(g)} \rightarrow 2 \text{ NH}_{3(l)}$
- 17) $3 \text{ PbO} + 2 \text{ NH}_{3(g)} \rightarrow 3 \text{ Pb}_{(s)} + \text{N}_{2(g)} + 3 \text{ H}_2\text{O}_{(l)}$
- 18) $2 \text{ Fe}_{(s)} + 3 \text{ Cl}_{2(g)} \rightarrow 2 \text{ FeCl}_{3(aq)}$
- 19) $\text{Cu}_{(s)} + 2 \text{ H}_2\text{SO}_{4(aq)} \rightarrow \text{CuSO}_{4(aq)} + \text{SO}_{2(g)} + 2 \text{ H}_2\text{O}_{(l)}$
- 20) $\text{C}_4\text{H}_{10}\text{O}_{(l)} + 6 \text{ O}_{2(g)} \rightarrow 5 \text{ H}_2\text{O}_{(l)} + 4 \text{ CO}_{2(g)}$
- 21) $\text{Cd}(\text{NO}_3)_{2(aq)} + \text{Na}_2\text{S}_{(aq)} \rightarrow \text{CdS}_{(s)} + 2 \text{ NaNO}_{3(aq)}$
- 22) $4 \text{ KClO}_{3(aq)} \rightarrow 3 \text{ KClO}_{4(aq)} + \text{KCl}_{(aq)}$
- 23) $2 \text{ HC}_2\text{H}_3\text{O}_{2(aq)} + \text{Ca}(\text{OH})_{2(aq)} \rightarrow \text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_{2(aq)} + 2 \text{ H}_2\text{O}_{(l)}$
- 24) $2 \text{ H}_3\text{PO}_{4(aq)} + 3 \text{ Na}_2\text{CO}_{3(aq)} \rightarrow 2 \text{ Na}_3\text{PO}_{4(aq)} + 3 \text{ H}_2\text{O}_{(l)} + 3 \text{ CO}_{2(g)}$
- 25) $2 \text{ H}_3\text{AsO}_{4(aq)} + 3 \text{ Ba}(\text{OH})_{2(aq)} \rightarrow \text{Ba}_3(\text{AsO}_4)_{2(s)} + 6 \text{ H}_2\text{O}_{(l)}$

A note about the subscripts: Some of these you could have done with the solubility rules and some you couldn't. These are fairly accurate if all of the reactions take place in water. You will only be asked to predict subscripts based on the solubility rules, acids, CO_2 and H_2O , so if you can't do most of these... DON'T FREAK OUT! Try what you can.