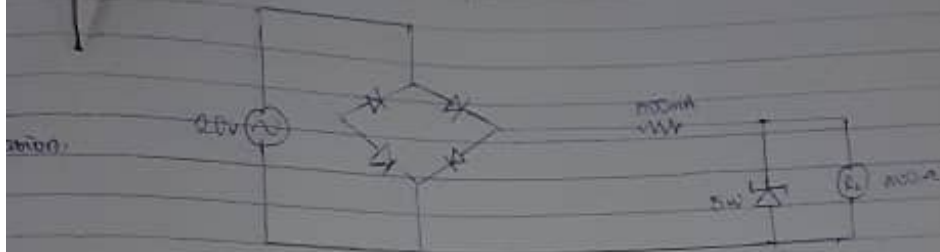


Q. (i) The minimum value of the series resistor to the zener diode



$$R_s = \frac{V_s - V_z}{I_z} = \frac{20 - 5}{0.25} = 60\Omega$$

$$I_p \text{ Max current} = \frac{P_D}{V_z} = 0.25 \text{ mA}$$

(ii) The current across the diode at full load of 500 Ω

$$I_z = I_s - I_L = 0.25 \text{ mA} - 0.01 \text{ mA} = 0.24 \text{ mA}$$

$V = 500\Omega$ of load resistor

$$I_L = \frac{V_z}{R_L} = \frac{5}{500} = 0.01 \text{ mA}$$


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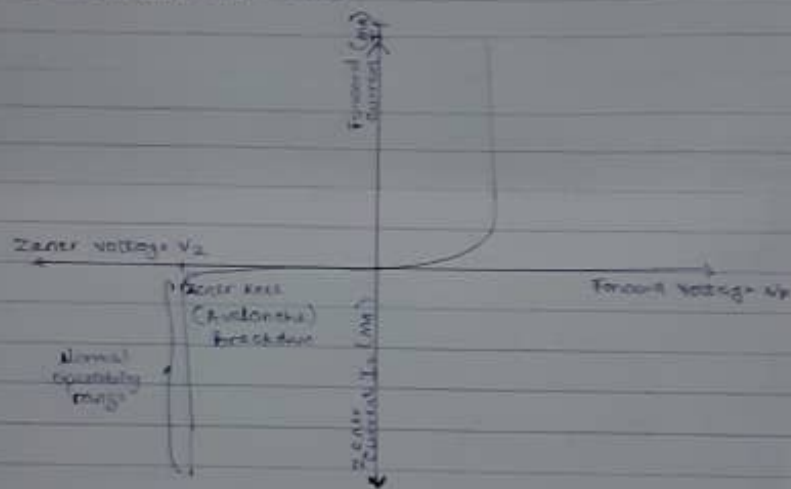
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1. A Zener diode regulator is used for controlling voltage in different circuits normally operated in reverse biased condition

Zener diode symbol 

Zener Diode Characteristics

The I-V characteristics curve



The Circuit Diagram of a Zener Diode

