

12.12.19

# CHAPTER-1 ELECTROLYTIC PROCESS

## ELECTROLYTE

It is a substance which get dissolved into ions when electric current will flow through it.

## ELECTROLYTIC PROCESS

→ The process of Utilization of Electrical Energy & Fraction of electrolyte by the passage of electric current is called electrolytic process

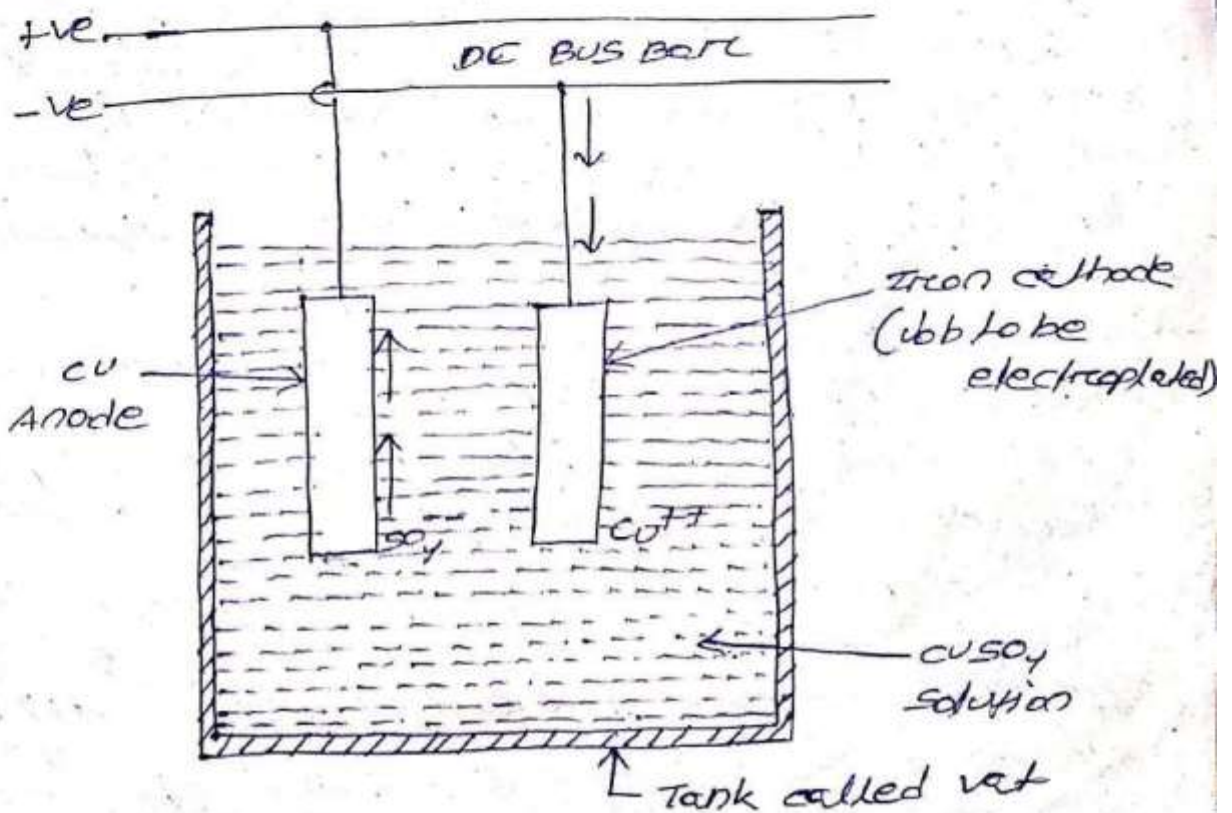
## ELECTRO DEPOSITION / ELECTRO PLATING

→ The process of deposition of metal over the surface of another metal by the process of electrolysis is called electro deposition or electro plating.

## NEED OF ELECTROPLATING

- To protect the metal against corrosion.
- To give shining appearance to a metal
- To repair a damage casting etc.

## PRINCIPLE:



Here two electrodes are taken and are connected to a DC power supply. The electrolyte is taken between the two electrodes. The electrolyte is copper sulphate solution.

Here the case of iron ring and copper plate. In this case the electrolyte is copper sulphate ( $\text{CuSO}_4$ ), which dissociates into  $\text{Cu}^{2+}$  and  $\text{SO}_4^{2-}$ .

The iron ring which is to be coated is taken as cathode and the copper plate is taken as anode.

The positive  $\text{Cu}^{2+}$  ions will attract the copper anode to form  $\text{Cu}^{2+}$  ions. These ions again dissociate in water to maintain the electrolyte concentration.

The positive  $\text{Cu}^{2+}$  ion will move towards cathode and receives two no. of electrons from the supply to form Cu atom. These Cu atoms get deposited on the iron ring.

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→ This phenomenon of deposition of metallic copper on the iron ring is called electroplating. The electrolyte used is copper sulphate solution. The iron ring is connected to the negative terminal of the DC power supply and the copper plate is connected to the positive terminal.

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