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Dept ELECTRICAL ELECTRONICS

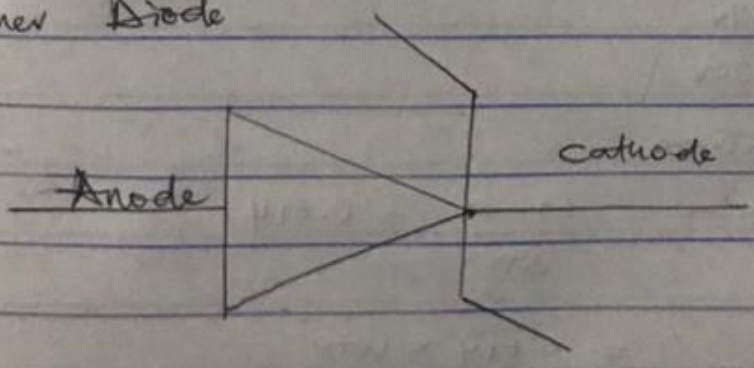
Matric No 18/ENG07/075

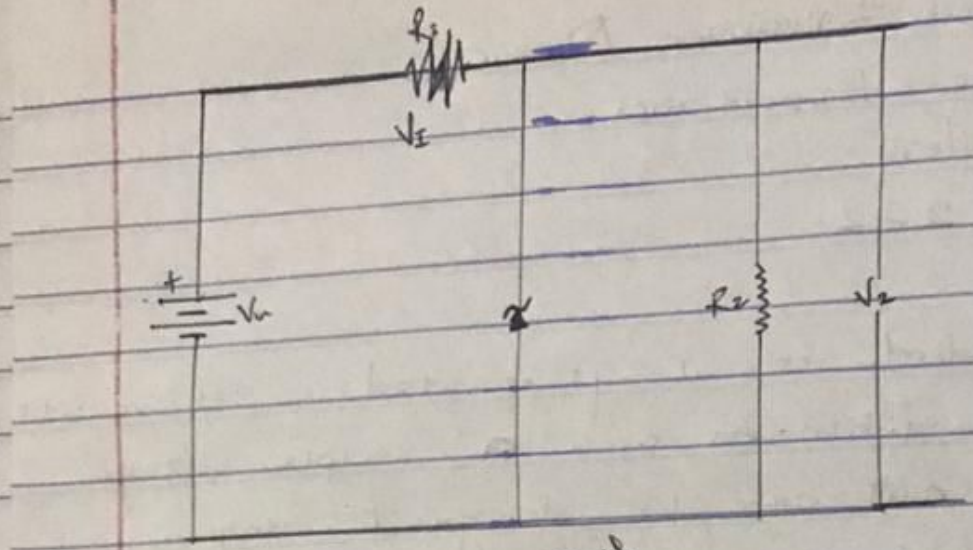
Course Code ENG 222

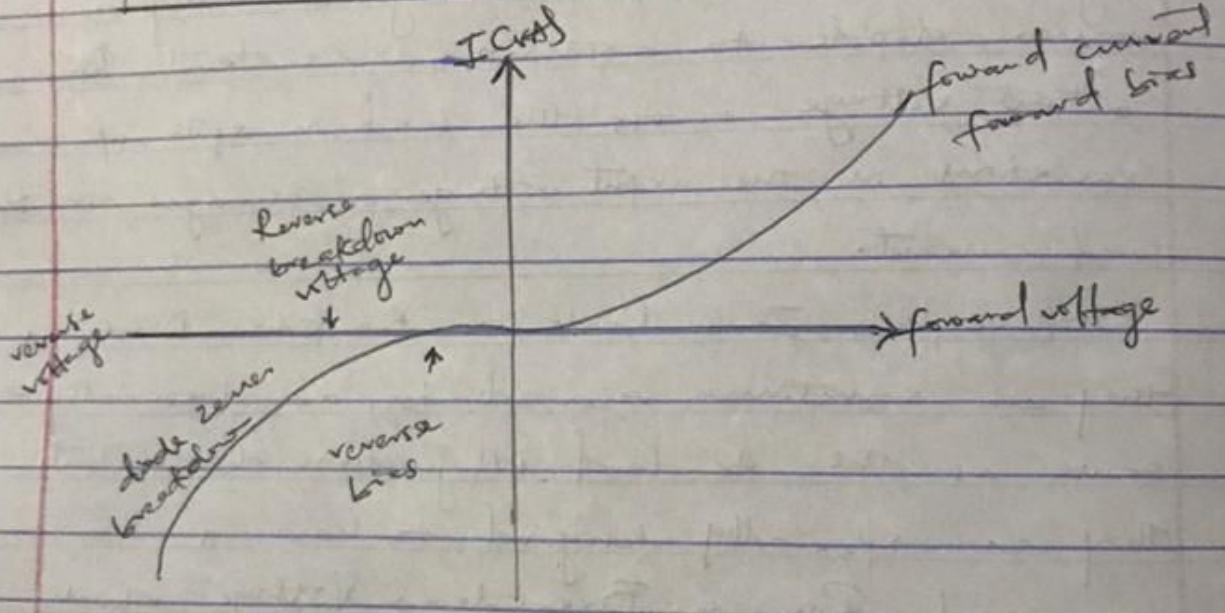
A zener diode is always operated in its reverse biased condition. As such a simple voltage regular circuit can be designed using a zener diode to maintain a constant DC output voltage across the load in spite of variations in the input voltage or changes in the load current.

However, the Zener Diode or "Breakdown Diode", as they are sometimes referred too, are basically the same as the standard PN junction diode but they are specially designed to have a low and specified Reverse Breakdown Voltage which takes advantages of any reverse voltage applied to it.

Zener Diode







I- V Characteristic curve

2. Maximum input = 5V

" current = 500mA

I) $V_s = 27V$

$V_z = 20V$

$I_z = 500mA$

Minimum value = $\frac{27-20}{500} = 0.014$

$= 0.014 \times 1000$

$= 14\Omega$

I.) Current $= I_C = \frac{V_o}{R_L}$

$= \frac{20}{500}$

$= 0.04A$