

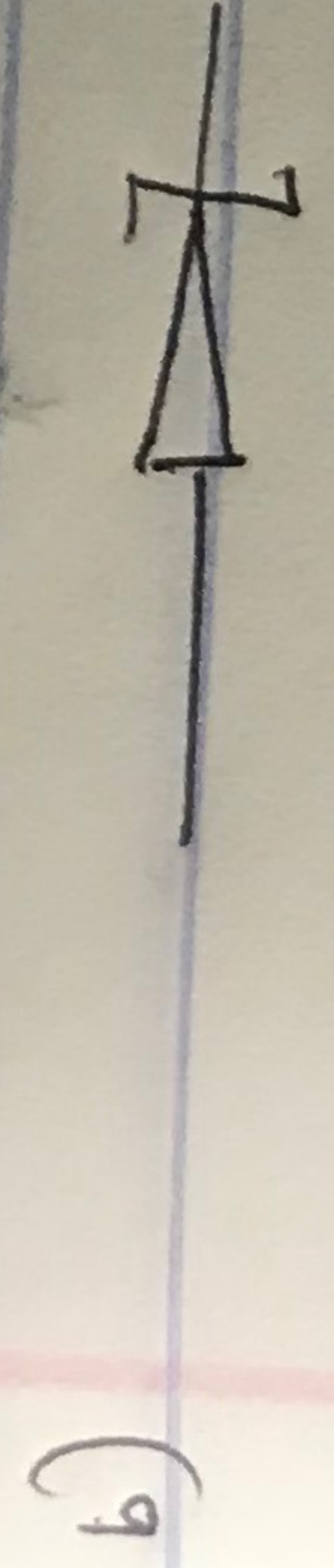
NAME:- MUHAMMAD ISHAQ HARUN

MATRICE:- 191ENG061067

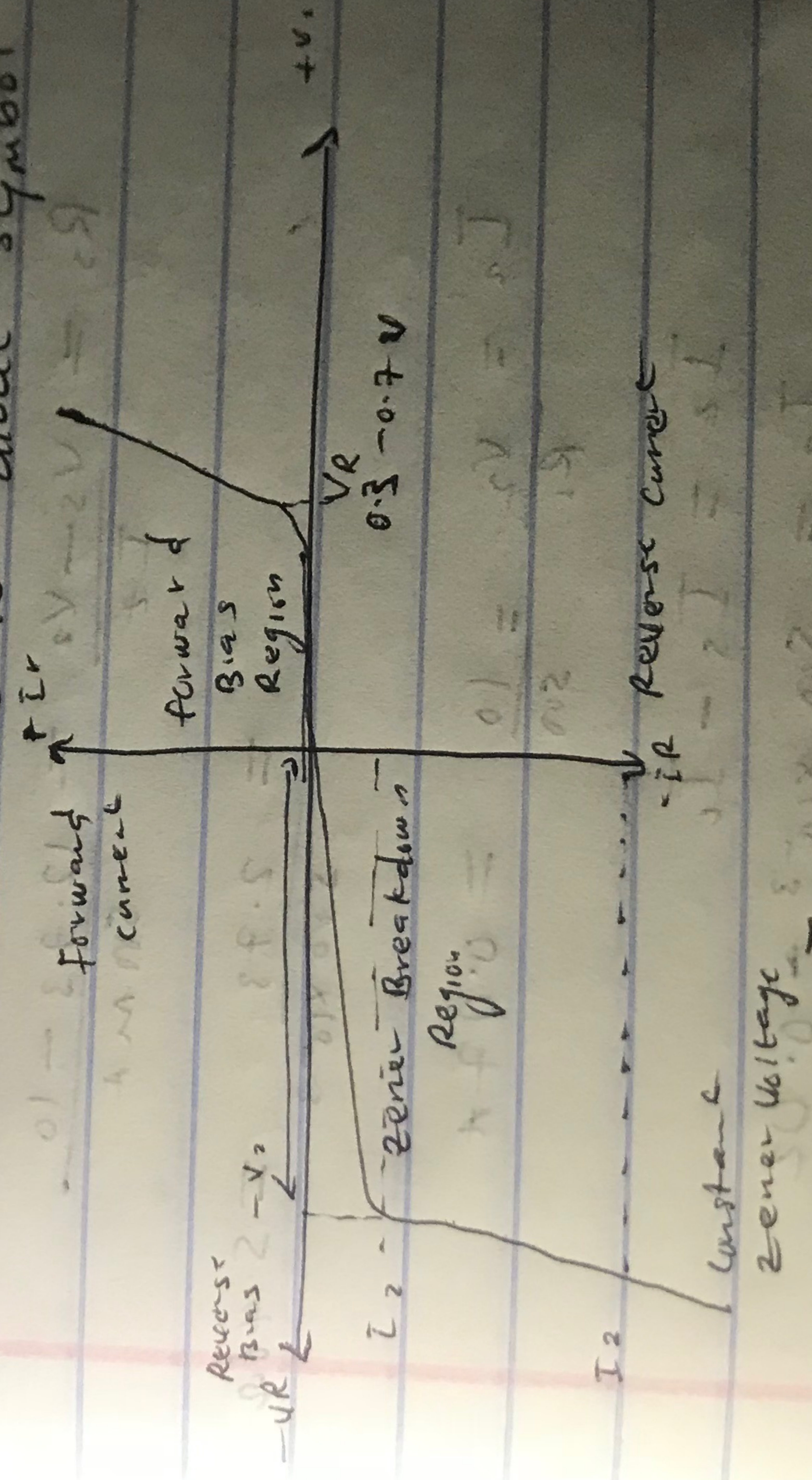
DEPT:- MECHANICAL ENGINEERING

COURSE:- EM9222

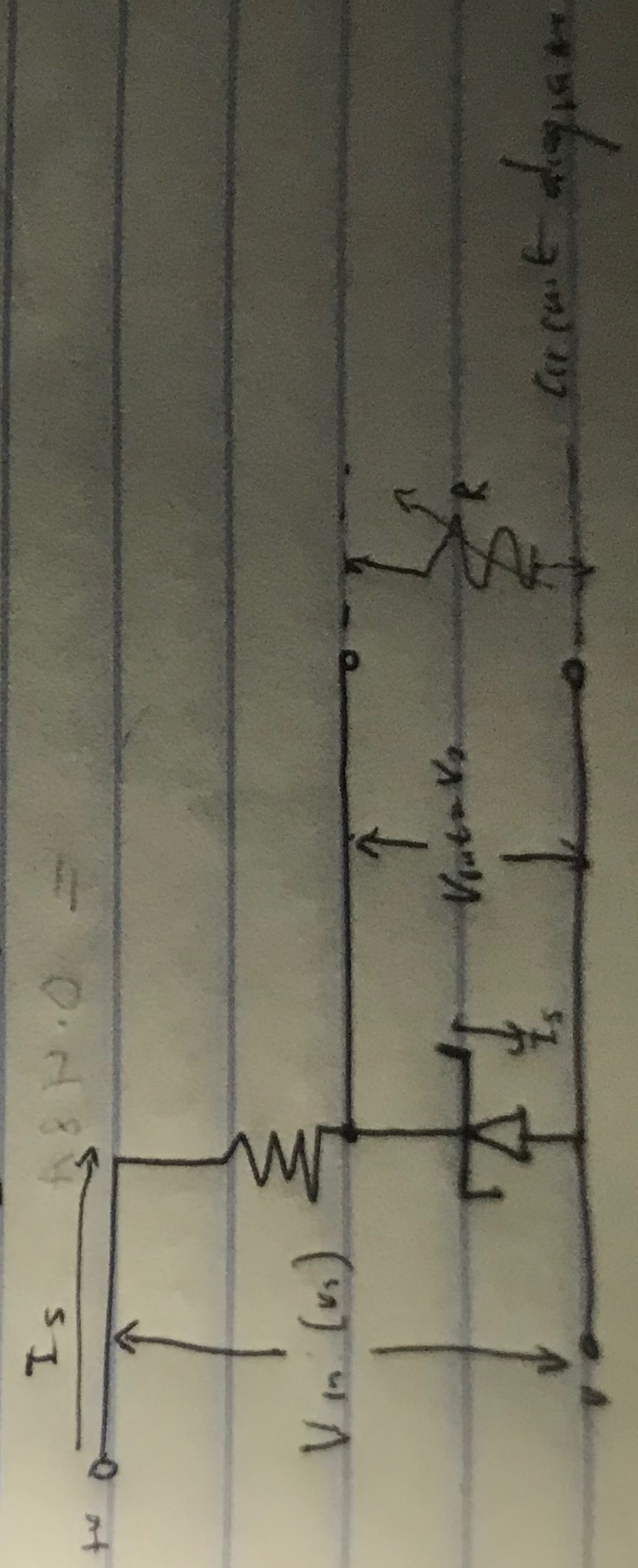
1) Zener diode is a form of semiconductor diode in which at a critical reverse voltage a large reverse current can flow and also a type that allows current to flow in the conventional manner.



Zener diode symbol



I-V CHARACTERISTICS CURVE



2 $P_2 = 5 \text{ watts}$ $V_s = 20 \text{ V}$

$V_2 = ?$

$R_s = ?$

$I_s = 500 \text{ mA}$ $= \frac{5}{500 \times 10^{-3}} = 10 \text{ V}$

Voltage = $\frac{\text{Watts}}{\text{current}} = \frac{5}{500 \times 10^{-3}}$

$V_{be} = 2 \frac{V_{ms}}{A} = \frac{2 \times 20}{A} = 12.73$



i) ~~the~~ minimum

$R_s = \frac{V_s - V_2}{I_2} = \frac{12.73 - 10}{500 \text{ mA}}$

$= \frac{2.73}{500 \times 10^{-3}} = 5.46 \Omega$

ii) $I_2 = \frac{V_2}{R_1} = \frac{10}{500}$

$= 0.02 \text{ A}$

$I_e = I_s - I_c$

$I_2 = 500 \times 10^{-3} - 0.02$

$= 0.48 \text{ A}$

