

3. What are some differences between an ionic compound and a molecular compound?

Ionic compounds - give/take electrons, conduct electricity, high melting points

Covalent Compounds - share electrons, do not conduct electricity, low melting points

4. For the following reactions, indicate whether the following are examples of synthesis, decomposition, combustion, single displacement or double displacement.

- 1)  $\text{Na}_3\text{PO}_4 + 3 \text{KOH} \rightarrow 3 \text{NaOH} + \text{K}_3\text{PO}_4$  Double Displacement
- 2)  $\text{MgCl}_2 + \text{Li}_2\text{CO}_3 \rightarrow \text{MgCO}_3 + 2 \text{LiCl}$  Double Displacement
- 3)  $\text{C}_6\text{H}_{12} + 9 \text{O}_2 \rightarrow 6 \text{CO}_2 + 6 \text{H}_2\text{O}$  Combustion
- 4)  $\text{Pb} + \text{FeSO}_4 \rightarrow \text{PbSO}_4 + \text{Fe}$  Single displacement
- 5)  $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$  Decomposition
- 6)  $\text{P}_4 + 3 \text{O}_2 \rightarrow 2 \text{P}_2\text{O}_3$  Synthesis
- 7)  $2 \text{RbNO}_3 + \text{BeF}_2 \rightarrow \text{Be}(\text{NO}_3)_2 + 2 \text{RbF}$  Double Displacement
- 8)  $2 \text{AgNO}_3 + \text{Cu} \rightarrow \text{Cu}(\text{NO}_3)_2 + 2 \text{Ag}$  Single displacement
- 9)  $\text{C}_3\text{H}_6\text{O} + 4 \text{O}_2 \rightarrow 3 \text{CO}_2 + 3 \text{H}_2\text{O}$  Combustion
- 10)  $2 \text{C}_5\text{H}_5 + \text{Fe} \rightarrow \text{Fe}(\text{C}_5\text{H}_5)_2$  Synthesis

5. Balance the following equations using coefficients.

- 1)  $2 \text{C}_6\text{H}_6 + 15 \text{O}_2 \rightarrow 6 \text{H}_2\text{O} + 12 \text{CO}_2$
- 2)  $4 \text{NaI} + \text{Pb}(\text{SO}_4)_2 \rightarrow \text{PbI}_4 + 2 \text{Na}_2\text{SO}_4$
- 3)  $4 \text{NH}_3 + 5 \text{O}_2 \rightarrow 4 \text{NO} + 6 \text{H}_2\text{O}$
- 4)  $2 \text{Fe}(\text{OH})_3 \rightarrow \text{Fe}_2\text{O}_3 + 3 \text{H}_2\text{O}$
- 5)  $2 \text{HNO}_3 + \text{Mg}(\text{OH})_2 \rightarrow 2 \text{H}_2\text{O} + \text{Mg}(\text{NO}_3)_2$
- 6)  $\text{H}_3\text{PO}_4 + 3 \text{NaBr} \rightarrow 3 \text{HBr} + \text{Na}_3\text{PO}_4$
- 7)  $3 \text{C} + 4 \text{H}_2 \rightarrow \text{C}_3\text{H}_8$
- 8)  $2 \text{CaO} + \text{MnI}_4 \rightarrow \text{MnO}_2 + 2 \text{CaI}_2$
- 9)  $\text{Fe}_2\text{O}_3 + 3 \text{H}_2\text{O} \rightarrow 2 \text{Fe}(\text{OH})_3$
- 10)  $\text{C}_2\text{H}_2 + 2 \text{H}_2 \rightarrow \text{C}_2\text{H}_6$