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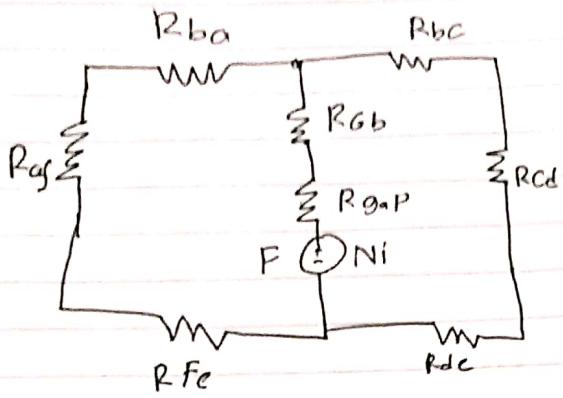
1.) a.) $A = 15 \times 15$
$= 225\ cm^2$
$= 0,0225\ dm^2$

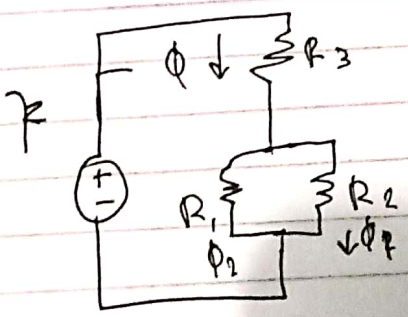


$\mathcal{F} = NI$
$\mu = \frac{B}{H} = \frac{1}{4850} = 1,176 \times 10^{-3}$ Iosh steel
$\mu_0 = 4\pi \times 10^{-7}$
$N = 250$

a.) $R_1 = R_{ba} + R_{af} + R_{Fe}$
$R_1 = \frac{(80+100+80) \times 10^{-2}}{1,176 \times 10^{-3} \times 2,25 \times 10^{-2}}$
$R_1 = \frac{260 \times 10^{-2}}{2,65 \times 10^{-5}} = 98,1 \times 10^3$

$R_2 = R_{bc} + R_{cd} + R_{de}$
$= \frac{260 \times 10^{-2}}{2,65 \times 10^{-5}} = 98,1 \times 10^3$

$R_3 = R_{yaP} + R_{Gb}$
$= \frac{5 \times 10^{-3}}{4\pi \times 10^{-7} \times 2,25 \times 10^{-2}} + \frac{99,5 \times 10^{-2}}{1,176 \times 10^{-3} \times 2,25 \times 10^{-2}}$
$= 2,14 \times 10^5$



$R_{total} = R_3 + \frac{R_1 \times R_2}{R_1 + R_2}$
$= 2,14 \times 10^5 + \frac{98,1 \times 98,1 \times 10^6}{196,2 \times 10^3}$
$= 2,63 \times 10^5$

b.) $\Phi = BA$

$= 1 \times 2,25 \times 10^{-2}$ Wb

$\Phi = \frac{NI}{R_{total}}$

$2,25 \times 10^{-2} \times 2,63 \times 10^{5} = 250\ I$

$I = \frac{5,92 \times 10^{3}}{250}$

$= 23,68$ A

c.) $\Phi_1 = \frac{1}{2}\Phi = B_1 = \frac{1\Phi}{2A}$

$\Phi_2 = \frac{1}{2}\Phi \quad B_2 = \frac{1\Phi}{2A}$

d.) $L = N\frac{\Phi}{I}$

$= \frac{250^2}{2,63 \times 10^5}$

$L = 250 \times \frac{NI}{R_{tot}}$

$\frac{}{I}$

$L = 0,238$ H