

## Unit - 3 : Geothermal Energy, MHD & Fuel Cells

### \* Hot Water Fields →

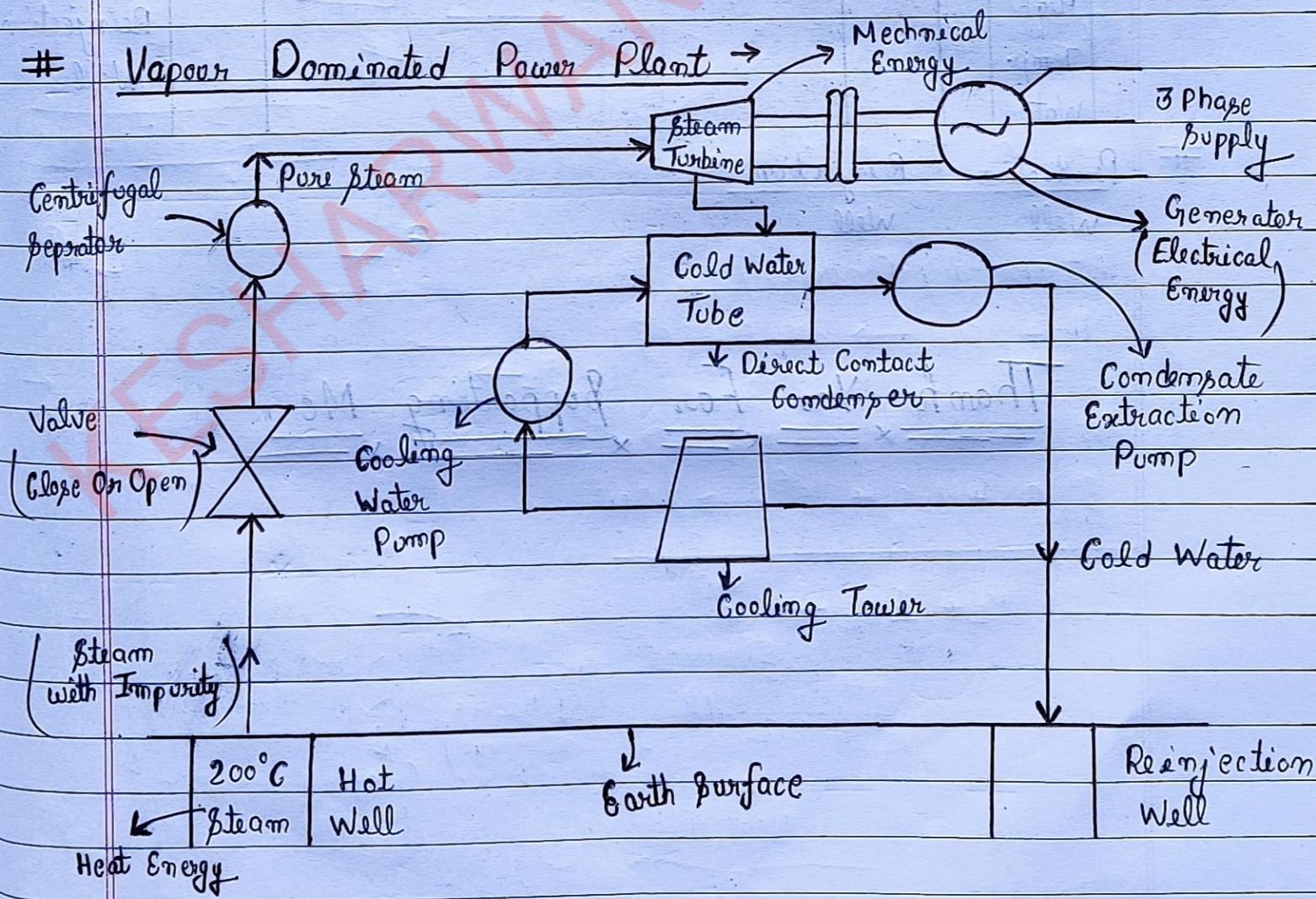
1. It contains a water reservoir at temperature ranging  $50-100^{\circ}\text{C}$ .
2. Such fields without much steam content can be useful for House Heating & Agricultural purpose.
3. The reservoir contains water in the liquid phase.
4. These fields occur at depth less than 2 Km.
5. The Geyser Plant of USA is largest plant in world today.

### \* Wet Steam Fields →

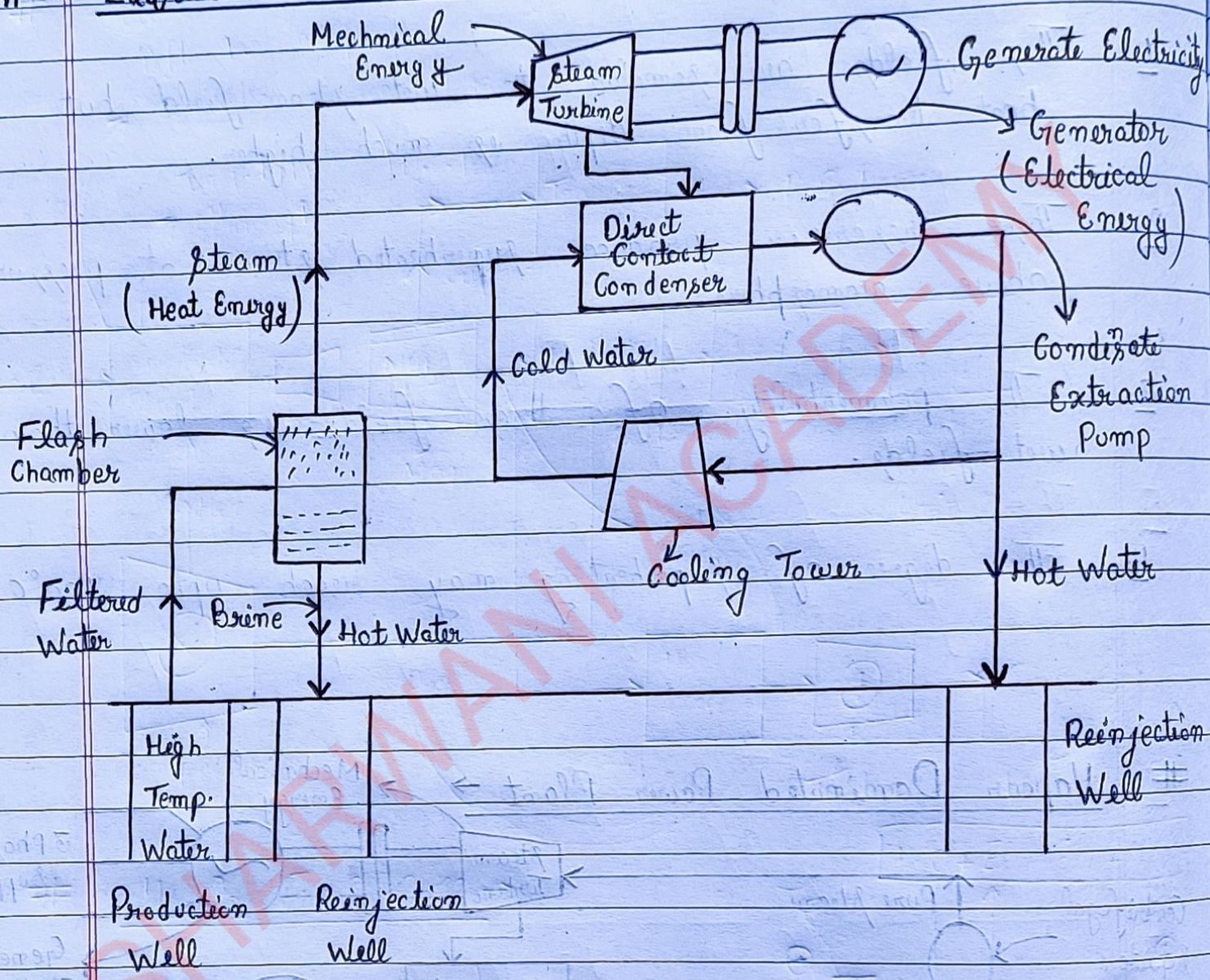
1. The wet steam fields contains pressurized water in reservoir at temperature higher than  $100^{\circ}\text{C}$ .
2. When hot water at high pressure is brought to surface, its pressure is sufficiently reduced & some water will get flashed in steam & remaining in form of boiling water.
3. The resulting mixture is mixture of water & steam. Such fields are suitable for power generation (Electricity).
4. Vapour is used for producing power while the hot water is used for Thermal Applications.

## \* Dry Steam Fields →

1. These fields are similar to wet steam field but heat transfer from depth is much higher.
2. These reservoir produce superheated steam at pressure above atmosphere.
3. The permeability of these fields is lower than wet fields.
4. The degree of superheating may reach upto  $100^{\circ}\text{C}$ .



## # Liquid Dominated Power Plant →

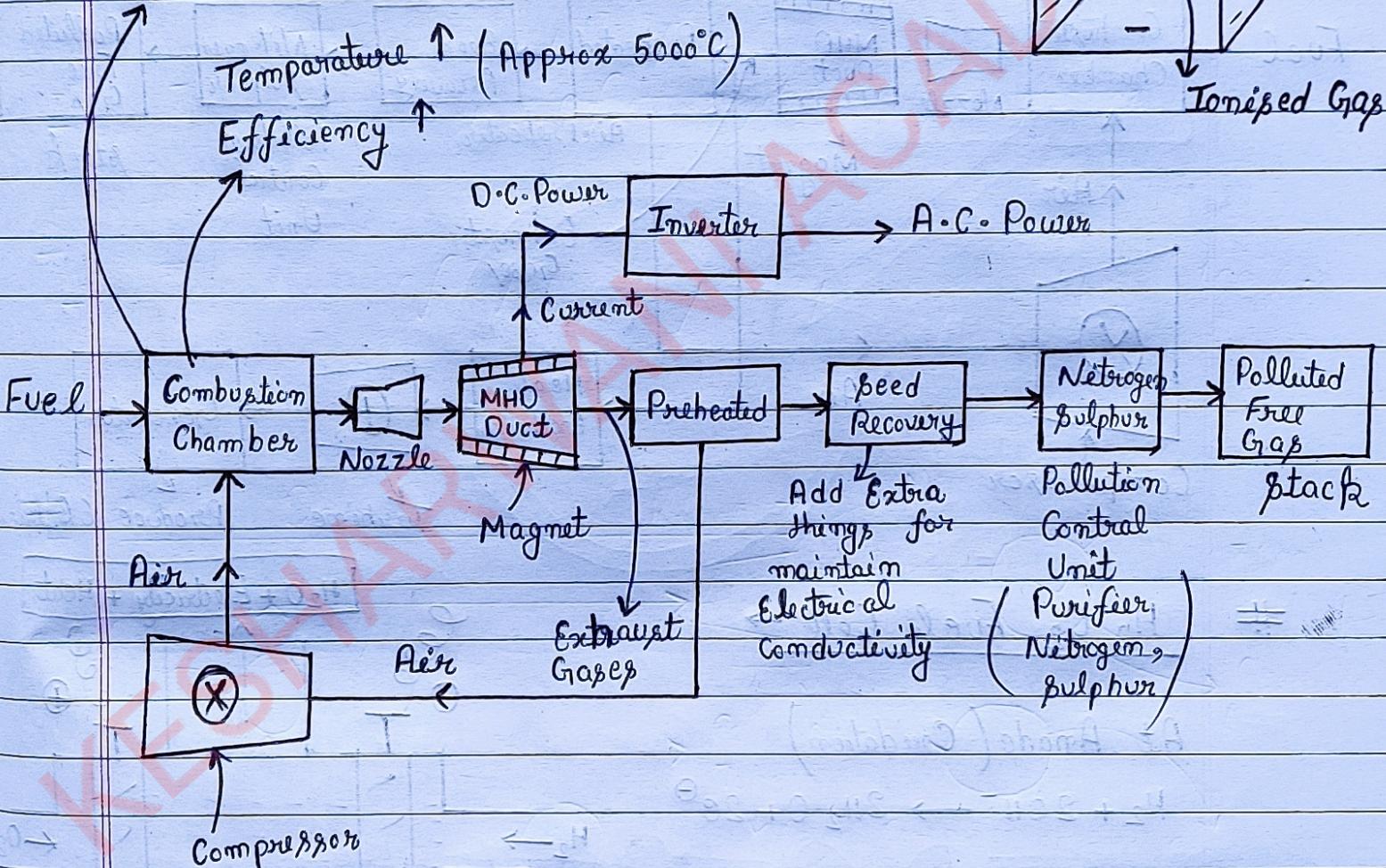
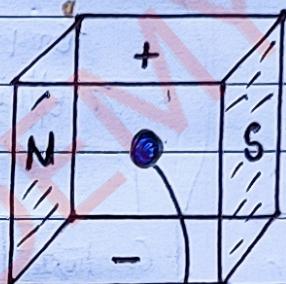


Thank You For Supporting Me

# # Open Cycle MHD System →

## MHD Principle

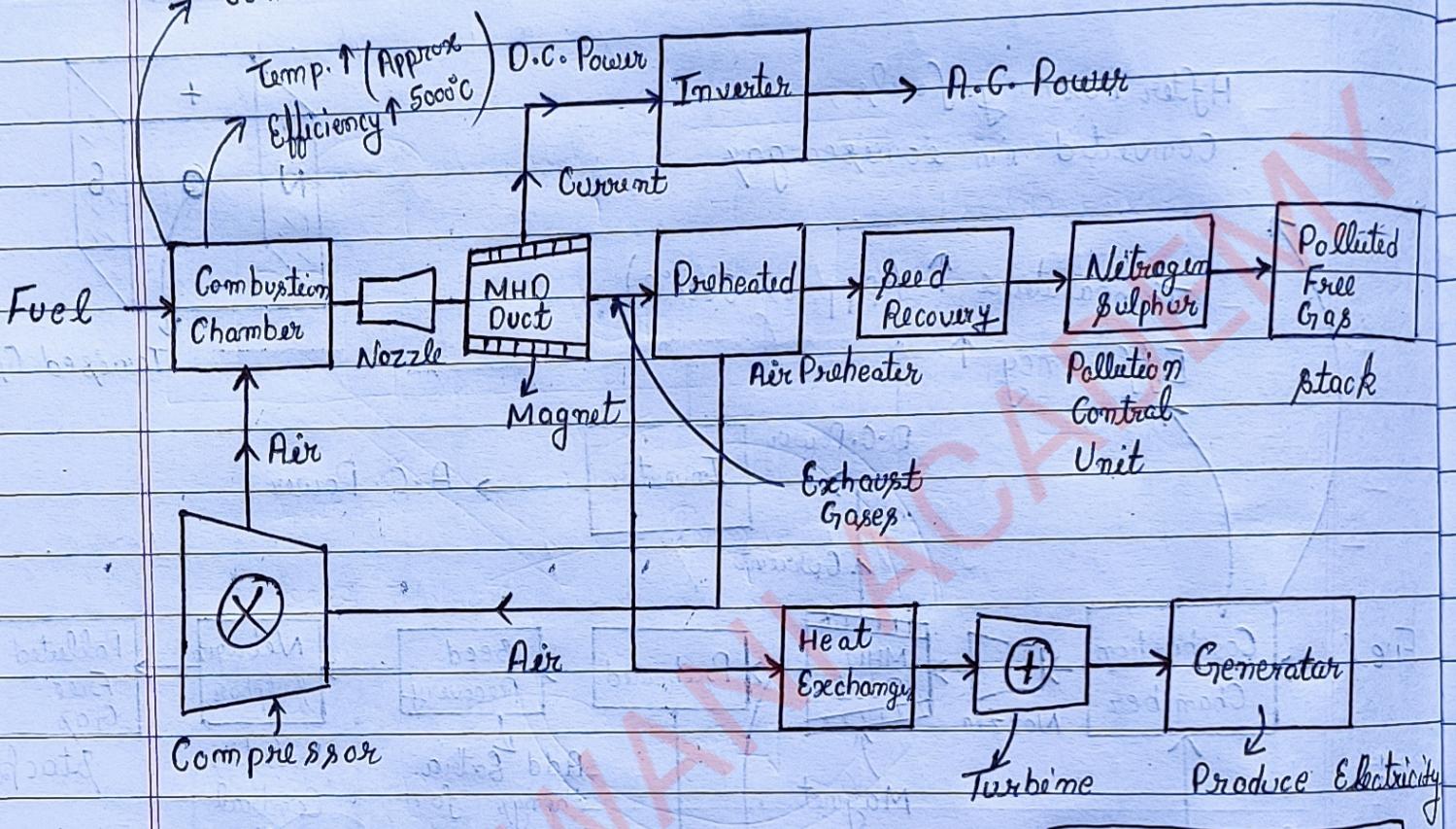
After burning fuel,  
converted in ionised gas



\* Hand written Notes By Aditya Kesharwani

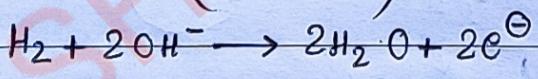
## # Closed Cycle MHD System

After burning fuel,  
converted in ionized gas



## # $H_2 O_2$ Fuel Cell

At Anode (Oxidation)



At Cathode (Reduction)

