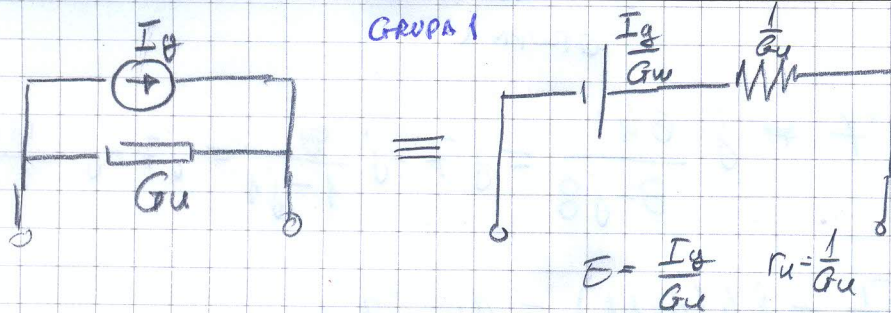


GRUPA 1

①



②

$$I_{AB} = \frac{V_{AB}}{R} = \frac{10}{10} = 1 \text{ A}$$

$$I_{AC} = I_A - I_{AB} = 5 - 1 = 4 \text{ A}$$

$$V_{AC} = -E + R_1 I_{AC} = -12 + 16 = 4 \text{ V}$$

$$V_{BC} = V_{BA} + V_{AC} = -10 + 4 = -6 \text{ V}$$

③

$$\phi(t) = B(t) \cdot S \cdot \omega \cdot 30^\circ = (B_0 - 0,2t) \cdot S \cdot \frac{\sqrt{3}}{2}$$

$$S = R^2 \pi = 16 \cdot 10^{-4} \pi \text{ [m}^2\text{]}$$

$$e = -N \frac{d\phi}{dt} = -N (-0,2) \cdot S \cdot \frac{\sqrt{3}}{2} \text{ V}$$

$$e = 100 S \cdot \frac{\sqrt{3}}{2} = 50\sqrt{3} \cdot S = 50 \cdot \sqrt{3} \cdot 16 \cdot \pi \cdot 10^{-4} \text{ V}$$

$$e = 800 \pi \sqrt{3} 10^{-4} \text{ V} = 8 \pi \sqrt{3} \cdot 10^{-2} \text{ V}$$

④

$$L = \frac{N\phi}{I}$$

$$\phi = \frac{Ni}{R_c + R_g}$$

$$L = \frac{N^2}{R_c + R_g}$$

⑤

$$\bar{I}_1 = \frac{10}{\sqrt{2}} e^{j0}$$

$$\bar{I}_2 = 10 e^{-j\pi/2} = -j10$$

$$\dot{i}_x = \dot{i}_1 + \dot{i}_2$$

$$\bar{I}_x = \bar{I}_1 + \bar{I}_2 = \frac{10}{\sqrt{2}} + \frac{10}{\sqrt{2}} (-j)$$

$$I_x = 10 \left[\frac{\sqrt{2}}{2} - j \frac{\sqrt{2}}{2} \right] = 10 e^{-j\pi/4}$$

$$\dot{i}_x = 10\sqrt{2} \sin(\omega t - \pi/4)$$