

$$R_{th} = [(R + 2R) \parallel 4R + 2.5R] \parallel 2.5R = \left[ \frac{12}{1} R + \frac{2.5}{1} R \right] \parallel \frac{2.5}{1} R$$

$$\Rightarrow R_{th} = \frac{7.2}{11} R$$

$e_{oc}$ :

$I_0 \rightarrow$   $V_{oc}$

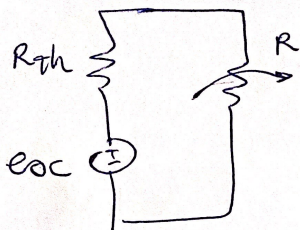
$$V_{oc} = \frac{1}{5.2 + 1} \times I_0 \times \frac{1}{1} \times 2.5R = \frac{2.5}{6.2} R I_0$$

$V_0 \rightarrow$   $V_{oc}$

$$V_{oc} = \frac{\frac{12}{1}}{\frac{12}{1} + 2} \times \frac{2.5}{2.5 + 2.5} V_0 = \frac{2.5}{11} V_0$$

$$\Rightarrow e_{oc} = \frac{1}{11} (2.5 R I_0 + 2.5 V_0)$$

$\therefore \text{Thevenin voltage}$



$$i = \frac{eoc}{R_{Th} + R}$$

$$P_R = Ri^2 = \frac{R(eoc)^2}{(R_{Th} + R)^2}$$

$$\frac{dP_R}{dR} = 0 \rightarrow R = R_{Th}$$

$$R = \frac{35}{22} R$$

