

Name: _____

Blk: _____ Date: _____

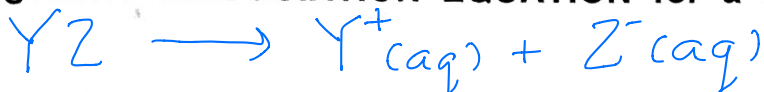
Chemistry 12
ACID BASE PART II Lesson # 14

HYDROLYSIS → water splitting

The HYDROLYSIS OF A SALT is a reaction between water and the cation or anion (or both) contained in the salt so as to produce a neutral, acidic or basic solution.

Like STRONG ACIDS and STRONG BASES, all SOLUBLE SALTS are said to ionize 100% in water.

The generic DISSOCIATION EQUATION for a SALT, YZ, in water:



Example 1. Write the dissociation equation for the following salts in water:

- a. $\text{NaCl} \longrightarrow \text{Na}^+(aq) + \text{Cl}^-(aq)$
b. $\text{K}_3\text{PO}_4 \longrightarrow 3\text{K}^+(aq) + \text{PO}_4^{3-}(aq)$
c. $(\text{NH}_4)_2\text{S} \longrightarrow 2\text{NH}_4^+(aq) + \text{S}^{2-}(aq)$

Recall the term SPECTATOR IONS, in this unit spectator ions are those that will not react with water. The conjugates of the STRONG ACIDS AND BASES are spectator ions.

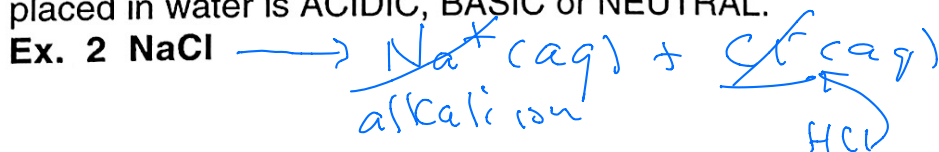
SPECTATOR CATIONS- alkali + alkaline earth metal ions

SPECTATOR ANIONS- "5" conjugate bases of the strong acids

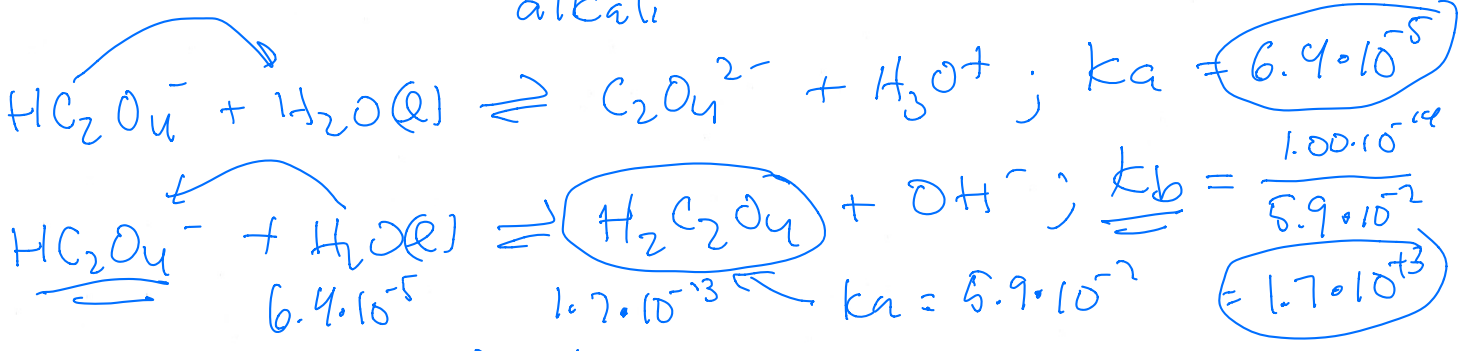
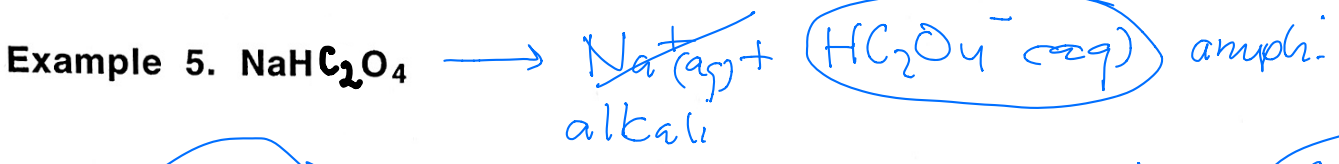
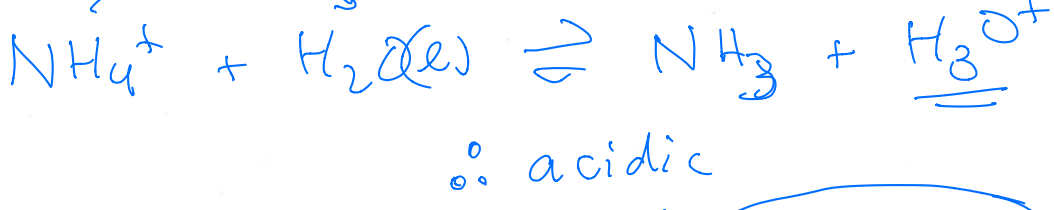
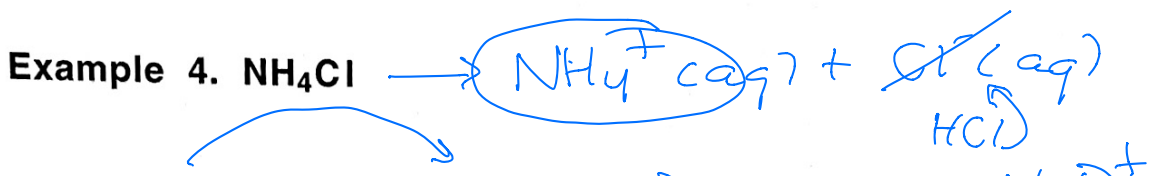
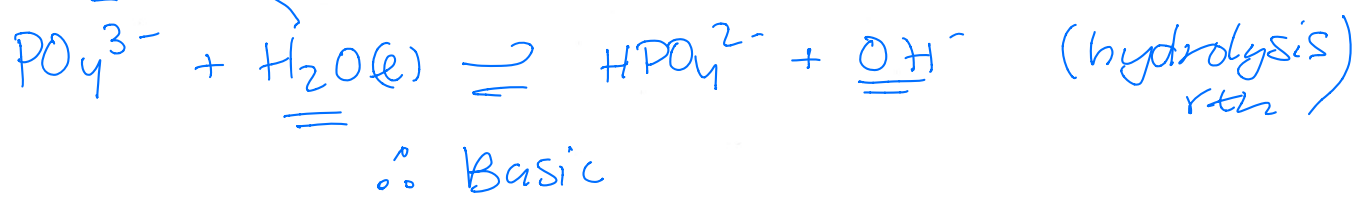
HSO_4^- (does not like an acid)
Determining the Behaviour of a salt in water involves FOUR steps:

1. write out the dissociation eqn
2. Discard any spectator ions
3. Identify the remaining ions as either acidic or basic
4. compare their K_a & K_b values!

For the following Salts, determine if the solution that they produce when they are placed in water is ACIDIC, BASIC or NEUTRAL.



∴ neutral



$K_a > K_b \therefore$ ACIDIC

