

es flett og

$$1] a) W = (F_1 - F_2 \cos(\theta)) s = 3 J$$

$$b) \Delta KE = W, \quad \frac{1}{2} m (v^2 - v_0^2) = W, \quad v^2 = v_0^2 + \frac{2W}{m}$$

$$2] a) m_1 v_1 = (m_1 + m_2) v, \quad v = \frac{m_1}{m_1 + m_2} v_1 = \frac{2}{3} 3 = 2 \text{ m/s}$$

$$\frac{1}{2} (m_1 + m_2) v^2 = \frac{1}{2} k A^2 \quad A \equiv \text{max compr} \equiv \text{amplitude}$$

del moto armonico

$$b) \omega^2 = \frac{k}{m}, \quad \omega = 2\pi f = \frac{2\pi}{T}$$

$$3] a) KE = \frac{1}{2} I \omega^2, \quad I = \frac{1}{3} m l^2$$

$$b) \alpha = \frac{\Delta \omega}{\Delta t}, \quad \tau = I \alpha, \quad \theta - \theta_0 = \omega_0 t + \frac{1}{2} \alpha t^2 = \frac{1}{2} \alpha t^2$$

$$\text{num. giri} = \frac{(\theta - \theta_0)}{2\pi} \quad (\theta_0 \text{ può essere assunto } = 0)$$

$$4] a) C_1 = \epsilon_r \epsilon_0 \frac{S}{d} = 7 \cdot 8.85 \times 10^{-12} \frac{50 \times 10^{-4}}{2.5 \times 10^{-3}}; \quad C_2 = \epsilon_0 \frac{S}{d}$$

$$b) Q_1 = C_1 V; \quad Q_2 = C_2 V; \quad U_1 = \frac{1}{2} C_1 V^2, \quad U_2 = \frac{1}{2} C_2 V^2$$

$$5] a) R_{\parallel} = 1 / \left( \frac{1}{R_2} + \frac{1}{R_3} + \frac{1}{R_4} \right), \quad R_{\text{tot}} = R_1 + R_{\parallel}$$

$$I = \mathcal{E} / R_{\text{tot}}, \quad \text{Pot. erog.} = \mathcal{E} \cdot I$$

$$b) I_3 = (\mathcal{E} - I \cdot R_1) / R_3, \quad \text{Pot. diss. } R_3 = I_3^2 \cdot R_3$$

$$\text{Energia} = \text{Pot} \cdot \Delta t$$

$$6] a) B = \mu_0 \mu_0 \frac{N}{l} I = 200 \cdot 4\pi \cdot 10^{-5} \cdot \frac{1700}{0.85} \cdot 5 \text{ T}$$

$$b) u_m = \frac{1}{2} \frac{B^2}{\mu_0 \mu_r}, \quad U_m = u_m (S \cdot l) \quad \text{Dove } S \equiv \text{Vol. solenoide}$$

trascurando i fletti ai bordi