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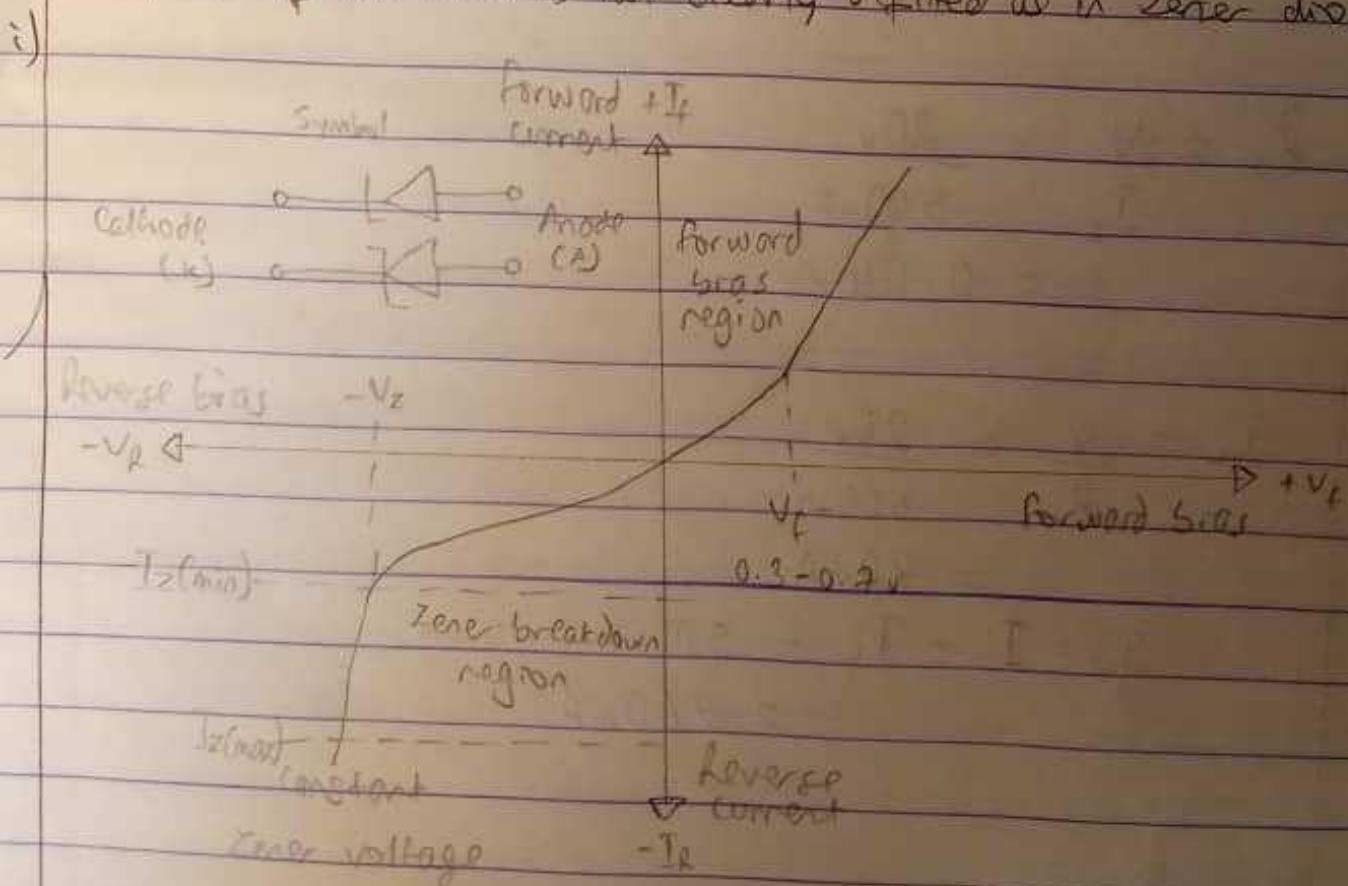
Matric No: 18/EWE01010

Dept: Chemical Engineering

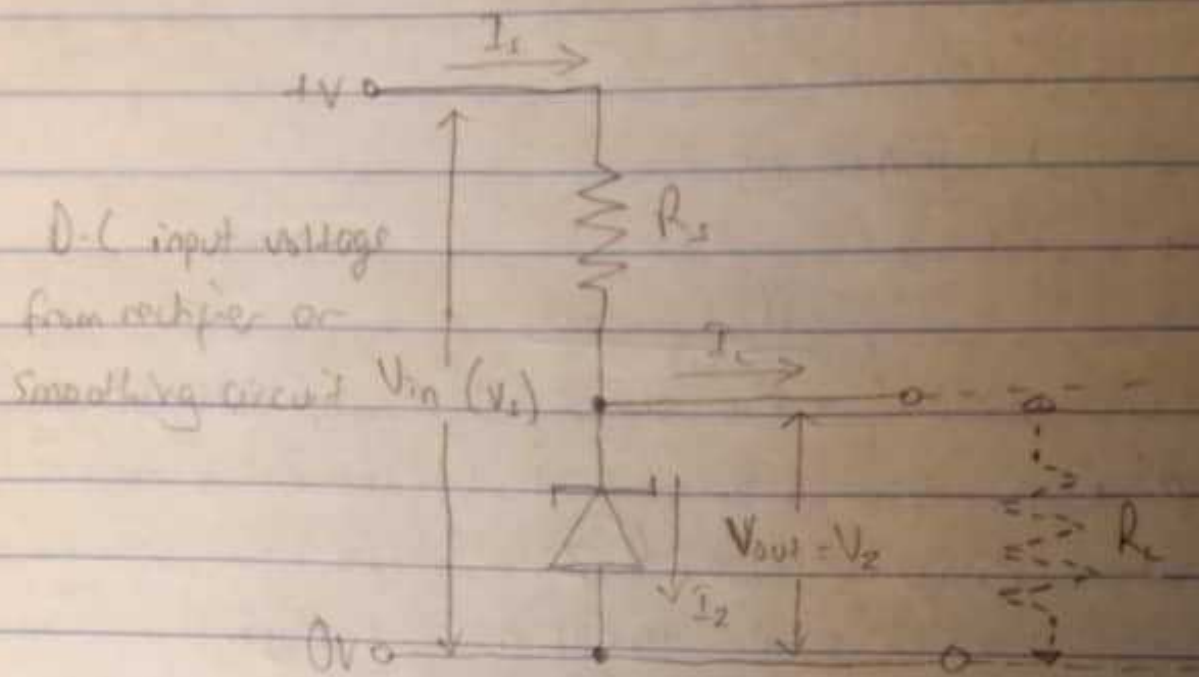
Course code: ENE222

Assignment

- i) The zener diode is the simplest types of voltage regulator and the point at which a zener diode breaks down or conducts is called the Zener voltage. Zener diodes have a highly doped p-n junction. A similar break down is observed in general purpose diodes (which might be quite high), but the voltage and sharpness of the knee is not clearly defined as in zener diodes



Zener diode I-V characteristic curve



Circuit diagram for Zener diode regulator

$$2) i) R_s = \frac{V}{I_z} = \frac{20V}{500mA} = 0.04 \Omega$$

$$ii) I_c = \frac{V}{R_L} = \frac{20V}{500\Omega} = 40mA$$

$$I_z = I_c - I_L = 500mA - 40mA = 460mA$$