

$$V(t) = 311 \text{ V} \cdot \sin(100\pi t)$$

\uparrow
V_{MAX}

\uparrow
 $\omega = 100\pi \frac{\text{RAD}}{\text{S}}$

$$\begin{aligned} (100 \text{ cm})^2 &= (1 \text{ m})^2 \\ 10^4 \text{ cm}^2 &= 1 \text{ m}^2 \end{aligned}$$

$$N = 200 \text{ spire}$$

$$A = 100 \text{ cm}^2 = 100 \cdot 10^{-4} \text{ m}^2$$

$$A) \quad \omega = \frac{2\pi}{T} = 2\pi f \rightarrow f = \frac{\omega}{2\pi} = \frac{100\pi \frac{\text{RAD}}{\text{S}}}{2\pi} = \boxed{50 \text{ Hz}}$$

$$B) \quad V_{\text{eff}} = \frac{V_{\text{MAX}}}{\sqrt{2}} = \frac{311 \text{ V}}{\sqrt{2}} = \boxed{220 \text{ V}}$$

$$C) \quad V_{\text{MAX}} = N \cdot B \cdot A \cdot \omega \rightarrow B = \frac{V_{\text{MAX}}}{N A \omega} = \frac{311 \text{ V}}{200 \cdot 100 \cdot 10^{-4} \text{ m}^2 \cdot 100\pi \frac{\text{RAD}}{\text{S}}} =$$

$$B = 0,495 \text{ T}$$

$$D) \quad \left[\frac{\text{V} \cdot \text{S}}{\text{m}^2} \right] = \left[\frac{\text{J}}{\text{C} \cdot \text{m}^2} \right] = \left[\frac{\text{N} \cdot \text{m} \cdot \text{S}}{\text{C} \cdot \text{m}^2} \right] = [\text{T}]$$

def. POTENT. $V = \frac{U}{Q}$

def. LAVORO $L = \vec{F} \cdot \vec{S}$

$$[\text{J}] = [\text{N} \cdot \text{m}]$$

def. forza di LORENTZ $F = q \cdot \vec{v} \times \vec{B}$ $[\text{T}] = \left[\frac{\text{N} \cdot \text{S}}{\text{C} \cdot \text{m}} \right]$