

Partie 3

$$R_N = \frac{V_s}{\tilde{i}_c} = r_{CE6} \left[1 + \frac{\beta R_7}{r_{BE6} + R_7} \right] + \frac{R_7 r_{BE6}}{R_7 + r_{BE6}}$$

* application numérique :

$$\rightarrow r_{CE6} = \frac{V_{early}}{I_0} = \frac{50}{4 \cdot 10^{-3}} = 12\,500 \, \Omega$$

$$\rightarrow r_{BE6} = \frac{U_T}{I_{B0}} = \frac{U_T}{I_0/\beta} = \frac{25 \cdot 10^{-3} \times 100}{4 \cdot 10^{-3}} = 625 \, \Omega$$

$$\Rightarrow R_N = 12\,500 \times \left(1 + \frac{100 \times 150}{625 + 150} \right) + \frac{150 \times 625}{150 + 625}$$

$$R_N = 254,6 \, k\Omega$$