

Unit 11: Problem Set 1 (chap. 19)

1. List three properties of an acid and three properties of a base.

Acid: Sour
Neutral
Wet

litmus b to r
phenolphthalein (clear)
Conducts
0-6.99

Base - Bitter
Slippery
Litmus r to b

phenolphthalein (pink)
Conducts
pH = 7.01-14

2. Name or write the formula for the following acids and bases.

- a. H_3PO_4 Phosphoric acid
- b. $Zn(OH)_2$ zinc hydroxide
- c. HI Hydroiodic acid
- d. $Cu(OH)_2$ Copper I hydroxide
- e. Hydro sulfuric acid H_2S
- f. Aluminum hydroxide $Al(OH)_3$
- g. Iron II hydroxide $Fe^{+2}(OH)_2$
- h. H_3P hydrophosphoric acid
- i. Acetic acid $H^+ C_2 H_3 O_2^-$
- j. Nitrous acid $H^+ NO_2^-$



3. How did Arrhenius describe acids and bases?

Acids: Start with an H^+
Bases: End with OH^-

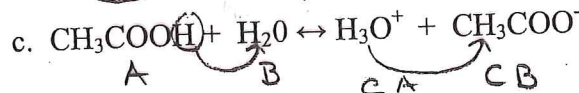
4. Classify each as an Arrhenius acid or base.

- a. $Ca(OH)_2$ base
- b. KOH base
- c. H_2SO_4 acid

di protic

$H^+ = \text{proton}$

5. Identify the Bronstad-Lowry acid/ base pair and conjugate for the following reactions.



$H^+ \rightarrow$ Acid donates

Base accepts H^+

6. What is a Lewis acid and base?

Acid is an electron pair acceptor
Base is an electron pair donor

