PSC-4012 Quiz 10

Name: Answers

Date:

1. The human stomach produces hydrochloric acid (HCl), commonly known as "stomach acid". It is generated in the digestion process, but when a person eats something requiring the stomach to work overtime in digesting it- say, a pizza- the stomach may generate excess hydrochloric acid, and the result is "heartburn". When this happens, people often take antacids, which contain a base called magnesium hydroxide ($Mg(OH)_2$).

   a) Write the balanced chemical equation for the reaction between hydrochloric acid and magnesium hydroxide.

   $2HCl + Mg(OH)_2 \rightarrow MgCl_2 + 2H_2O$

   b) Explain why this reaction is considered to be a "neutralization" reaction.

   An acid (pH less than 7) combines with a base (pH greater than 7) to produce a neutral salt water solution (pH = 7).

2. In a chemistry lab some nitric acid (HNO_3) is accidentally spilled on the floor. The instructor pours sodium hydroxide (NaOH) into the spilled acid.

   a) Write the balanced chemical equation for the reaction that occurs.

   $HNO_3 + NaOH \rightarrow H_2O + NaNO_3$

   b) Explain why this reaction is considered to be a "neutralization" reaction.

   Same answer as b) above.