[Unit-04]

[Answer No.-04(a)]

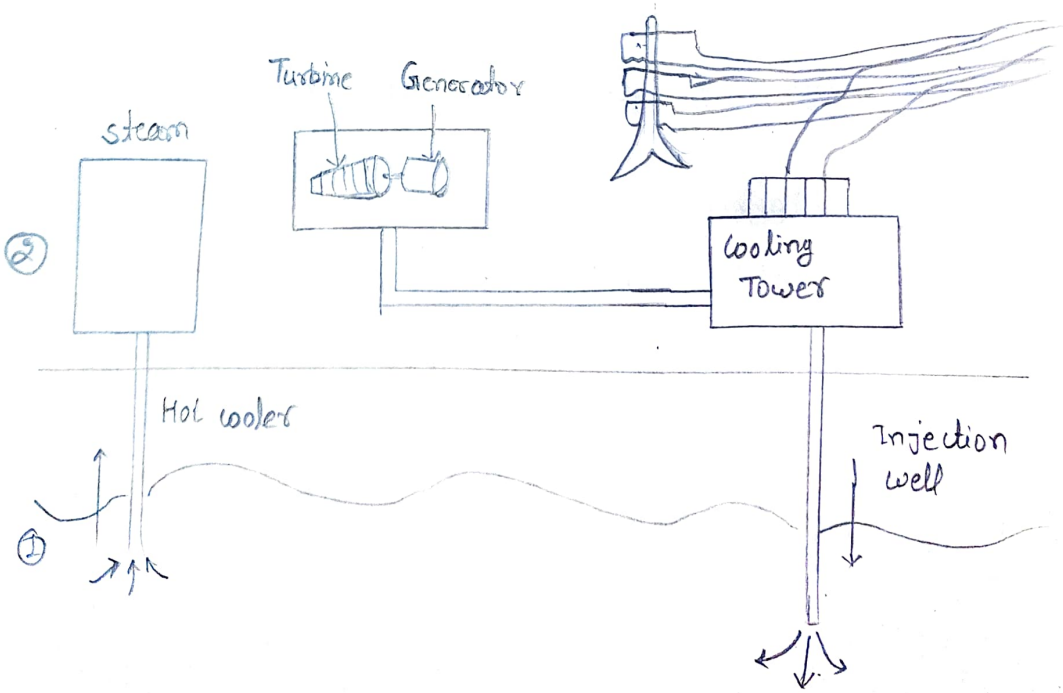
Different sources of GEO thermal energy :-

① Hydrothermal convective system
   ⓐ vapour dominated or any steam fields
   ⓑ liquid dominated system
   ⓒ Hot water field
② Geopressure resources
③ Petro-thermal or Hot dry rocks
④ magma sources
⑤ volcanels

[Answer No.-04(b)]

Geothermal Power plant :- At a geothermal power plant, wells are drilled 1 or 2 miles deep into the earth to pump steam or hot water to surface.

This type of power plant in liquid is an area that has a lot of heat springs, gaseous or volenic acitivity, becauses there are places where the earth is particularly hot just below the surface.



Working of geothermal power plant :-

① Hot water is pumped from deep underground through a well under high pressure.

② When the water reaches the surface, the pressure is dropped which causes the water to turn into steam.

③ The steam spring turbine, which is connected to a generator that procedures electricity.

④ The steam cools off in a cooling tower and condenses back to water.

⑤ The cooled water is pumped back into the earth to begin the process again.

Types of Geothermal power plant :-

(a) Direct Dry Steam :- Steam plants use hydrothermal fluids that are primarily steam, The steam goes directly to a turbine which drives a generator that producers electricity.

(b) Flash and double flash cycle :-

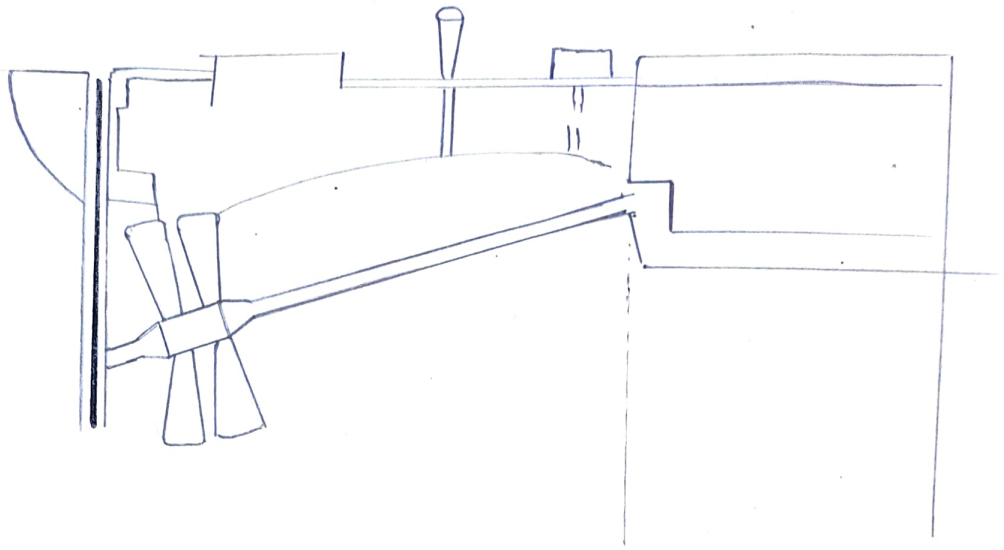
Hydrothermal fluids above 360°F can be used in flash plants to make electricity.

(c) Binary cycle :-

most geothermal areas contains moderate temperature water (below 400°F), energy is extracted from there fluids in binary cycle power plants.

most geothermal power plant in future will be binary cycle power plant.

(Answer NO- 04 (c))



The main components of a tidal power plant is are shown in above figure:-

① Barrage (Dam of low level):- The function of dam is to form a barrier between sea and barrier.

② Sluice ways for filling:- There are gate controlled devices, They are used to fill basin during the high tide or empty the basin during low tide.

③ Basin
④ Duct
⑤ Turbine
⑥ Generator units

Turbine and generator are ~~high~~ main components of power house.

Operation of plant :-

Turbine installed in barrage walls generate power as water flow in and out of country basin, when tide fails water behind the barrage is held in the estuary the water is then released, flowing, several turning a turbine and generator which creates electricity.

Later when the fields rises, it will be held back in the barrage is held the reservoir, the water in then released flowing back into esclosing flowing through another turbine and allowing the electricity producing problem be repeated.