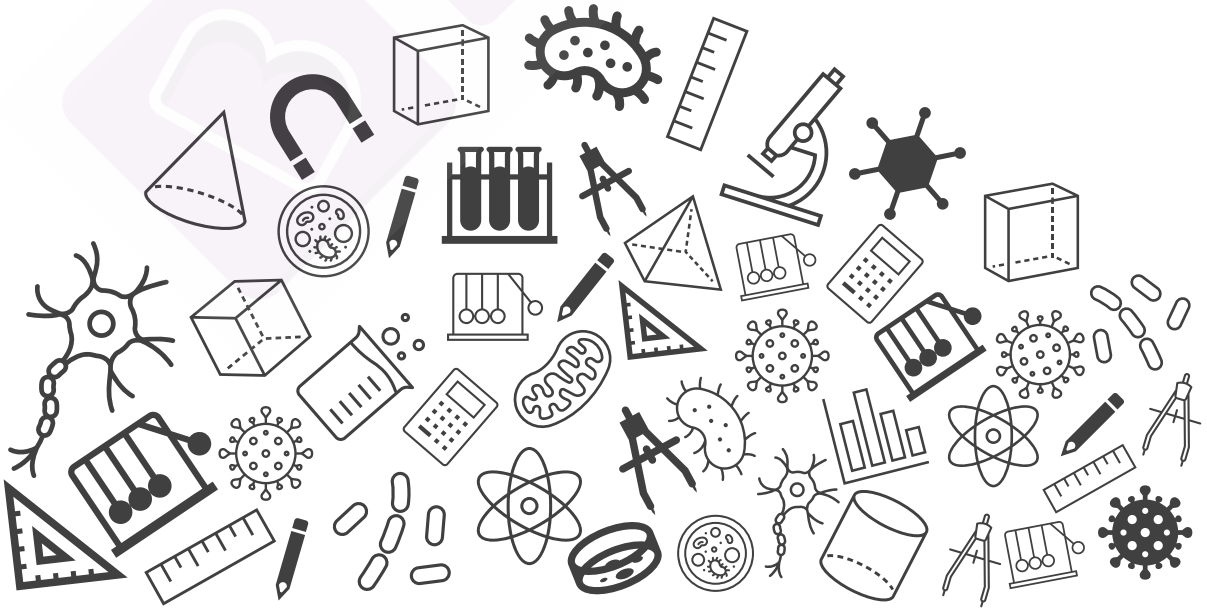
# Grade 06
## Chapter Notes

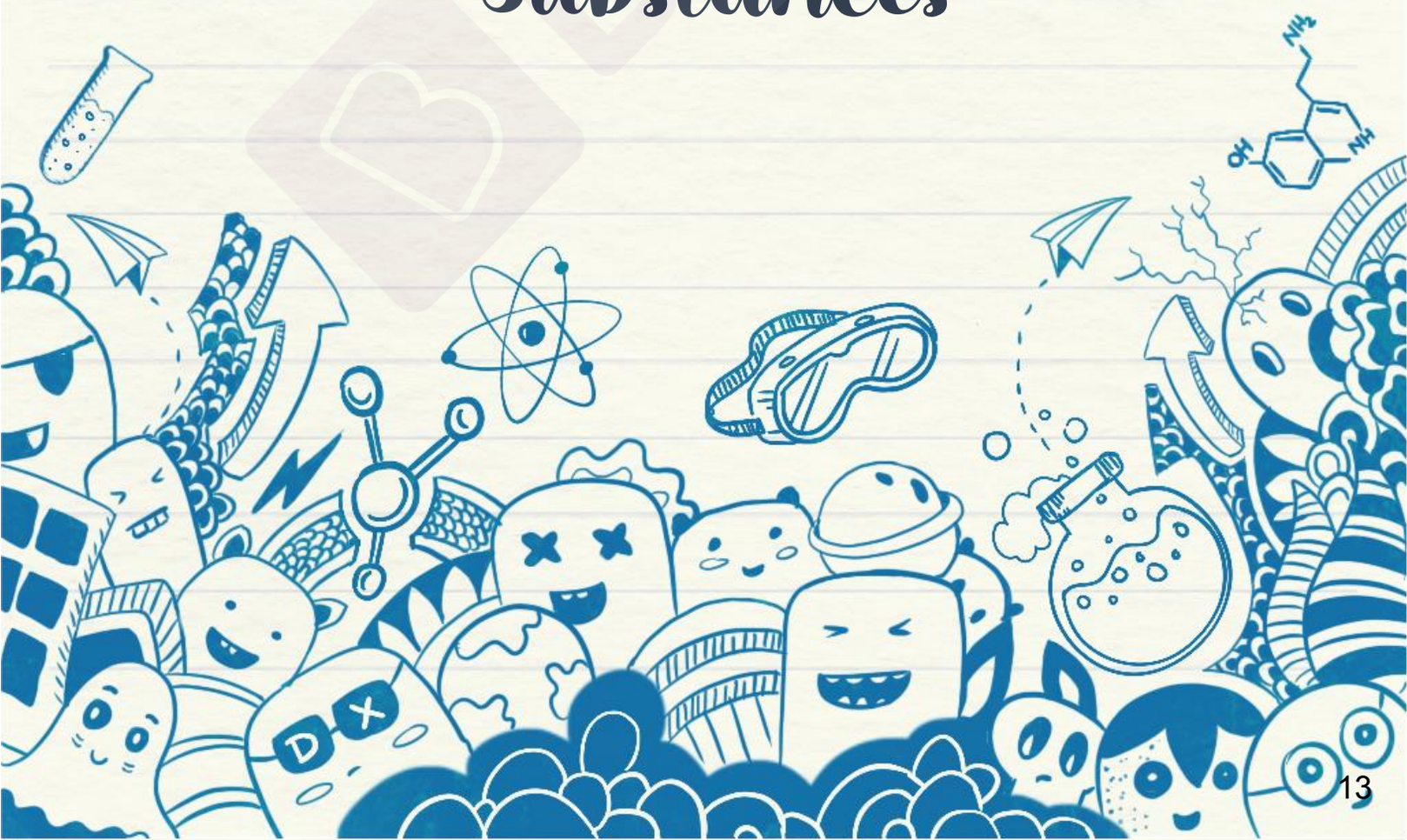


CHEMISTRY

BYJU'S

CHAPTER NOTES

# Separation of Substances



# 1. Need for Separation

To obtain two or more different but useful components

To remove non-useful components

To remove harmful impurities.

**Mixture**

A combination of two or more different kinds of substances.
Examples: Chalk powder and salt, oil and water, sand and water

# 2. Methods of Separation

## 2.1. Separation of solid-solid mixtures

### 2.1.1 Handpicking

Used when:

- One of the component is present in a relatively smaller quantity
- One of the components differs in shape, size, or colour

### 2.1.2 Sieving

- Used to separate different sized components of a mixture using a sieve
- Can be used to separate stones from flour

# 2. Methods of Separation

## 2.1. Separation of solid-solid mixtures

### 2.1.3 Threshing

- Used to separate grains from the stalk by beating them
- Used when impurities are weakly attached to the desired substance

### 2.1.4 Winnowing

- Used when the impurities are much lighter than the desired substance such that it can be blown away by the wind.
- Can be used to separate husks from grains

# 2. Methods of Separation

## 2.2 Separation of solid-liquid mixtures

### 2.2.1 Sedimentation and decantation

- Can be used to separate those solid-liquid mixtures in which the solids are insoluble in the liquid
- Can be used to separate a mixture of sand and water or chalk powder and water

**Sedimentation**

Process of settling down of heavier insoluble component of a mixture

**Decantation**

Process of transferring the clear liquid without disturbing the sediments

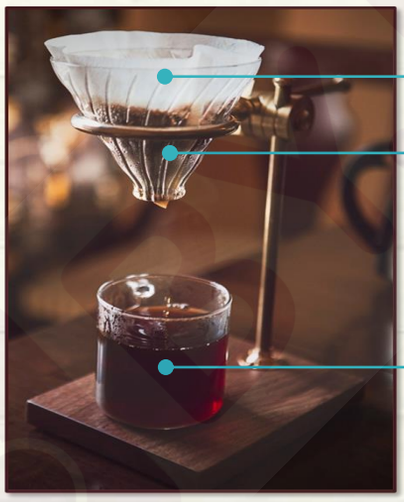
Sedimentation and decantation can also be used to separate a mixture of two immiscible liquids such as oil and water.

# 2. Methods of Separation

## 2.2 Separation of solid-liquid mixtures

### 2.2.2 Filtration

- Can be used as an alternative to sedimentation and decantation
- Can be used to separate those solid-liquid mixtures in which solids are insoluble in the liquids using a filter medium




Filtration as well as sedimentation and decantation cannot be used to separate solids that are soluble in the liquids (for example, salt and water).

# 2. Methods of Separation

## 2. 2 Separation of solid-liquid mixtures

### 2.2.3 Evaporation and condensation

- Can be used to separate soluble and insoluble solids from the liquids
- Example: A mixture of salt and water and a mixture of sand and water can be separated using evaporation and condensation.

**Evaporation**
The process of conversion of water into its vapour

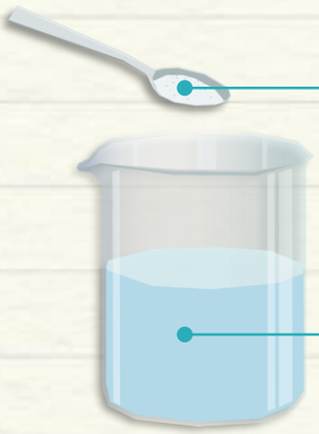
**Condensation**
The process of conversion of water vapour into water

Common salt is obtained by evaporation of seawater.
Separation of certain mixtures requires more than one separation technique.

# 3. Solutions

## 3.1 Solution

- A solution is a mixture that has two components – solute and solvent.



**Solute**
Present in smaller quantity

**Solvent**
Present in greater quantity

## 3.2. Saturated and Unsaturated Solution

### Saturated solution

A solution in which no more solute can be dissolved at a given temperature

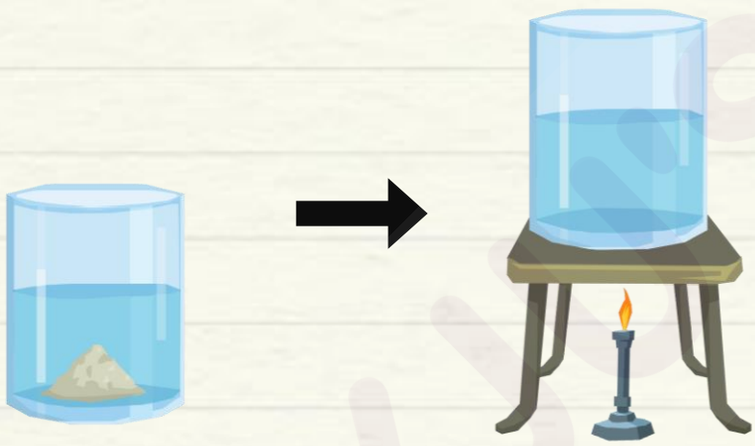
### Unsaturated solution

A solution in which more solute can be dissolved at a given temperature

# 3. Solutions

## 3.3. Effect of temperature on saturated solutions

- When the temperature is increased, more solute particles can dissolve in the solvent and makes the saturated solution unsaturated.

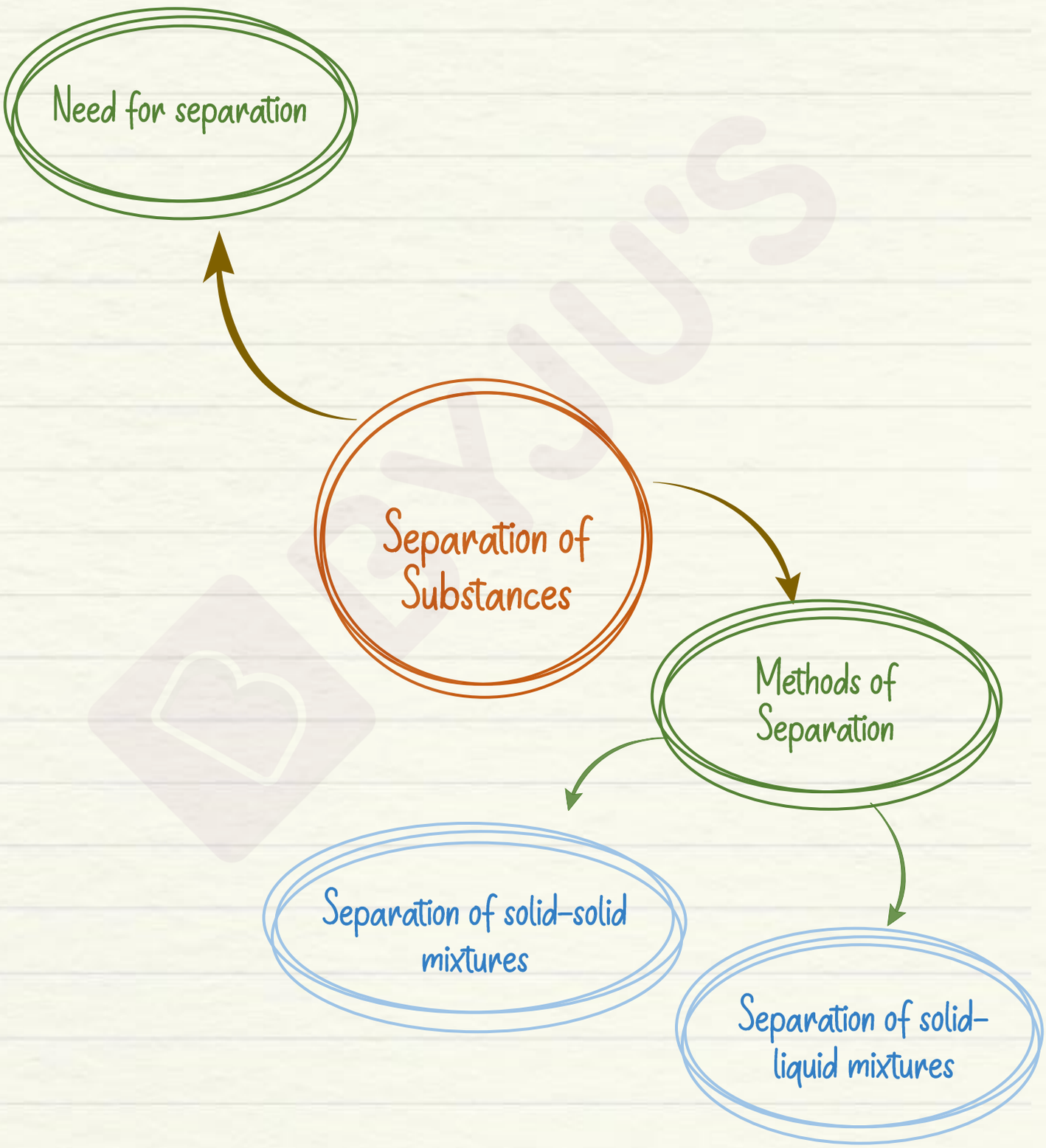


The maximum amount of solute that can be dissolved in a fixed quantity of a solvent increases with the increase in the temperature.

A saturated solution can be made an unsaturated solution by adding more solvent to a solution or by increasing the temperature.

The maximum amount of solute that can be dissolved in a fixed amount of solvent at a given temperature is different for different solutes.

# Mind Map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