



$$R_{TH} = \frac{40 \cdot 10 \text{ k}\Omega}{40 + 10} = 8 \text{ k}\Omega$$

$$E_{TH} = \frac{10 \text{ k}\Omega}{40 + 10} \cdot 12 \text{ V}$$

$$I_{TH} = \frac{10 \text{ k}\Omega}{50 \text{ k}\Omega} \cdot 12 \text{ V}$$

$$I: E_{TH} = V_{EB} = I_E \cdot 2 \text{ k}\Omega + I_B \cdot R_{TH}$$

$$12 \text{ V} - V_{EC} = I_C \cdot 6 \text{ k}\Omega + I_E \cdot 2 \text{ k}\Omega$$

$$V_{EB} \approx 0,7 \text{ V (ASSUMPTION)}$$

$$E_{TH} = 2,4 \text{ V}$$

$$I_E = (\beta + 1) I_B$$

$$I_C = \beta \cdot I_B$$

$$2,4 \text{ V} - 0,7 \text{ V} = 161 \cdot 2 \text{ k}\Omega I_B + 8 \text{ k}\Omega I_B \quad (1)$$

$$12 \text{ V} - V_{EC} = I_B \cdot 160 \cdot 6 \text{ k}\Omega + I_B \cdot 161 \cdot 2 \text{ k}\Omega \quad (2)$$

$$1,7 \text{ V} = 322 I_B \text{ k}\Omega + 8 \text{ k}\Omega I_B \Rightarrow I_B = 5,15 \text{ }\mu\text{A}$$

$$V_{EC} = 12 - I_B (960 \text{ k}\Omega + 322 \text{ k}\Omega) \quad V_{EC} = 12 \text{ V} - 6,6023 \text{ V}$$

$$V_{EC} = 12 - 5,15 \cdot 10^{-6} \text{ A} \cdot 1282 \text{ k}\Omega \quad V_{EC} = 5,39 \text{ V}$$

$$Q(5,39 \text{ V}, 824 \text{ }\mu\text{A})$$