

Respuestas del Examen de Electromagnetismo 23/2/2010

1)

a. $\vec{J}(r,t) = \frac{\rho_0 g}{3 \epsilon} r e^{-gt/\epsilon} \hat{e}_r$

b. $\sigma(t) = \frac{\rho_0}{3} a (1 - e^{-gt/\epsilon})$

c. $E_{\text{dis}} = \frac{2\pi\rho_0^2 a^5}{45\epsilon}$

2)

a. $\omega_{\text{res}} = \sqrt{\frac{L_1}{C(L_1 L_2 - M^2)}}$

b. $\omega_{i_0} = \frac{1}{\sqrt{C(L_1 + L_2 - 2M_{12})}}$

3)

a. $B = \frac{B_1}{3}$

b. $M_{\text{máx}} = \frac{B_1^2 S}{9\mu_0 g}$