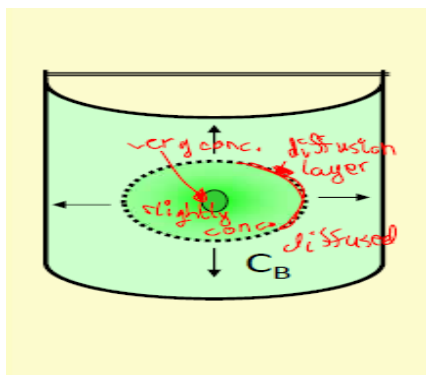
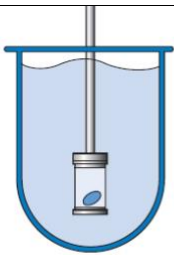




- **Fick's Law:**
 - The rate of transfer of a solute through a diffusion layer is proportional to the surface area and the concentration gradient between the two sides and inversely proportional to the thickness of the diffusion layer
- Diffusion is the net movement of molecules or atoms from a region of high concentration to a region of low concentration. In the process of dissolution, the particles of the solute diffuse into an area of lower concentration; in other words, they diffuse into the solute around them. This corresponds with Fick's Law, which states that the rate of change of concentration at a point in space is proportional to the second derivative of concentration with space.
- 4. **Specifically:**
 - a. **Differentiate between sink, non-sink and essential sink conditions during dissolution tests**
 - Sink condition: the condition in which equilibrium is reached between solute going out and in (can be explained using the sink analogy of you unplug a sink and turn on the tap, when the amount of water entering and leaving the sink are the same sink condition has been reached)
 - Non-sink conditions: equilibrium is shifted either way
 - Essential sink conditions: occur when C_B is equal to 10% of C_S
 - b. **Be familiar with the running of drug dissolution analysis which is one of quality control test for solid dosage forms, including the types of dissolution apparatus used**

Name	Apparatus	Diagrams
Basket	• Dosage form is placed inside a rotating basket made of a stainless steel wire mesh and immersed in dissolution medium at 37°C • Basket rotates at a constant speed (between 50 and 100 rpm) • Dissolution medium contained in a glass cylindrical vessel with a spherical bottom and with a nominal capacity of no less than 1 L • Manual medium change	 Fig. 35.4 • Basket apparatus (USP Apparatus 1).