Acids and Bases Questions

1. a) What do we mean when we describe a solution as neutral?
b) Describe the pH changes that you would expect if a base was added to neutralize an acidic solution with a pH of 3.

2. What would you expect as an approximate pH value for each of the following:
a) a concentrated base
b) a dilute basic solution
c) a concentrated acid
b) a dilute acid solution
e) tap water

3. Identify each of the following substances as an acid, a base, or neither:
a) potassium hydroxide
b) $HClO_3$
c) $Mg(OH)_2$
d) HNO_3

4. Write the name or formula for each of the substances in question 3.

5. a) What is meant by the term “acid indigestion”?
b) What acid is present in the stomach?
c) How could you treat acid indigestion?

6. What happens to the pH of an acid when water is added to it?

(P, D) 7. Certain bacteria in the mouth thrive in acidic pH but cannot survive in basic pH. These bacteria produce acids that can dissolve the enamel on teeth which leads to cavities. Toothpastes usually contain chemicals that make them slightly basic (alkaline). Why?

(P, D) 8. If you found a solid substance in your kitchen cupboard, how would you test it to decide whether it was an acid or a base? Remember you should never test unknown substances by tasting.