Chem Ch 11
Wkst 11.A

1) $2Mg_{(s)} + O_{2(g)} \xrightarrow{\Delta} 2MgO_{(s)}$

12.7g Mg, ? g O_2, ? g MgO

$\left(\frac{12.7\text{g Mg}}{1}\right)\left(\frac{1\text{ mole Mg}}{24.3\text{g Mg}}\right)\left(\frac{1\text{ mole }O_2}{2\text{ mole Mg}}\right)\left(\frac{32.0\text{g }O_2}{1\text{ mole }O_2}\right) = \boxed{8.36\text{g }O_2}$

$\left(\frac{12.7\text{g Mg}}{1}\right)\left(\frac{1\text{ mole Mg}}{24.3\text{g Mg}}\right)\left(\frac{2\text{ mole MgO}}{2\text{ mole Mg}}\right)\left(\frac{40.3\text{g MgO}}{1\text{ mole MgO}}\right) = \boxed{21.1\text{g MgO}}$

2) $2HgO \xrightarrow{\Delta} 2Hg + O_2$

37.5g HgO, ? moles HgO; ? moles O_2, ? g O_2

$\left(\frac{37.5\text{g HgO}}{1}\right)\left(\frac{1\text{ mole HgO}}{216.6\text{g HgO}}\right) = \boxed{.173\text{ moles HgO}}$

$\left(\frac{.173\text{ mole HgO}}{1}\right)\left(\frac{1\text{ mole }O_2}{2\text{ mole HgO}}\right) = \boxed{.0866\text{ mole }O_2}$

$\left(\frac{.0866\text{ mole }O_2}{1}\right)\left(\frac{32.0\text{g }O_2}{1\text{ mole }O_2}\right) = \boxed{2.77\text{g }O_2}$

3) $NaCl_{(aq)} + AgNO_{3(aq)} \rightarrow AgCl_{(s)} + NaNO_{3(aq)}$

? g NaCl, 15.0g $AgNO_3$, ? g AgCl

$\left(\frac{15.0\text{g }AgNO_3}{1}\right)\left(\frac{1\text{ mole }AgNO_3}{169.9\text{g }AgNO_3}\right)\left(\frac{1\text{ mole AgCl}}{1\text{ mole }AgNO_3}\right)\left(\frac{143.4\text{g AgCl}}{1\text{ mole AgCl}}\right) = \boxed{12.7\text{g AgCl}}$

$\left(\frac{15.0\text{g }AgNO_3}{1}\right)\left(\frac{1\text{ mole }AgNO_3}{169.9\text{g }AgNO_3}\right)\left(\frac{1\text{ mole NaCl}}{1\text{ mole }AgNO_3}\right)\left(\frac{58.5\text{g NaCl}}{1\text{ mole NaCl}}\right) = \boxed{5.16\text{g NaCl}}$

4) $2Cu_{(s)} + O_{2(g)} \xrightarrow{\Delta} 2CuO_{(s)}$

$1.00\text{Kg} = 1.00\times10^3\text{g}$ Cu, ? g CuO

$\left(\frac{1.00\times10^3\text{g Cu}}{1}\right)\left(\frac{1\text{ mole Cu}}{63.5\text{g Cu}}\right)\left(\frac{2\text{ mole CuO}}{2\text{ mole Cu}}\right)\left(\frac{79.5\text{g CuO}}{1\text{ mole CuO}}\right) = \boxed{1{,}250\text{g CuO}}$