



## Unit - I

### Solubility of drugs

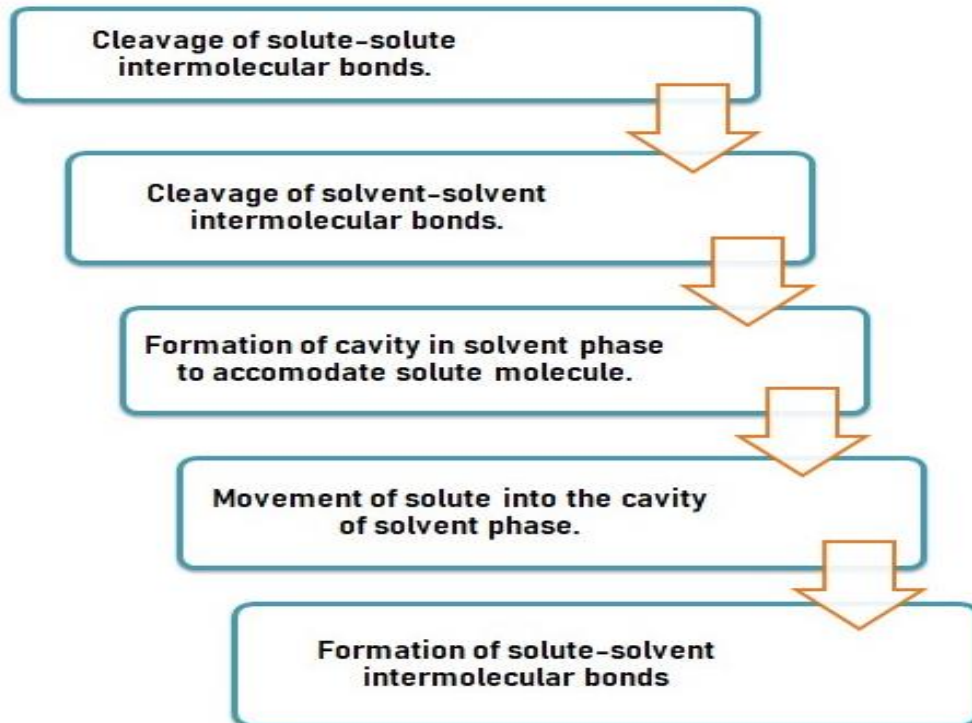
#### Interaction in solution:

Three types of interaction take place in the solution:

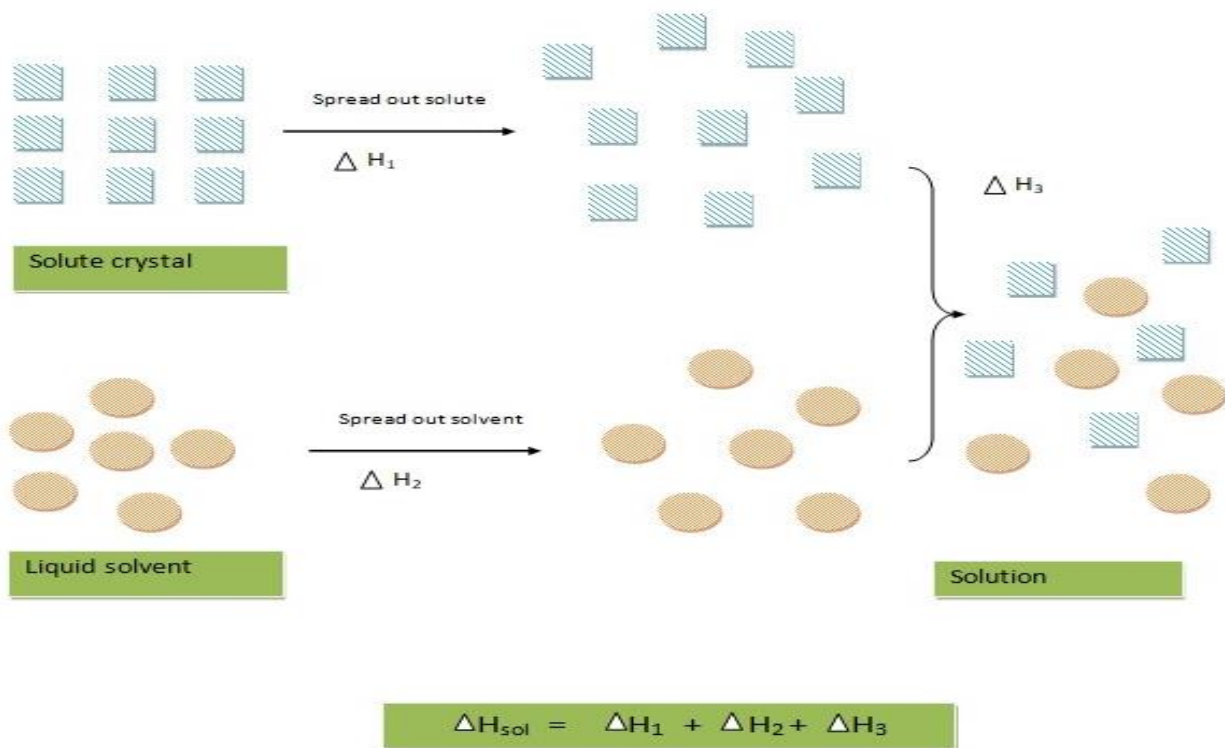
- ❖ Solvent- solvent interaction
- ❖ Solute-solvent interaction
- ❖ Solvent-solute interaction

#### Mechanism of solute -solvent interaction:

- ✓ The solubility of the solute in the solvent depends upon **nature of solvent** (polar/non-polar).
- ✓ Also **depends on chemical, electrical and structural properties** that cause mutual interaction between the solute and the solvent.
- ✓ The solubility of drug is due to **polarity of solvent** i.e dipole moment.
- ✓ Non-polar compounds can dissolve non-polar solutes with the similar internal pressures through induced dipole interactions.



### Mechanism of solute- solvent interaction



Here  $\Delta H_{sol}$  = Enthalpy of solution.

- ✓ The enthalpy change refers to the overall amount of heat which is released/ absorbed during dissolving process at constant temperature.
- ✓ The Enthalpy of a solution may be positive (endothermic reaction) or negative (exothermic reaction).