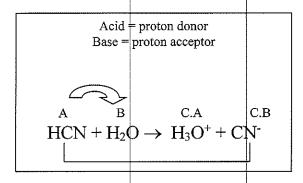
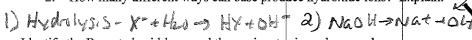
## How to reaction produce H<sub>3</sub>O<sup>+</sup> and OH<sup>-</sup> ions?

- What are the ways in which a reaction can produce H+ dr OH-
  - Student will be able to characterize the different ways reactions can make H+ and OH- are produced.
  - Students will be able to write hydrolysis reactions for acids and bases. 0



- 1. How many ways can an acid produce Hydronium Ions? Explain.
  - 1) Hydrolysis HY+ 1/20- H30T +X+
- 2. How many different ways can base produce hydroxide ions? Explain.



Identify the Bronsted acid-base and the conjugates in each example

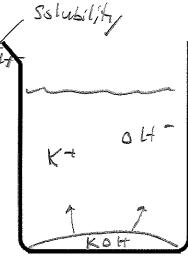
- 3.  $HCO_3^- + H_2O \rightarrow H_2CO_3 + OH^-$ 4.  $HNO_2 + H_2O \rightarrow NO_2^- + H_3O^+$

- $\begin{array}{c} A & CB \\ A & CA \\ \end{array}$   $\begin{array}{c} A + & B \\ A & CB \\ \end{array}$

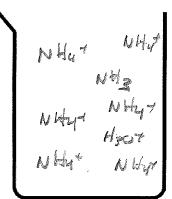
Write the Hydorlysis equations for the following acids and bases

7. 
$$HNO_3 + H_2O \rightarrow H_3O^+ + ND_3^-$$
  
ACID

- 8. HSO4+H2O → H3O+ +SO42
- 9. NH3 +HLO NHq+ + OH-BASE C
- 10. NH4++HW NH3+ H2O+
- 11. Show Beaker A filled with water after having some solid KOH dissolved
- 12. Show Beaker B filled with NH<sub>4</sub> + dissolving in water and a small fraction undergoing hydrolysis. (add an anion where appropriate.)



Beaker A



Beaker B