

DAVIES FREDRICK

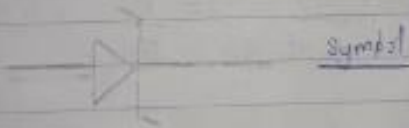
18/ENG06/019 MECHANICAL ENGINEERING

1 A zener diode regulator is a device widely used as shunt regulator or voltage references to regulate voltage across small circuits

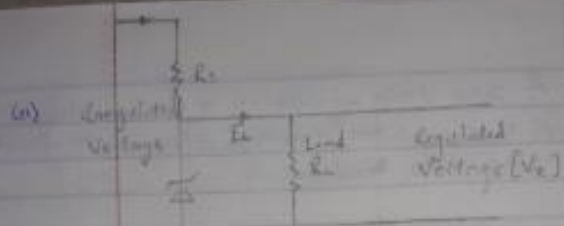
(ii) i-v characteristics curve



b



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$$2a) V = \frac{\text{Watt}}{\text{Current}} = \frac{5W}{500mA} = 10V$$

$$\therefore \text{Max Value} = \frac{V_1 - V_2}{I_L} = \frac{20 - 10}{500mA} = \frac{10}{0.5A} = 20\Omega$$

(b) Current at 500Ω = ?

$$\text{Current} = \frac{V_2}{\text{resistance}} = \frac{10}{500} = 0.02A$$

$$I_L = 200mA$$