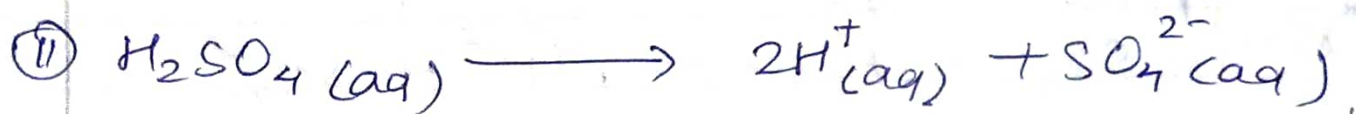
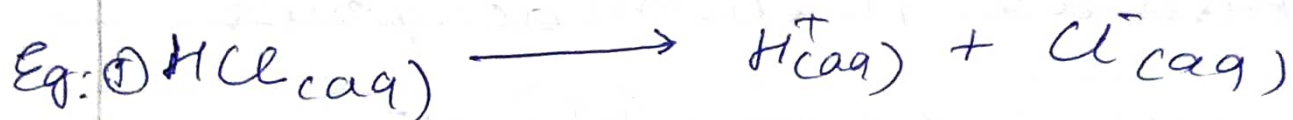


## HOME ASSIGNMENT

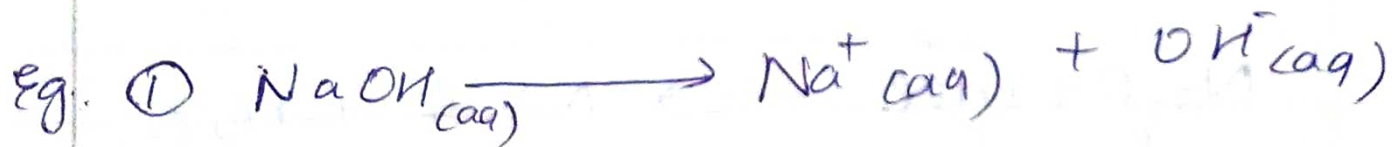
1. Distinguish between the concept of knowing acids and bases on basis of Arrhenius Theory & Lewis theory.

Ans \* According to Arrhenius theory,

- An acid is a substance which when dissolved in water, ionizes & releases  $[H^+(aq)]$  hydrogen ions / proton in sol<sup>n</sup>.



- A base is a substance that gives hydroxide or hydroxyl ions ( $OH^-$ ) in their aqueous sol<sup>n</sup>.



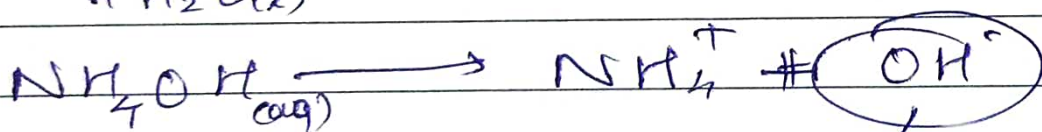
\* According to Lewis theory,

- An Acid is an electron acceptor.  
~~and is henceforth called as Lewis acid~~
- A base is an electron donor.

• ~~Eg: ⊕~~

2. Although  $\text{NH}_3$  doesn't contain any  $(\text{OH}^-)$  ions, it still behaves as a base <sup>Why?</sup>  
 Ans: \* Ammonia ( $\text{NH}_3$ ) when dissolved in water forms an aqueous sol<sup>n</sup> to form ammonium hydroxide.

\*  $\text{NH}_3$  readily ionizes to form  $(\text{NH}_4^+)$  ions &  $(\text{OH}^-)$  ions.



As,  $\text{OH}^-$  ions are released into aqueous sol<sup>n</sup>;  $\text{NH}_3$  is a base.

3. What is the Oxidation State of K-atom in  $\text{KMnO}_4$ ?

Ans. - Oxidation State of any Group-1 alkali metal is +1.

- So, O.S. of K-atom is also +1

Also; KMnO<sub>4</sub> → net charge on molecule is 0.

$$\text{So, } \underbrace{(x)}_{\text{for K}} + (+7) + (-2)(4) = 0$$

for K

$$\Rightarrow x + 7 - 8 = 0$$

$$\Rightarrow \underline{x = +1} \rightarrow \text{O.S. of } \underline{\text{K}} \text{ in } \text{KMnO}_4$$