مدرسة جيه اس اس الخاصة
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Lesson 3. Metals and Non metals Date: 07/06/2020.

Asynchronous Learning

1. Compare any 2 different type of extraction of metals.

Extraction of Copper	Extraction of zinc.
- The method of roasting that is using limited oxygen. - Reaction: $2Cu_2S + 3O_2 \xrightarrow{\text{roasting}} 2Cu_2O + 2SO_2$ ↓ $Cu_2S + 2Cu_2O \longrightarrow 6Cu + SO_2$	- The method depends on the ore: if it is a sulphide ore: roasting will be done if it is a carbonate ore: cancillation will be done. → For sulphide ore: $ZnS + 3O_2 \xrightarrow[\text{roasting}]{\Delta} 2ZnO + 2SO_2$ → For carbonate ore: $ZnCO_3 \xrightarrow[\text{cancillation}]{\Delta} ZnO + SO_2$ → From any of the processes above, the product ZnO is taken out and is added, to form a reaction, with coke. It gives out zinc and carbon monoxide. $Zn + C \longrightarrow Zn + CO$ ↓ coke

2. Write a short note on: (i) crystallization
(ii) deliquescence
(iii) dissolving
and their changes on heating

(i) Water of crystillization:

- Water of crystillization are the molecules of water absorbed by the anhydrous crystals which are included in its crystalline structure. These water molecules are responsible for emitting certain wavelengths of white light and depict white light.
- It is the fixed number of water molecules present in one formula unit of salt.
- When a hydrated compound is heated, it loses water of crystallization and it becomes anhydrous.

(ii) Deliquescence:

- Some substances have tendency to absorb water molecules from atmosphese to become hydrated. Such substances are known as deliquescent. They are stored in airtight containers and in a dry place. Most of these substances are salts.
  eg: NaOH, CH_3COONH, AlCl etc.....
- For example, when aqueous NaOH is heated, the solvent water will evaporate and crystals of NaOH will begin to form in the saturated solution.

(iii) Dissolving:

- The process when a solute is mixed with a solvent to form a solution. The solute can be in any state: solid, liquid and gas.
- The reaction on heating a solution depends on the type of solution and its nature

  For example: - If a solution of salt and water is heated, the water will evaporate.
  - If a saturated solution is heated, it becomes capable of dissolving more solute.