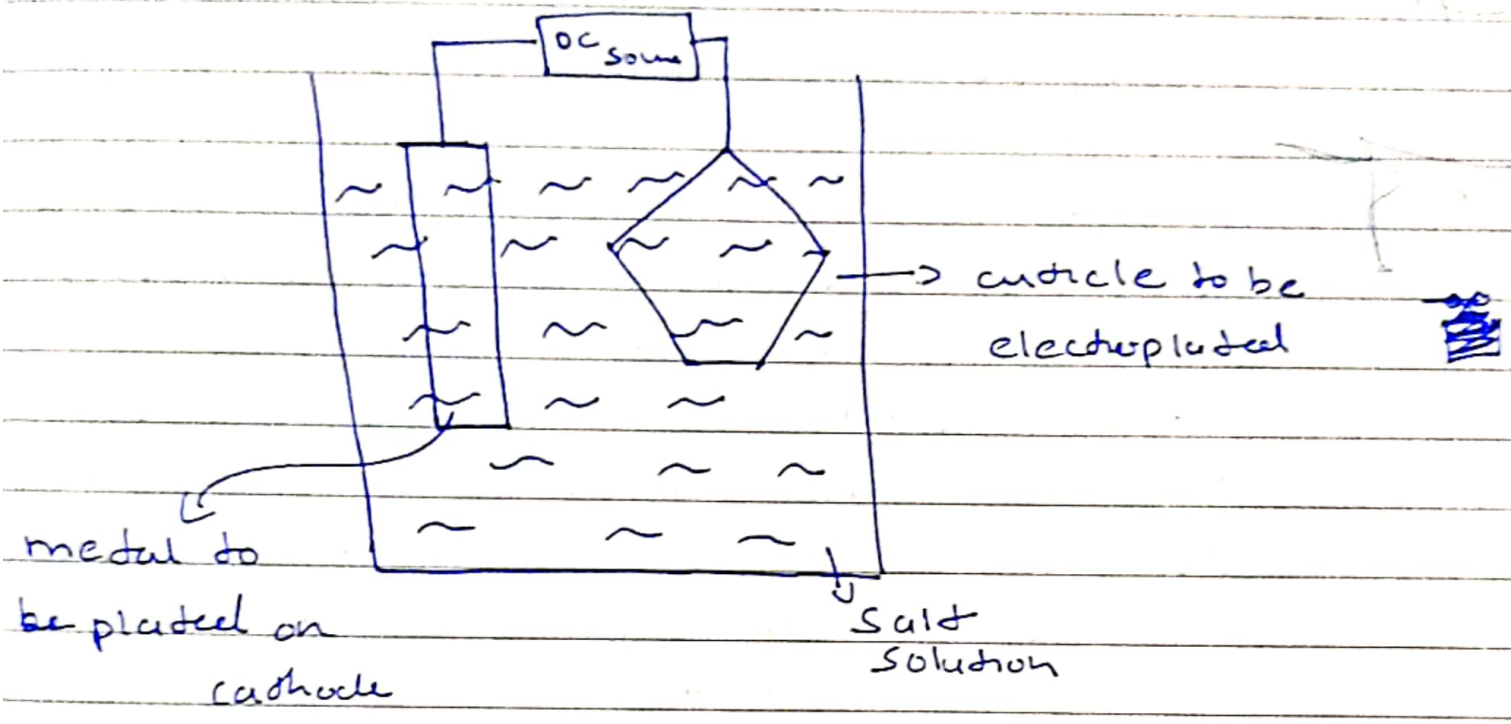
Electroplating :



Electroplating is a process by which the coating metal is deposited on the base metal by passing direct current through the electrolytic solution containing the soluble salt of the coating metal.

The article to be electroplated is first treated with organic solvent to remove any grease or oil. It is then treated with dilute HCl or H_2SO_4 to remove any scales or oxide layer. The clean article is made the cathode of the electrolytic cell. The anode is either the coating metal or an inert material like graphite. The electrolyte is a solution of a soluble salt of the coating metal. The electrolytic solution is kept in an electroplating tank, where anode & cathode is dipped. When

direct current is passed, coating metal ions migrate to the cathode and get deposited there. Thus a thin layer of coating metal is obtained on the article made as the cathode

Electroplating of Chromium

The article to be coated with chromium is first given an undercoat of copper or nickel, because chromium plating is porous and non adherent. Chromium anodes are not employed because they become passive in acid medium and also form a black deposit on articles. This is because chromium anodes yield large concentration of chromium ion.

Plating bath : Chromic acid + H_2SO_4 [100:1]

Operating temp. : 40°-50°C

Current : 100-200 mA/cm2

Anode : Lead (92%) and antimony alloy.

Cathode : Article to be plated