

Assessment

Chapter 1

BLM 4-4

Chapter 4 Test

Goal

Demonstrate and assess your understanding of the concepts presented in Chapter 4.

What To Do

Write your answers to the following questions on separate paper and attach to this page. You may use a calculator and the periodic table in your textbook as aids.

- Write a word equation, a skeleton equation and a balanced equation for the reaction of zinc with an acetic acid solution. The reaction products are a zinc acetate solution and hydrogen gas.
- Balance the following equations and state the type of reaction in each case.
 - $C_4H_{10(g)} + O_{2(g)} \rightarrow CO_{2(g)} + H_2O_{(l)}$
 - $CaCO_{3(s)} + HNO_{3(aq)} \rightarrow Ca(NO_3)_{2(aq)} + CO_{2(g)} + H_2O_{(l)}$
 - $Al(OH)_{3(s)} \rightarrow Al_2O_{3(s)} + H_2O_{(l)}$
 - $Al_{(s)} + CuCl_{2(aq)} \rightarrow AlCl_{3(aq)} + Cu_{(s)}$
 - $K_2O_{(s)} + H_2O_{(l)} \rightarrow KOH_{(aq)}$
- Complete and balance the following reactions.
 - $K_{(s)} + O_{2(g)} \rightarrow \underline{\hspace{2cm}}$
 - $Al_{(s)} + AgNO_{3(aq)} \rightarrow \underline{\hspace{2cm}}$
 - $\underline{\hspace{2cm}} \rightarrow Mg(NO_3)_{2(aq)} + PbSO_{4(s)}$
 - $\underline{\hspace{2cm}} \rightarrow CaO_{(s)} + CO_{2(g)}$
 - $C_6H_{12}O_{6(s)} + O_{2(g)} \rightarrow \underline{\hspace{2cm}}$
- Identify a synthesis, decomposition, single displacement, double displacement, complete combustion and incomplete combustion in the following examples.
 - $C_2H_6O_{(l)} + 3O_{2(g)} \rightarrow 2CO_{2(g)} + 3H_2O_{(l)}$
 - $Pb(NO_3)_{2(aq)} + 2KCl_{(aq)} \rightarrow PbCl_{2(s)} + 2KNO_{3(aq)}$
 - $Mg_{(s)} + Zn(NO_3)_{2(aq)} \rightarrow Zn_{(s)} + Mg(NO_3)_{2(aq)}$
 - $CaCO_{3(s)} \rightarrow CaO_{(s)} + O_{2(g)}$
 - $2C_3H_8(g) + 7O_2(g) \rightarrow 6CO(g) + 8H_2O(l)$
 - $SO_{3(g)} + H_2O_{(l)} \rightarrow H_2SO_{4(aq)}$
- Complete the following nuclear equations and identify the type of reaction.
 - ${}_{83}^{210}\text{Bi} \rightarrow {}_{81}^{206}\text{Tl} + \underline{\hspace{2cm}}$
 - ${}_{91}^{233}\text{Pa} \rightarrow \underline{\hspace{2cm}} + {}_{-1}^0\text{e}$
 - ${}_{92}^{236}\text{U} + {}_0^1\text{n} \rightarrow \underline{\hspace{2cm}} + {}_{54}^{143}\text{Xe} + 3{}_0^1\text{n}$
 - $\underline{\hspace{2cm}} + {}_1^2\text{H} \rightarrow 2{}_2^4\text{He}$