May 24, 2019

Answers pg 241 #1-3
Review Reactions Types

Test Tuesday on Chp 6!!

Warm- Up

For each equation state the reaction type:
Combustion (C) , Synthesis (S), Decompostion (D), Single Replacement (SR), double replacement (DR)

1. $Ba + H_3PO_4 \Rightarrow Ba_3(PO_4)_2 + H_2$
2. sodium + bromine $\Rightarrow$ sodium bromide
3. methane + oxygen $\Rightarrow$ carbon dioxide + water vapour
4. $CaCl_2 + Al_2(SO_4)_3 \Rightarrow CaSO_4 + AlCl_3$

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1. a) two compounds as reactants = double replacement
   b) one element and one compound as reactants = single displacement
   c) two elements as reactants = synthesis
   d) one compound as a reactant = decomposition

2. a) copper + silver nitrate ⟶ silver + copper (II) nitrate
   single displacement
   b) zinc + hydrochloric acid ⟶ hydrogen + zinc chloride
   single displacement
   c) calcium carbonate + hydrochloric acid ⟶ carbonic acid + calcium chloride
   double replacement
   d) aluminum + copper (II) chloride ⟶ copper + aluminum chloride
   single replacement

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3. a) copper + silver nitrate ⇒ silver + copper (II) nitrate

$Cu + Ag^{1+}NO_3^{1-} \Rightarrow Cu^{2+}(NO_3)^{1-} + Ag$

$Cu + AgNO_3 \Rightarrow Cu(NO_3)_2 + Ag$ (skeletal eqn)

$Cu + 2AgNO_3 \Rightarrow Cu(NO_3)_2 + 2Ag$ (balanced eqn)

b) zinc + hydrochloric acid ⇒ hydrogen + zinc chloride

$Zn + HCl \Rightarrow H_2 + Zn^{2+}Cl^{1-}$

$Zn + HCl \Rightarrow H_2 + ZnCl_2$ (skeletal eqn)

$Zn + 2HCl \Rightarrow H_2 + ZnCl_2$ (balanced eqn)

c) calcium carbonate + hydrochloric acid ⇒ carbonic acid + calcium chloride

$Ca^{2+}CO_3^{2-} + HCl \Rightarrow Ca^{2+}Cl^{1-} + H_2CO_3$

$CaCO_3 + HCl \Rightarrow CaCl_2 + H_2CO_3$ (skeletal eqn)

$CaCO_3 + 2\,HCl \Rightarrow CaCl_2 + H_2CO_3$ (balanced)

d) aluminum + copper (II) chloride ⇒ copper + aluminum chloride

$Al + Cu^{2+}Cl^{1-} \Rightarrow Cu + Al^{3+}Cl^{1-}$

$Al + CuCl_2 \Rightarrow Cu + AlCl_3$ (skeletal eqn)

$2Al + 3CuCl_2 \rightarrow 2AlCl_3 + 3Cu$ (balanced eqn)

Types of Reactions

Synthesis (Building Up)

One compound as a product

element + element → compound

A + B → AB

Decomposition (Breaking Down)

One compound as a reactant

compound → element + element

AB → A + B

Combustion (burning)

compound + O_2 → $CO_2 + H_2O$ (complete)

(incomplete) → $CO_2 + H_2O + CO + C$

Single Replacement

element + compound → element + compound

A + BC → B + AC

Double Replacement

compound + compound → compound + compound

AB + CD → AD + BC

Nov 1-7:40 AM

Homework

Reactions Worksheet

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Oct 27-8:26 PM