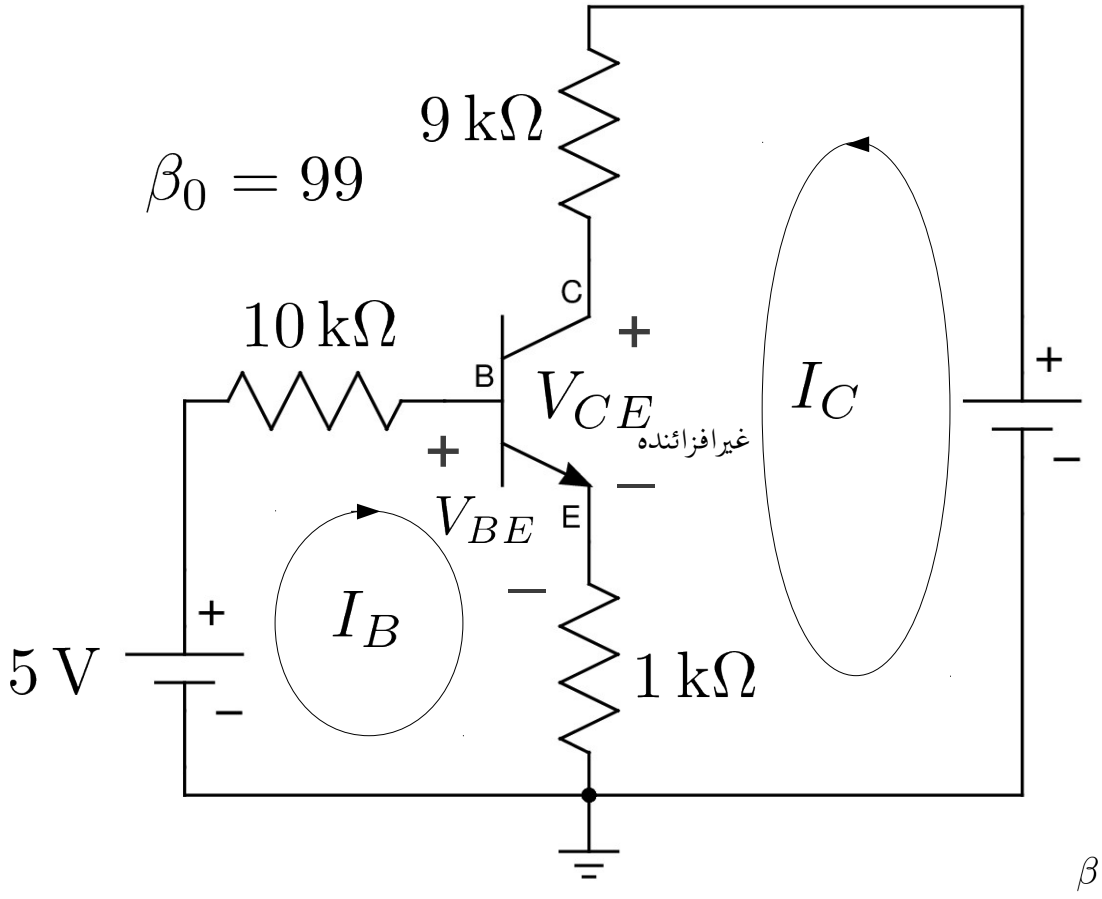

$$I_E = \frac{V_{BB} - V_{BE}}{\frac{R_B}{\beta+1} + R_E} = \frac{5 - 0.7}{\frac{10000}{99+1} + 1000}$$

$$= 3.9\,\text{mA}$$

$$V_{CE} \approx V_{CC} - I_C\,(R_C + R_E)$$

$$= 10 - 3.9 \times 10^{-3} \times (9000 + 1000)$$

$$= -29\,\text{V}$$

$$V_{BB} = I_B R_B + V_{BE} + (I_B + I_C)\,R_E$$

$$5 = I_B \times 10000 + 0.7 + (I_B + I_C) \times 1000$$

$$V_{CC} = I_C R_C + V_{CE} \qquad + (I_B + I_C)\,R_E$$

$$10 = I_C \times 9000 + 0.2 + (I_B + I_C) \times 1000$$

$$I_B = 0.304 \qquad I_C = 0.956$$

β

$$= \frac{I_C}{I_B} = \frac{0.956 \times 10^{-3}}{0.304 \times 10^{-3}} = 3.045$$