Section 6

* Solar flate plate collector 6→

→ A solar thermal collectors are special kind of heat exchangers that tranforms solar Radiation Energy to internal Energy of the Transport medium.

→ The major component of any solar System is the solar collectors.

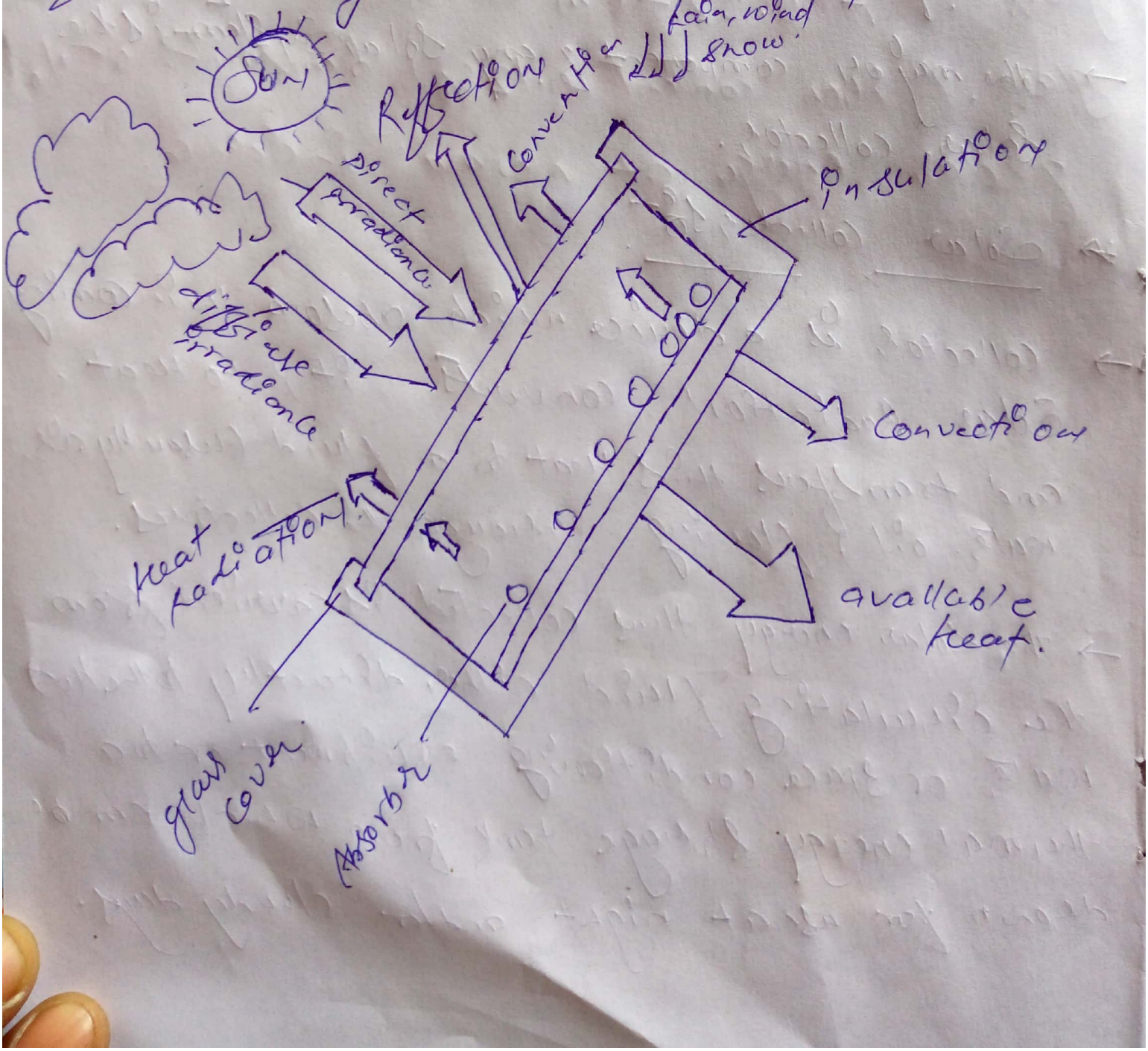
** Solar Collectors is-

→ Collector is a device which absorb the incoming Solar Radiation, convert it into heat, and transfers this heat to a fluid (usually air, water, oil) flowing through the collectors.

→ The solar energy thus collected is carried from the circulating fluid either directly to the hot water or space conditioning equipment or to a thermal energy storage tank from which can be drawn for use at night and/or cloudy days.

* performance of flate plate collector

→ The performance of a flate plate solar collector with thin absorber is studied. the Temperature of the absorber and its variation along the local day time is obtained by solving a heat balance equation. the temperature of the working is also estimated.



* material is used for solar flat plate collector ?

→ A cover plate for a collector should have a high transmittance for solar radiation and should not deteriorate with time.

→ The material most commonly used is glass. A 0.32-cm thick sheet of window glass (iron content, 0.12%) transmits 85% of solar energy at normal incidence.