

Experiment No. 01

## Determination of Standard Electrode Potential and Verification of Nerst Equation.

**Aim:** To set up the Galvanic Cell and Record the Potential of the cell.

**Requirements:**

- i) Construct and write your Procedure.
- ii) Potential obtained in Volts.
- iii) Cell reactions and representation.

**Conclusion:** I -

II -

# PADRE CONCEICAO COLLEGE OF ENGINEERING

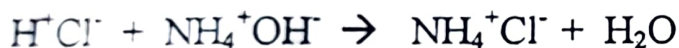
EXPERIMENT NO: 02

## CONDUCTOMETRIC TITRATION

**AIM:** To determine the conductance of strong acid (HCl), and weak base (NH<sub>4</sub>OH).

**REQUIREMENTS:** 0.1N NH<sub>4</sub>OH, 0.1N HCl, distilled water, pipette, burette, conductometer, conductivity cell.

**THEORY:** When a strong acid (HCl) is titrated against a weak base NH<sub>4</sub>OH



The conductivity first decreases because of the replacement of the H<sup>+</sup> ions by NH<sub>4</sub><sup>+</sup> ions. After the equivalence point is reached, further the addition of NH<sub>4</sub>OH does not change the resultant conductivity because NH<sub>4</sub>OH being a weak electrolyte, has a very small conductivity as compared with the HCl or NH<sub>4</sub>Cl.

**PROCEDURE:** Fill the burette with 0.1N NH<sub>4</sub>OH. Pipette out 10 ml of acid in the beaker and add 25 ml of distilled water. Dip the electrode in it. Add 0.5 ml of NH<sub>4</sub>OH solution from the burette, continue till 16 ml. Plot a graph of conductivity against volume of NH<sub>4</sub>OH added.

## OBSERVATION :

Volume of $\text{NH}_4\text{OH}$ added in (ml)	Conductivity	Volume of $\text{NH}_4\text{OH}$ added in (ml)	Conductivity
0.0	11.3	8.5	3.9
0.5	10.8	9.0	3.6
1.0	10.2	9.5	3.3
1.5	9.7	10.0	3.0
2.0	9.2	10.5	3.0
2.5	8.7	11.0	3.0
3.0	8.3	11.5	3.0
3.5	7.8	12.0	3.0
4.0	7.4	12.5	2.9
4.5	7.0	13.0	2.9
5.0	6.6	13.5	2.9
5.5	6.2	14.0	2.9
6.0	5.8	14.5	2.8
6.5	5.4	15.0	2.8
7.0	5.0	15.5	2.8
7.5	4.6	16.0	2.8
8.0	4.3		

RESULT: Volume of  $\text{NH}_4\text{OH}$  required for equivalence point = \_\_\_\_\_ ml.

