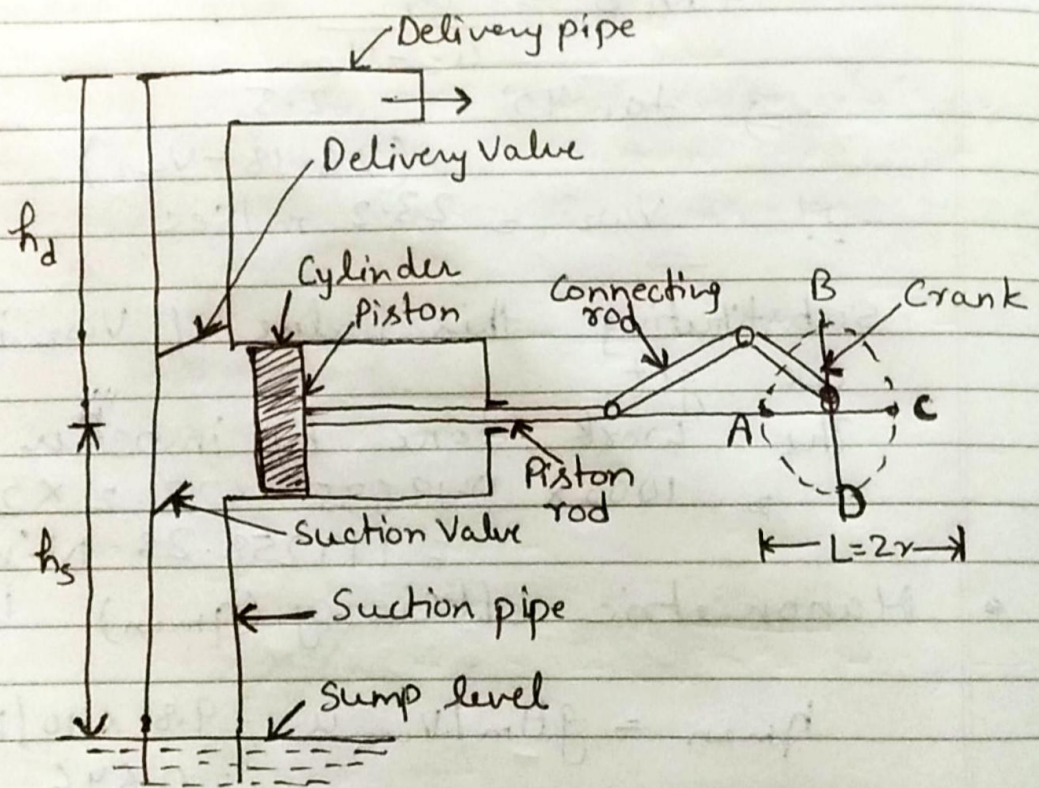


Section-5

Ans-1 Reciprocating pump: If mechanical energy is converted into pressure energy by means of reciprocating motion of a piston into a cylinder, then pump is known as reciprocating pump.

Components: Main parts of a reciprocating pump are:

- (i) Cylinder with piston, piston rod, connecting rod and a crank.
- (ii) Suction pipe.
- (iii) Delivery pipe.
- (iv) Suction Valve
- (v) Delivery Valve



Main parts of a reciprocating pump.

Working Principle:

- (i) A reciprocating pump consists of a piston or a plunger executing reciprocating motion inside a cylinder.
- (ii) As the crank moves outwards (from A to C) the piston moves towards right in the cylinder causing a vacuum in the cylinder.
- (iii) Due to the pressure difference between the sump and the cylinder, liquid is drawn into the cylinder through the non-return suction valve.
- (iv) During this outward stroke, the delivery valve remains closed.
- (v) During the return stroke of the crank (from C to A), the piston moves towards the left causing an increase in pressure in the cylinder which ~~toward~~ opens the delivery valve and closes the inlet valve.
- (vi) The liquid is forced into delivery pipe and is raised to a required height.