In general $HA(aq) \rightleftharpoons H^+(aq) + A^-(aq)$

Bases :→ A base is a substance which contains hydroxyl group (-OH) and gives hydroxyl ions in water.

eg $NaOH(aq) \rightleftharpoons Na^+(aq) + OH^-(aq)$

$K-OH(aq) \rightleftharpoons K^+(aq) + OH^-(aq)$

$Ba(OH)_2(aq) \rightleftharpoons Ba^{++}(aq) + 2OH^-(aq)$

$NH_4OH(aq) \rightleftharpoons NH_4^+(aq) + OH^-$

$Al(OH)_3(aq) \rightleftharpoons Al^{3+} + 3OH^-(aq)$

In general $BOH(aq) \rightleftharpoons B^+(aq) + OH^-(aq)$

Limitations of Arrhenius Concept :→

(i) Limited scope → Arrhenius Concept is applicable to aqueous solution only. It does not explain the Acidic and basic behaviour of the substances in solvents other than water such as alcohol, liquid ammonia etc.

(ii) Inability to explain the acidic and basic behaviour of certain substances CO_2, SO_2, SO_3 etc are acids but do not contain H-atom. they produce H^+ ions in solution.
similarly NH_3, CaO, MgO are bases.

Bronsted-Lowry concept of acid and base

Bronsted-Lowry in 1923 modified the above definition of acids and bases. this theory is also known as protonic Concept. According to this concept -

Acid is a substance which has the tendency to give a proton (H^+) and a base is a substance which has the to accept a proton (H^+)

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