



$$\frac{1}{I_C} \times h_{FE} = \frac{I_C}{I_B} \times \frac{1}{I_C}$$

$$\frac{h_{FE}}{I_C} = \frac{1}{I_B}$$

$$I_B = \frac{I_C}{h_{FE}}$$

(解)

$$V_{cc} = R_C(I_C + I_B) + R_B I_B + V_{BE}$$

ここで直流電流増幅率の定義式 $h_{FE} = \frac{I_C}{I_B}$ 変形して $I_B = \frac{I_C}{h_{FE}}$

$$V_{cc} = R_C \left(I_C + \frac{I_C}{h_{FE}} \right) + R_B \frac{I_C}{h_{FE}} + V_{BE}$$

$$10[V] = 3[k\Omega] \left(2[mA] + \frac{2[mA]}{100} \right) + R_B \frac{2[mA]}{100} + 0.64[V]$$

$$10[V] - 0.64[V] = 3[k\Omega] \left(2[mA] + \frac{2[mA]}{100} \right) + R_B \frac{2[mA]}{100}$$

$$9.36 = 3 \times 10^3 \left(2 \times 10^{-3} + \frac{2 \times 10^{-3}}{100} \right) + R_B \frac{2 \times 10^{-3}}{100}$$

$$9.36 = 3 \times 10^3 (2 \times 10^{-3} + 2 \times 10^{-5}) + R_B \times 2 \times 10^{-5} \quad \text{計算しよ}$$

$$9.36 = 6 + 0.06 + 2 \times 10^{-5} R_B$$

$$= 6.06 + 2 \times 10^{-5} R_B$$

$$2 \times 10^{-5} R_B = 9.36 - 6.06 = 3.3$$

$$\therefore 2 \times 10^{-5} R_B = 3.3$$

$$R_B = \frac{3.3}{2 \times 10^{-5}} = 165000 = 165 \times 10^3 = 165[k\Omega]$$

(終)

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