Igor Eiki F. Kubota

Ra: 19.0246-5

(4-) a-) $r = 0{,}25\ m$

$f = 12{,}0\ Hz$

$B = 10{,}0\ T$

$$\mathcal{E} = -\frac{d\Phi_B}{dt}$$

$$\Phi_B = \iint B\hat{n}\, dA = BA\cos\theta$$

$\Phi_B = 1{,}96\cos\theta$ | $\theta = \omega t$

$\Phi_B = 1{,}96\cos(75{,}4t)$ | $\theta = 2\pi f t$

$\theta = 75{,}4t$

$\mathcal{E} = +178\ \mathrm{sen}(75{,}4t)$

$\mathcal{E}_{máx} = 1\,\mathrm{sen}(75{,}4t) = 1$

$$\boxed{\mathcal{E}_{máx} = 178\ V}$$

b-) $R = 3{,}0\ \Omega$

$$P_{dissipada} = \frac{\mathcal{E}^2}{R}$$

$$P_{dissipada} = \frac{178^2}{3} \Rightarrow \frac{31684}{3}$$

$P_{dissipada} = 10561{,}33\ W$

$$\boxed{P_{diss\,máx} = 1{,}06 \cdot 10^4\ W}$$