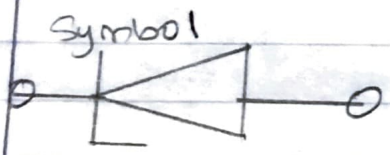
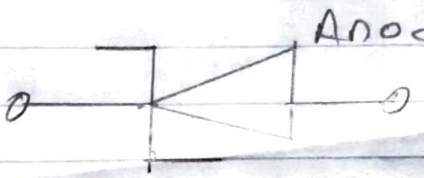
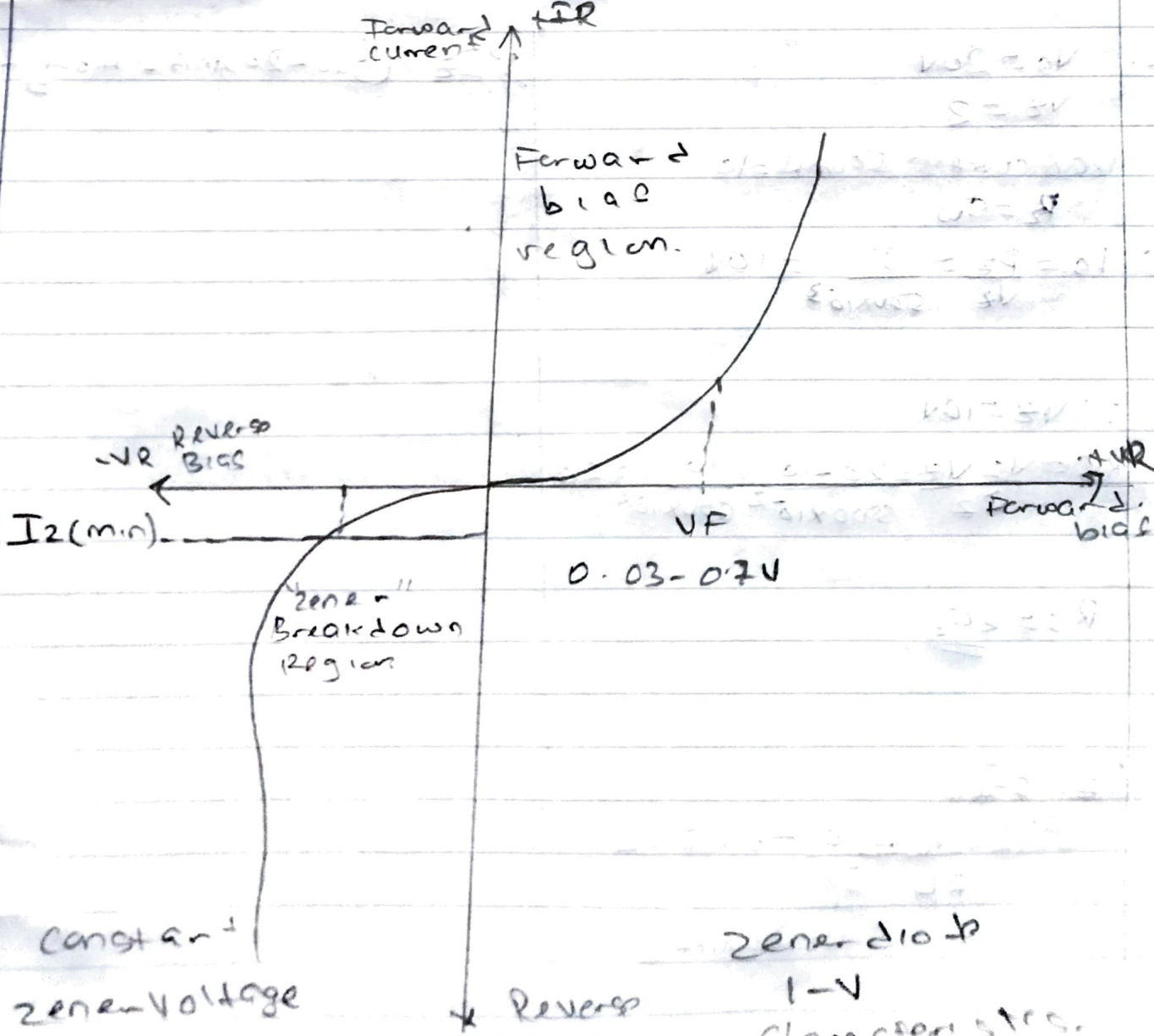
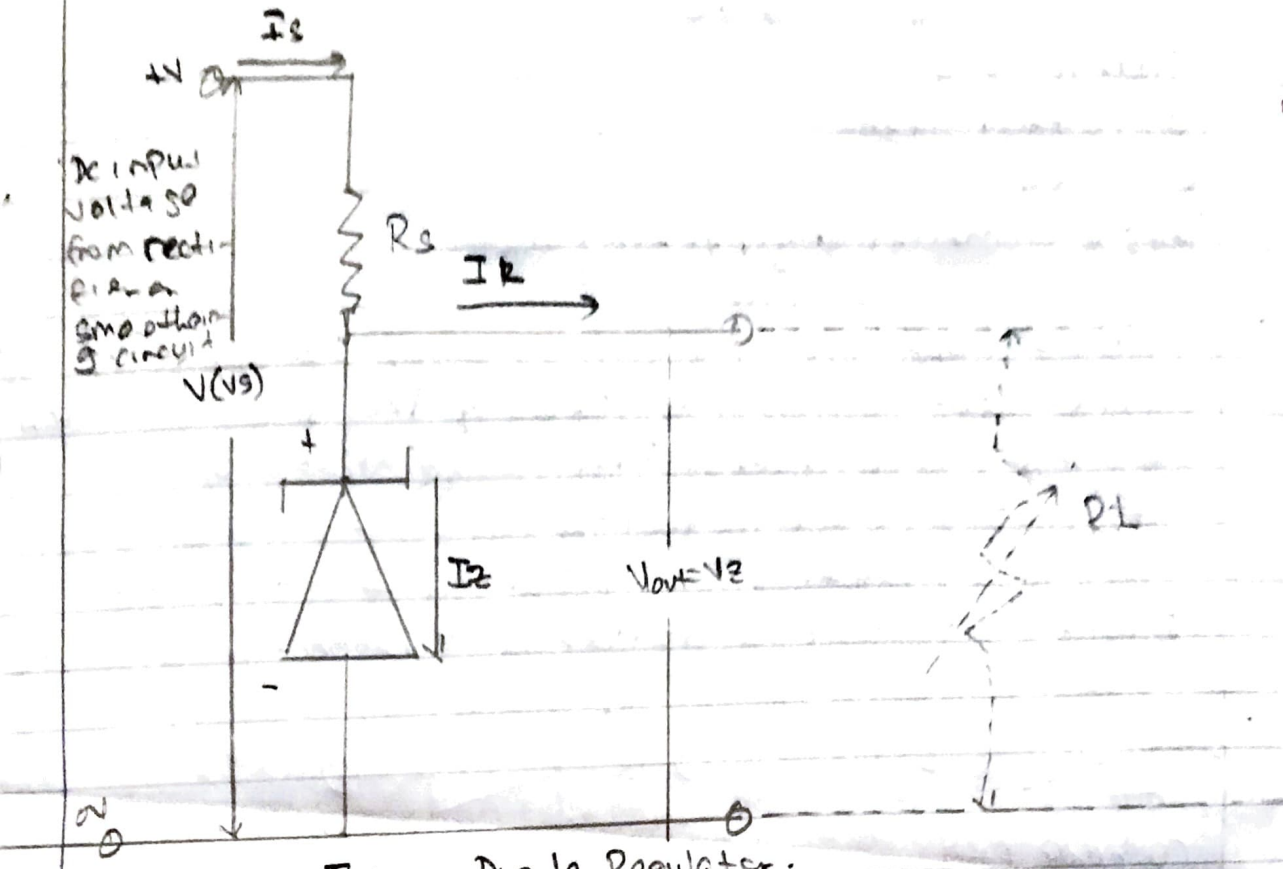
Adedokun Precious Adeola
18/ENG02/006
Compute-Engineering
ENG 222
Basic Electrical Engineering II

(F) A Zener diode is a diode similar to the standard PN junction diode but they are specially designed to have low and specified reverse Breakdown voltage.
It is a type of diode that allows current to flow in the conventional manner - from its anode to its cathode i.e when the anode is positive with respect to the cathode









Zener Diode Regulator.

2. $V_s = 20V$

$V_z = 2$

max current 500mA = Ic

$R_z = 5\Omega$

(i) $I_c = \frac{P_z}{V_z} = \frac{5}{500 \times 10^{-3}} = 10V$

$\therefore V_z = 10V$

$R_c = \frac{V_s - V_z}{I_z} = \frac{20-10}{500 \times 10^{-3}} = \frac{10}{500 \times 10^{-2}} = 20$

$R_s = 20\Omega$.

$\therefore I_z = (500 - 20)mA = 480mA$.

$I_z = I_c - I_L$

$R_L = \frac{V_L}{I_L} = \frac{10}{500} = 0.02\Omega$

$= 20mA$