EXPERIIMENT NO:

pH METER

Aim: To determine the pH of different water samples.

Theory: The term pH refers to the measure of hydrogen ion concentration in a solution and it is defined as negative log of H^+ ion concentration in water.

$$pH = - \log [H^+]$$

The values of pH from 0 to less than 7 is acidic.

The values of pH from 7 to 14 is basic.

When the concentration of H^+ and OH^- ions are equal then it is termed as neutral pH

Principle: The electrode used in pH measurement is a combined glass electrode. It consists of sensing half cell and reference half cell, they together form a reference system. When the electrode is dipped in the solution whose pH is to be determined, an electrical potential is developed inside and another electrical potential is developed outside. The difference in the potential is measured and is given as pH of the sample.

Requirements: pH meter, beakers, filter paper, buffer solutions, (4, 7, 9.2 pH), distilled water and water samples.

Procedure:

1. Switch on the pH meter at least 30min before the test.
2. Prepare buffer solution of 4, 7, and 9.2 pH.
3. Calibrate pH meter using the above buffer solutions.
4. In a 100ml beaker take the first sample of water, immerse the electrode, wait for the reading to stabilize and note down the pH.
5. Accordingly take the readings of the other water samples.
6. Result will be the pH of the given sample.