ENRIQUE_GUIDO_2P_FISICAII_1C2021

viernes, 16 de julio de 2021 16:42

ENRIQUE_GUIDO_2P...

GUIDO ENRIQUE 164.272-8

HOJA N°

FECHA

justificación?

① $i(t) = N \cdot w \cdot \frac{B \cdot A}{R} \cdot \text{sen}(wt)$

$N = 147$

$L_{Lado} = 0.1\,[m]$

$w = 290\,[rad/s]$

$|B| = 3.0\,T \quad (-\hat{i})$

$R = 97$

$i(t) = \frac{147 \times 290 \times 3.0 \times (0.1)^2 \times \text{sen}(290\,t)}{97}$ (Área)

$i(t) = 13.1345\ \text{sen}(290\,t)$

X

NOTA (4) (CUATRO)

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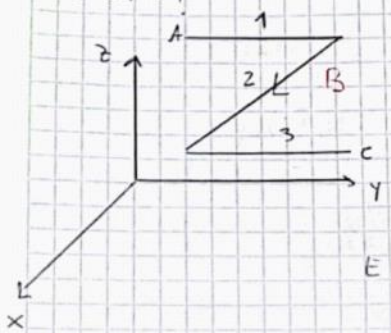
② $V = 5\ [m/s]$ $B = 0.9\ [T]$ $L = 0.4\ [m]$

$V_C - V_A = ?$



$E = \oint (\vec{V} \times \vec{B})\, \vec{dl}$

la curva debe ser cerrada

$E = \int (V \times B)\, dl_1 + \int (V \times B)\, dl_2 + \int (V \times B)\, dl_3 \dots$

$E = \int V \cdot B \cdot |dl_1| \cdot \cos(120°) + \int V \cdot B\, |dl_2| \cdot \cos(0)$

$+ \int V \cdot B\, |dl_3| \cdot \cos(120)$

ángulos? tramos?

$E = -V_B l + V_B l - V_B l \Rightarrow -V_B l$ ×

$V_A - V_C = \int E \cdot dl \Rightarrow -V_B l = 5[m/s] \cdot 0.9[T] \cdot 0.4[m]$

$V_A - V_C = 1.8\ [V]$

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(4) $I = 14.1\ [A]$ $\quad \phi_{B2} = 84.5\ [mWb]$

$i(t) = 4.1\ [A] \cdot \sin(62.5 \cdot t)$

$M = \frac{N \cdot \phi_{B2}}{I_1}$ ✓

$M = \frac{84.5}{14.1}$

$M = 5.9929 \simeq 6$

Derivo: $\frac{d}{dt}(i(t)) = \{4.1 \cos(62.5t) \cdot 62.5\}$

$\frac{d}{dt}(i(t)) = \{256.25 \cos(62.5t)\}$

✓ $\varepsilon = M \frac{d(i(t))}{dt} = M \cdot 256.25 \cos(62.5t)$

$\varepsilon = 6 \cdot (256.25) \cos(62.5t)$

$\varepsilon = 1537.5 \cos(62.5t)$ (en mV)

$\Rightarrow 1.53\ V \Rightarrow \varepsilon = 1.53\ V \cos(62.5t)$

$\Rightarrow V_{EF} = \frac{V}{\sqrt{2}} = \frac{1.53}{\sqrt{2}} = 1.0813\ [V]$ ✓

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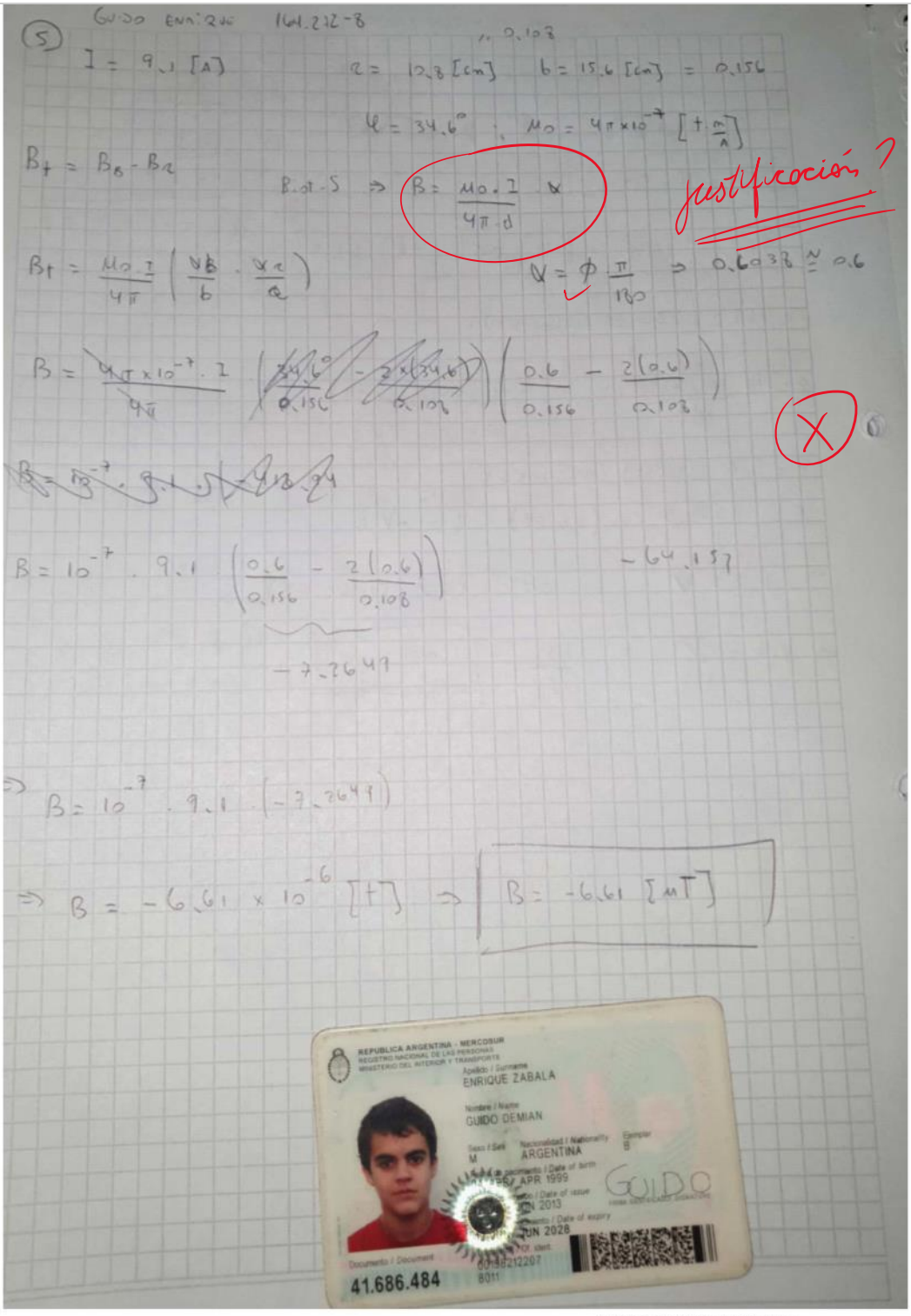

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FOLIO Nº

FECHA

③ RLC con (~) $V_g = 652[V]$ $f = 525[Hz]$

$V_L = 453[V]$ $V_C = 552[V]$

corriente eficaz?

$R = 223[\Omega]$

$I_{ef} = \frac{V_{ef}}{Z} \Rightarrow Z = \sqrt{R^2 + (X_L^2 - X_C^2)^2}$

$X_L = WL = \frac{V_L}{I}$ $X_C = WC = \frac{I}{V_C}$

$\frac{V_{ef}}{I_{ef}} = Z = \sqrt{R^2 + \left(\frac{V_L}{I} - \frac{V_C}{I}\right)^2}$

$X_C = \frac{1}{WC}$

$\frac{V_{ef}^2}{I_{ef}^2} = R^2 + \frac{V_L^2}{I^2} - \frac{2 \cdot V_L \cdot V_C}{I^2} + \frac{V_C^2}{I^2} =$

500112

$\Rightarrow 223^2 + \frac{453^2}{I^2} - \frac{2(453)(552)}{I^2} + \frac{552^2}{I^2}$

$\Rightarrow 223^2 = -\frac{453^2}{I^2} + \frac{500112}{I^2} - \frac{552^2}{I^2}$

$\frac{652^2}{I^2} - \frac{453^2}{I^2} + \frac{500112}{I^2} - \frac{552^2}{I^2} =$

$\Rightarrow \frac{223^2}{1} = \frac{9801}{I^2}$

$\frac{652^2}{I^2} - \frac{453^2}{I^2} + \frac{500112}{I^2} - \frac{552^2}{I^2} = 223^2$

$I^2 = \frac{415303}{223^2}$

$I^2 = 8.3513$

$I^2 = 0.11974$

$I = 0.346$

$I = 2.889$

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