

## HOMWORK

1. \* According to Arrhenius theory, "An acid is a substance which when dissolved in water, ionizes and releases hydrogen ions  $[H^+]$  in solution. But "those substances which give hydroxide or hydroxyl ion  $(OH^-)$  in their aqueous solution are called bases."

\* According to Lewis theory, A Lewis acid is a substance that accepts a pair of electrons to form a covalent bond. A Lewis base is a substance that donates a pair of electrons to form a covalent bond.

2. Ammonia is a base but it does not contain hydroxyl group because on reacting with water ammonia forms ammonium hydroxide which further on ionization gives ammonium ion and hydroxide ion.

The reaction is as follows:-



After ionization:-



Also, according to Lewis theory, ammonia can be pigeonholed as a base as it can donate its lone pair of electrons to hydrogen ion  $(H^+)$ .



Let Oxidation state of K be  $x$ .

Oxidation state of  $\text{MnO}_4 \rightarrow -1$

$$\therefore x + (-1) = 0$$

$$\Rightarrow x = +1$$

$\therefore$  The ox-state of K-atom in Potassium Permanganate is  $(+1)$ .