



$$2) I = 500 \text{ mA} = 500 \times 10^{-3} \text{ A}$$

$$V_{\text{max}} = 20 \text{ V}_{\text{max}}$$

$$P = 5 \text{ W}$$

$$V_S = \frac{P}{I} = \frac{5}{500 \times 10^{-3}} = 10 \text{ V}$$

$$V_Z = 10 \text{ V}$$

$$R_S = \frac{V_S - V_Z}{I_Z} = \frac{20 - 10}{500 \times 10^{-3}} = 20$$

$$R_S = 20 \Omega$$

$$I_L = \frac{V}{R_L} = \frac{10}{500} =$$

$$0.02 \text{ A}$$

$$= 20 \text{ mA}$$

$$I_Z = (500 - 20) \text{ mA} = 480 \text{ mA}$$