Dissolution Test Apparatus

Principle:
Measures the **rate and extent of dissolution** of solid dosage forms in a specified dissolution medium under controlled temperature and agitation, as per **pharmacopoeial standards**.

Apparatus Type:
- **USP Type I – Basket**
- **USP Type II – Paddle**

Temperature: 37 ± 0.5 °C
Speed: ___ rpm (as per method)
Medium Volume: 500–1000 mL

Standard Operating Procedure (SOP)

1. Pre-Operation

- Clean and assemble vessels, paddles/baskets
- Fill vessels with required dissolution medium
- Switch ON heater and set temperature to **37 °C**
- Allow temperature stabilization

2. Apparatus Setup

- Fix paddles or baskets at specified height
- Set required **rpm**
- Remove air bubbles from paddles/baskets

3. Sample Introduction

- Place tablet/capsule into each vessel simultaneously
- Start rotation and timer immediately

4. Sampling

- Withdraw sample at specified time intervals
- Filter sample if required
- Replace withdrawn volume with fresh medium at 37 °C

5. Analysis

- Analyze samples using UV–Vis / HPLC
- Calculate % drug dissolved

6. Completion & Shutdown

- Stop rotation and heater
- Discard medium
- Clean vessels and accessories
- Switch OFF instrument

Applications

- Quality control of tablets and capsules
- Bioavailability studies
- Formulation development
- Research & teaching laboratories

Precautions

- Maintain constant temperature
- Avoid air bubbles
- Ensure proper alignment of paddles/baskets
- Follow pharmacopoeial method strictly