Falling sphere viscometer

The principle is based on hopplers viscometer.

⇒ The apparatus consist of glass tube positioned vertically.

⇒ A constant temperature jacket with continuous water circulation arranged around the glass tube.

→ The test liquid is placed inside the glass chamber.

→ A glass or steel ball is dropped into the liquid and allowed to reach equilibrium with the temperature of the outer jacket.

⇒ The time taken for the ball to fall between 2 points which accurately measured.

⇒ The procedure is repeated several time to obtain concurrent result.

→ The viscosity of newtonian liquid can be expressed as,

$$\eta_1 = t(s_b - s_f)B$$

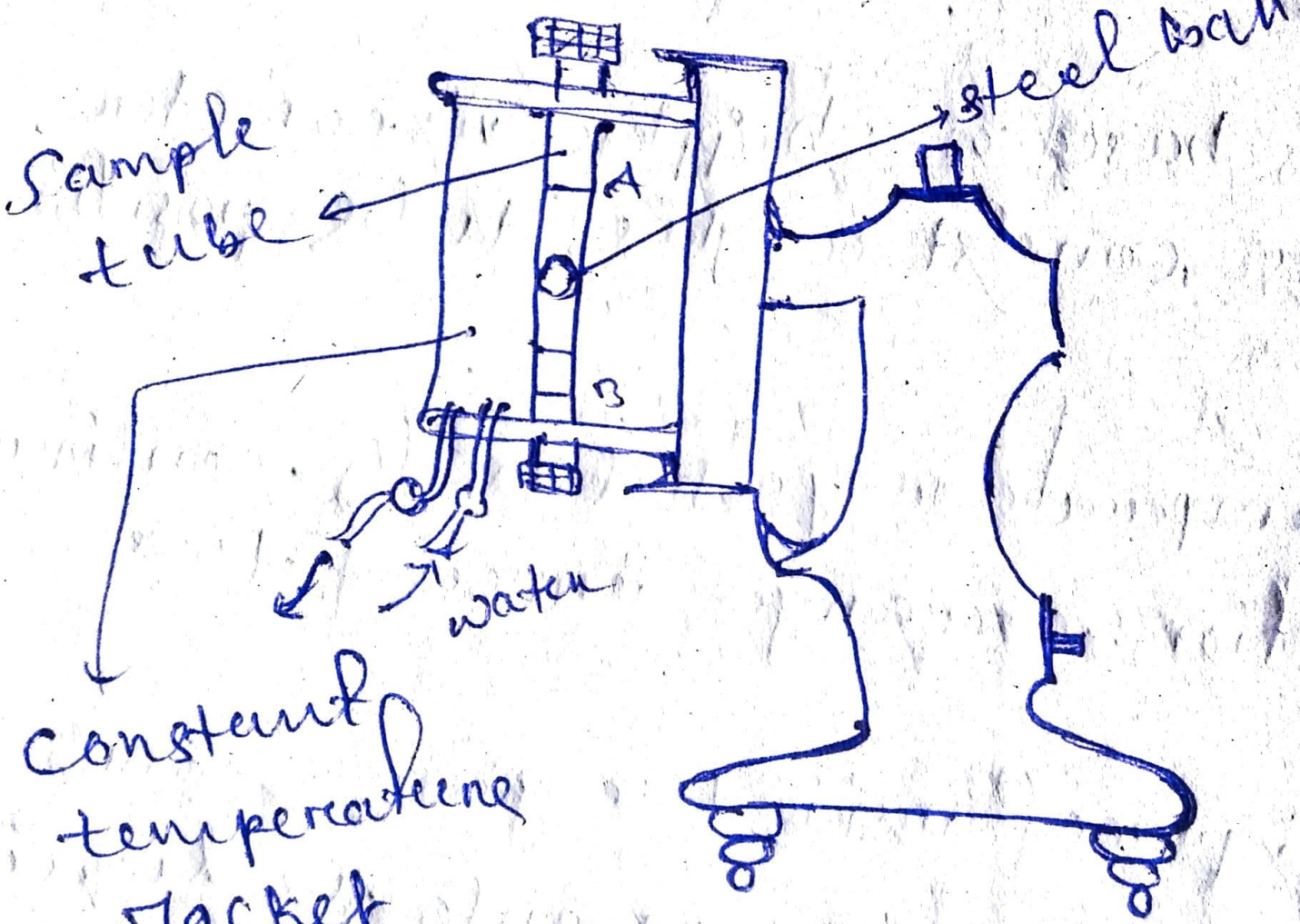
⇒ where, t = time taken for the ball to fall bet^n 2 points

s_b = specific gravity of the ball

s_f = specific gravity of the test liquid

B = constant for a particular ball

(Short question)



(Hoepplers falling sphere viscometer)

Dt = 30/12/19 (Long question)