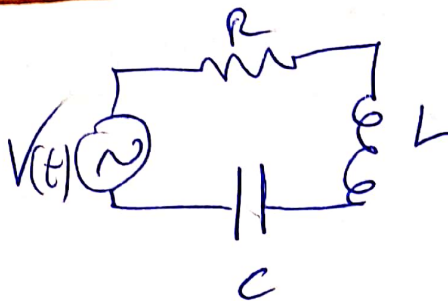


n°2

$$R = 20 \text{ } \Omega$$

$$L = 200 \text{ mH} = 0,2 \text{ H}$$

$$C = 45 \mu\text{F} = 45 \cdot 10^{-6} \text{ F}$$



$$V(t) = \underbrace{311 \text{ V}}_{V_{\text{max}}} \cdot \sin(\underbrace{100\pi t}_{\omega})$$

$$A) X_L = \omega L = 100\pi \frac{\text{rad}}{\text{s}} \cdot 0,2 \text{ H} = 62,8 \text{ } \Omega$$

$$B) \left[\frac{\text{rad}}{\text{s}} \cdot \text{H} \right] = \left[\frac{\text{V} \cdot \text{s}}{\text{A}} \right] = \left[\text{ } \Omega \right]$$

legge indotta $\text{fem} = -L \frac{dI}{dt} \quad [\text{H}] = \left[\frac{\text{V} \cdot \text{s}}{\text{A}} \right]$

1° legge Ohm $V = IR \quad [V] = [A \cdot \Omega]$

$$C) X_C = \frac{1}{\omega C} = \frac{1}{100\pi \frac{\text{rad}}{\text{s}} \cdot 45 \cdot 10^{-6} \text{ F}} = 70,7 \text{ } \Omega$$

$$D) \left[\frac{\text{s}}{\text{F}} \right] = \left[\frac{\text{s} \cdot \text{V}}{\text{C}} \right] = \left[\frac{\text{s} \cdot \text{V}}{\text{A} \cdot \text{s}} \right] = \left[\text{ } \Omega \right]$$

def CAPACITÀ $C = \frac{Q}{V} \quad [F] = \left[\frac{\text{C}}{\text{V}} \right]$

def $1 \text{ C} = 1 \text{ A} \cdot \text{s} \quad [C] = [A \cdot \text{s}]$

2° legge Ohm $V = IR \quad [V] = [A \cdot \Omega]$

$$E) Z = \sqrt{R^2 + (X_L - X_C)^2} = \sqrt{[20 \text{ } \Omega]^2 + (62,8 - 70,7)^2 \text{ } \Omega^2} \approx 21,51 \text{ } \Omega$$