HW – May 8

Classes of chemical compounds - 4

A. Reactions where acids and bases react with each other are called **<u>reactions of neutralization</u>**. In these reactions a salt and water are formed. E.g. below is a neutralization reaction between hydrochloric acid (HCl – acid) and sodium hydroxide (NaOH – base) with formation of salt (sodium chloride, NaCl) and water:

$$HCl + NaOH \rightarrow NaCl + H_2O$$

$$H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_2O$$

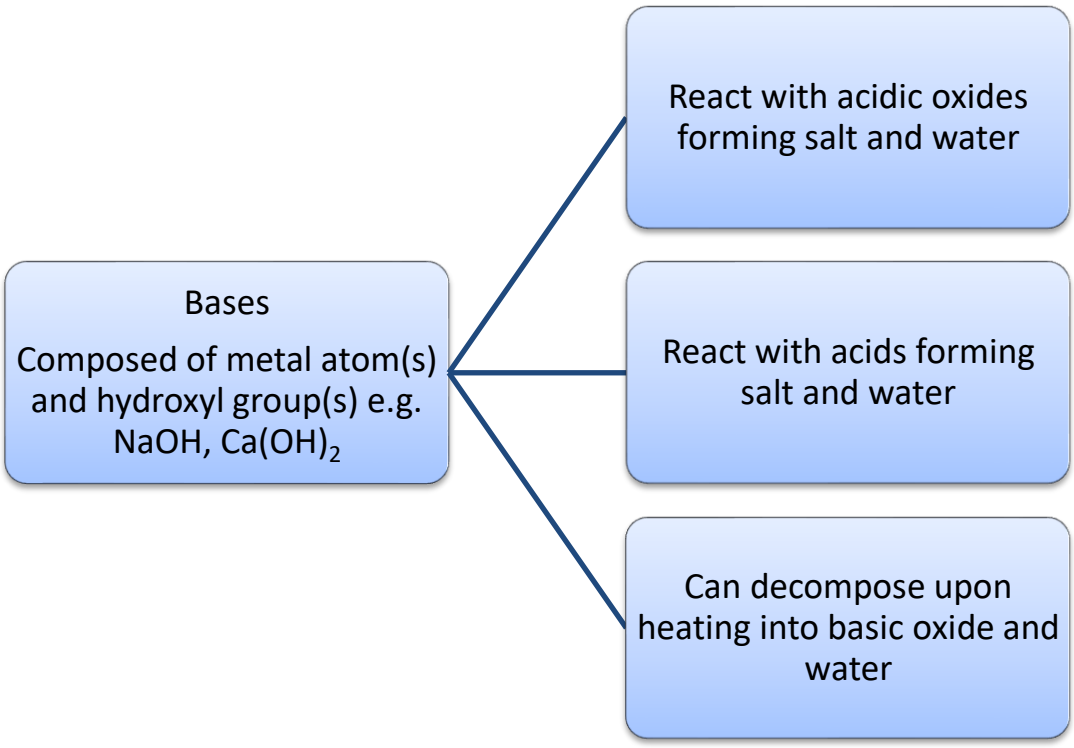
B. When acidic oxides react with water, they form acids. E.g.:

$$SO_3 + H_2O \rightarrow H_2SO_4$$

C. When basic oxides react with water, they form bases. E.g.:

$$CaO + H_2O \rightarrow Ca(OH)_2$$

D. Reactions of bases:



1. Write chemical equations for the following transformations:

$$Ca \rightarrow CaO \rightarrow Ca(OH)_2 \rightarrow CaSO_4$$

$$S \rightarrow SO_2 \rightarrow SO_3 \rightarrow H_2SO_4 \rightarrow CaSO_4$$

2. Write chemical equations for the following transformations:

$$Ca \rightarrow Ca(OH)_2 \rightarrow CaO \rightarrow CaSO_4$$

3. Basic CaO reacts with hydrochloric acid (HCl) forming the salt of calcium chloride $CaCl_2$ and water. Write the chemical reaction, balance the equation, and calculate how many grams of this salt will form from 73 g HCl.