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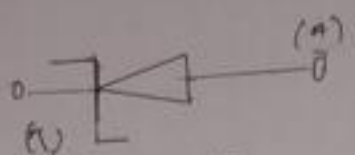
Course: Basic Elect

1)



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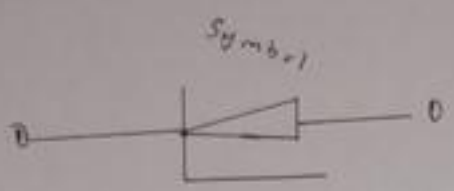

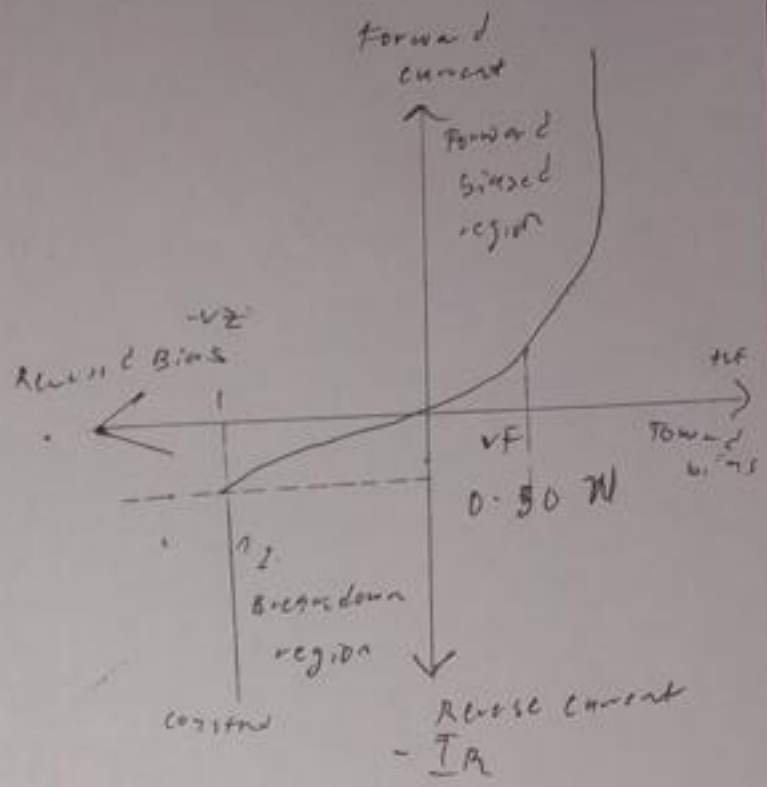

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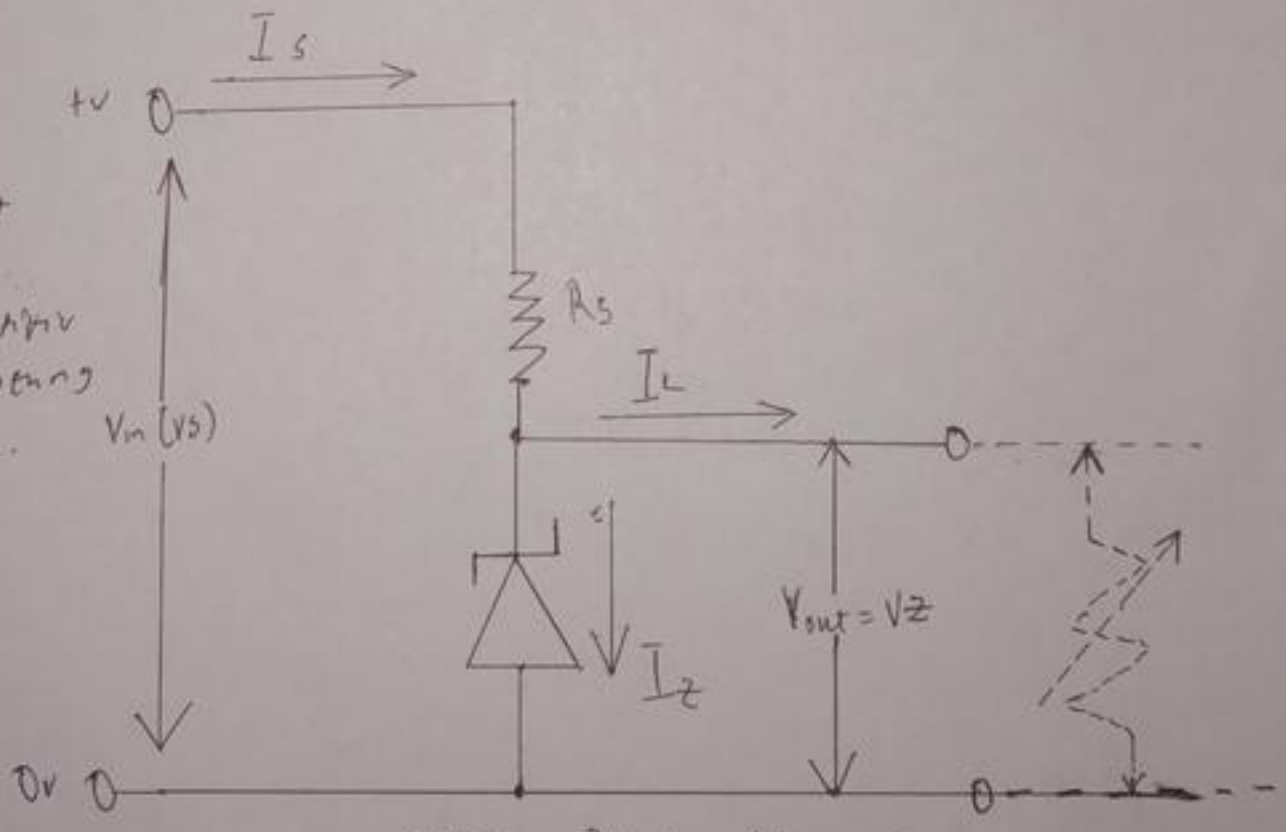

Zener Diode Diagram

(2) 2. $V_s = 20\,V$

$V_z =$

max current = $500\,mA = 1A$

$P_z = 5\,W$

$I_z = \frac{5\,W}{V} = 0.5A$

$V_z = 10$ volts

minimum resistance = $\frac{V_s - V_z}{I_z}$

$V_{dc} = 0.637 V_m$

$= 0.637 \times 20$

$= 12.74 \cdot dc$

minimum resistance = $\frac{12.74 - 10}{0.5} = 5.48\,\Omega$

$\therefore$ load current $I_L = \frac{V_z}{R_L} = \frac{10}{500} = 0.02A$ or $20mA$

$I_z = I_s - L$

$= 500 - 20$

$= 480\,mA$