

### THEORY

The theory of the present experiment is based on the fact that the rate of reaction between a metal and an acid is directly proportional to the concentration of the metal ions in the solution. The rate of reaction is measured by the volume of hydrogen gas evolved over a fixed period of time. The concentration of the metal ions is varied by using different concentrations of the metal salt solution. The rate of reaction is found to increase with an increase in the concentration of the metal ions. This is because the higher the concentration of the metal ions, the more collisions there will be between the metal ions and the acid molecules, leading to a faster rate of reaction.

### PROCEDURE

1. Preparation of standard solution of metal ions: Weigh a precise amount of the metal salt and dissolve it in a known volume of distilled water in a volumetric flask to make a known volume. This solution is then used to prepare a series of solutions of different concentrations by diluting with distilled water.

2. Measurement of the rate of reaction: A fixed volume of the metal salt solution of a known concentration is placed in a reaction flask. A fixed volume of an acid of known concentration is added to the reaction flask. The reaction is allowed to proceed for a fixed period of time. The volume of hydrogen gas evolved is measured by the displacement of water in a gas jar.

RESULTS

### EXPERIMENT

