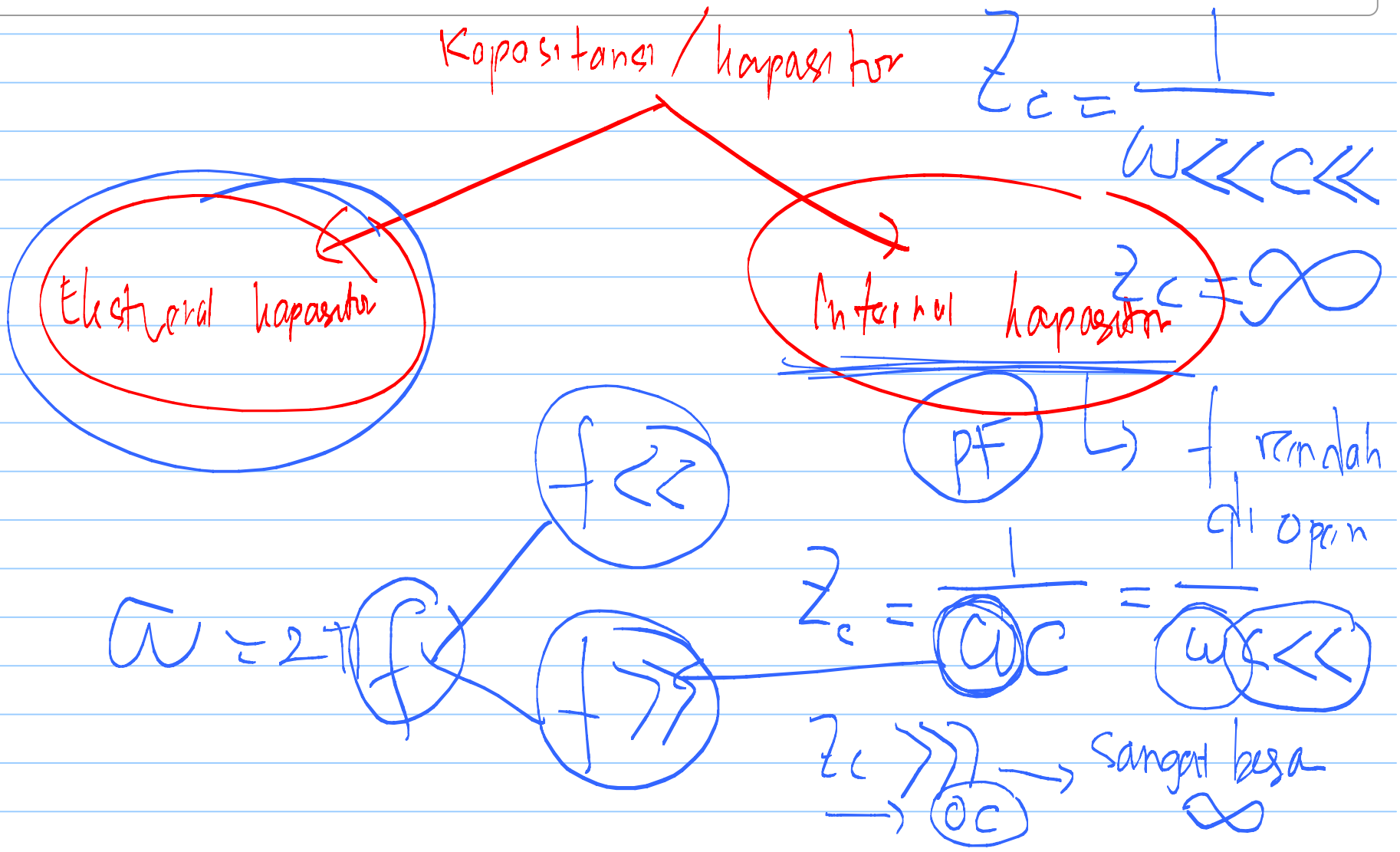

Kapasitansi / kapasitor
$Z_c = \frac{1}{\omega C}$
$\omega \ll C \ll$
Eksternal kapasitor
Internal kapasitor
$Z_c = \infty$
pF
↳ f rendah
ω besar
$\omega = 2\pi f$
f <<
f >>
$Z_c = \frac{1}{\omega C} = \frac{1}{\omega \ll}$
$Z_c \gg$
0C
sangat besar
∞

Internal kapasitor → jika frekuensi rendah dan nilai C kecil (pF) → $Z = \frac{1}{\omega C} = \infty$ → open circuit

sehingga efek kapasitansi di BJT diabaikan jika frekuensi rendah

$Z_C = \frac{1}{\omega C} = \frac{1}{\omega \gg C \ll}$ → ??? ada muncul

frekuensi → rendah → turun

Saat arus frekuensi tinggi dan kapasitansi internal maka Z turun maka mempengaruhi nilai dari penguatan.

Kapasitor Elektrolit → nilai kapasitansi besar (uF)

$$Z_c = \frac{1}{\omega C} = \frac{1}{\omega C \gg}$$

$Z_c \ll$ → kecendrungan short circuit

$\omega = 2\pi f$

$f \ll$

$f \gg \rightarrow Z_c = \frac{1}{\omega C} = \frac{1}{\omega \gg C \gg} = SC$

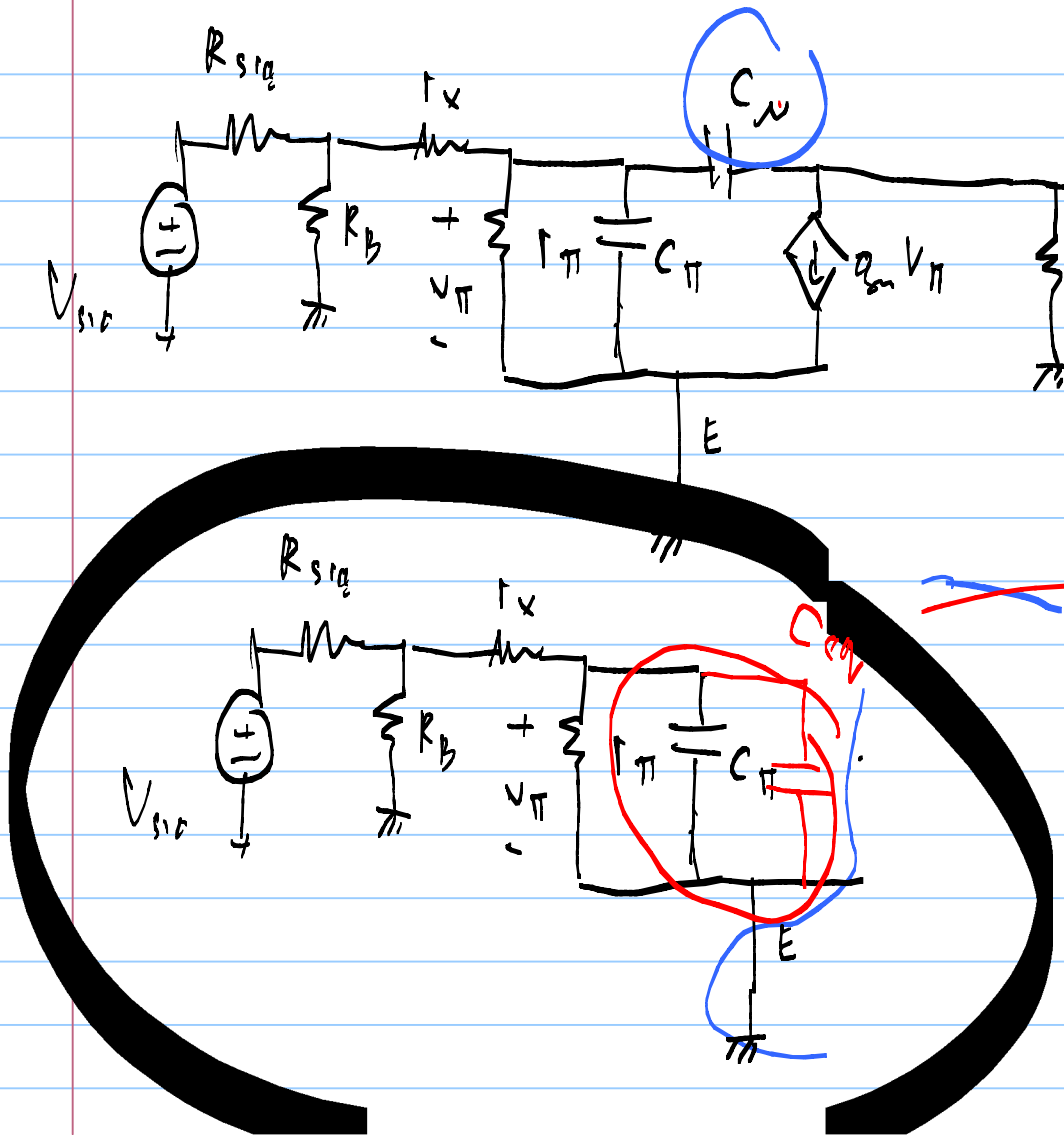
$$Z_C = \frac{1}{\omega C} = \frac{1}{\omega \ll C \gg} \rightarrow Z_C \rightarrow \text{ada}$$

kecil → membesar

berpengaruh pd rangkaian

Kesimpulan

1. Frekuensi tinggi yg berpengaruh kapasitansi internal sedangkan kapasitansi eksternal short circuit
2. Frekuensi rendah yg berpengaruh kapasitansi eksternal sedangkan kapasitansi internal open circuit



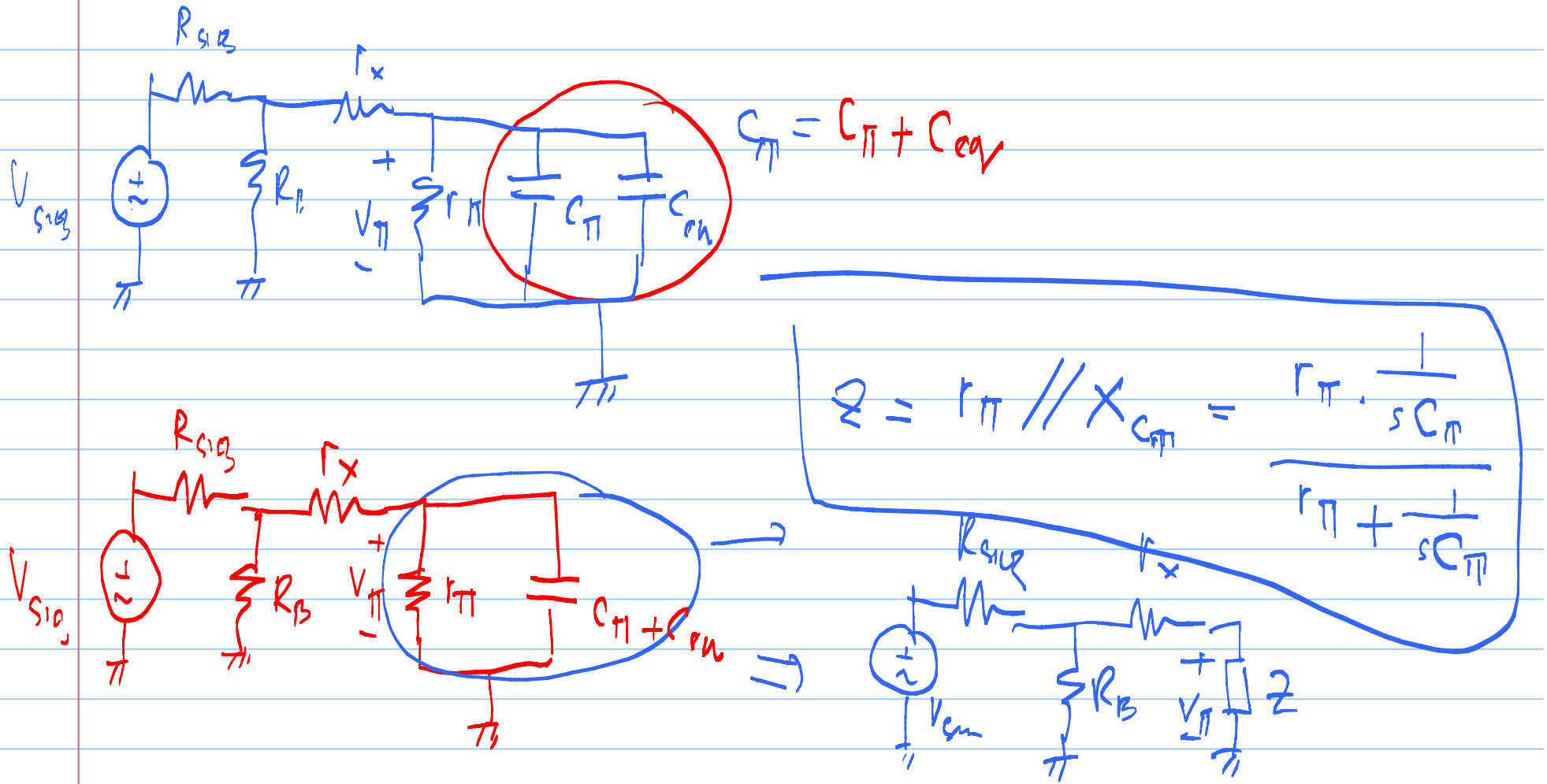
$$Z_i = \frac{Z}{1 - A_v}$$

$$\frac{1}{\omega C_{eq}} = \frac{1}{\omega C_\mu (1 - A_v)}$$

$$C_{eq} = C_\mu (1 - A_v)$$

$C_\pi + C_{eq}$

$V_o = g_m V_\pi (r_o // R_c // R_L)$


R_{sig}
r_x
V_{sig}
R_B
V_π
r_π
C_π
C_{eq}
$C_\pi = C_\pi + C_{eq}$
$Z = r_\pi // X_{C_\pi} = \frac{r_\pi \cdot \frac{1}{sC_\pi}}{r_\pi + \frac{1}{sC_\pi}}$
V_{sig}
R_{sig}
r_x
R_B
V_π
r_π
$C_\pi + C_{eq}$
R_{sig}
r_x
V_{sig}
R_B
V_π
Z