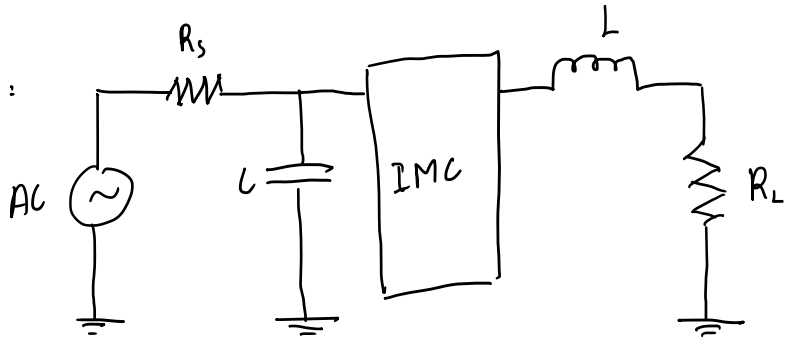
M. Hasyim Abdillah P. 1101190095

3. Dik :



$R_S = 2\,k\Omega$
$R_L = 100\,\Omega$
$L = 0{,}5\,\mu H$
$C = 3\,pF$

Dit : Rangkaian IMC

Jawab :

a) Gunakan jawaban dari soal no. 1

L Total → $L_T = 1{,}39\,\mu H$

$L + L' = 1{,}39\,\mu H$

$0{,}5\,\mu H + L' = 1{,}39\,\mu H$

$L' = 0{,}89\,\mu H$ → L & L' dirangkai seri

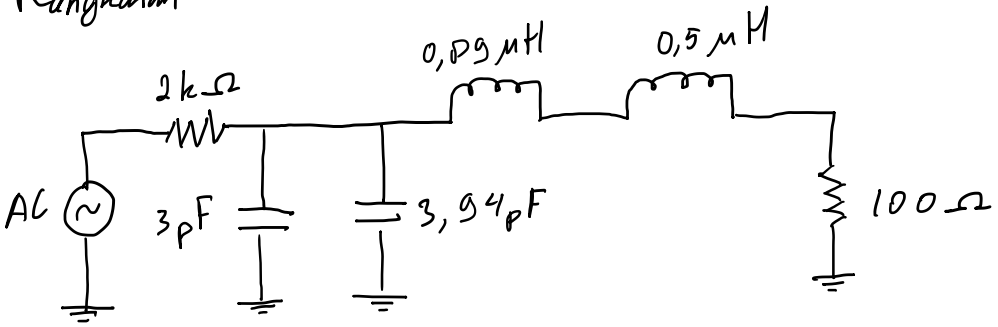
C Total → $C_T = 6{,}94\,pF$

$C + C' = 6{,}94\,pF$

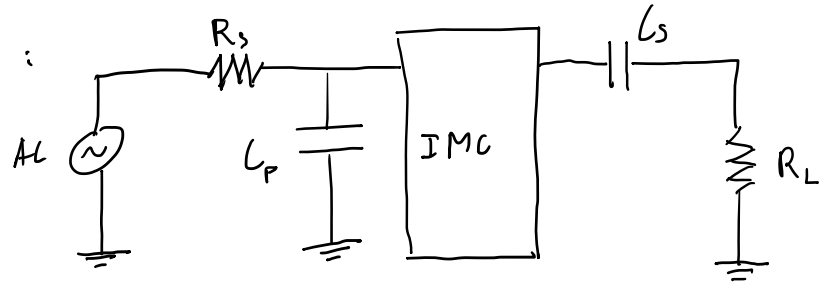
$3\,pF + C' = 6{,}94\,pF$

$C' = 3{,}94\,pF$ → C & C' dirangkai paralel

Rangkaian IMC :



4. Dik :



$R_s = 2k\Omega$
$R_L = 100\Omega$
$C_s = 5\ pF$
$C_p = 3\ pF$
$f = 50\ MHz$

Dit : Rangkaian IMC

Jawab :

a) Gunakan jawaban no. 1 untuk menentukan L_s seri dengan C_s dan R_L

$X_s = Q_s . R_s$ dengan $R_s = R_L = 100\Omega$

$$2\pi f L_s - \frac{1}{2\pi f C_s} = Q_s . R_s$$

$$2\pi f L_s = Q_s . R_s + \frac{1}{2\pi f C_s}$$

$$2.3,14.50\times10^6 . L_s = \sqrt{19} . 100 + \frac{1}{2.3,14.50\times10^6 . 5\times10^{-12}}$$

$$314\times10^6\ L_s = 100\sqrt{19} + 636,94$$

$L_s = 2,98\times10^{-6}\ H = 2,98\ \mu H$ → L_s & L_s dirangkai seri

C Total → $C_T = 6,94\ pF$

$C_p + C_p' = 6,94\ pF$

$3\ pF + C_p' = 6,94\ pF$

$C_p' = 3,94\ pF$ → C_p & C_p' dirangkai paralel

Rangkaian IMC :