

حل ورقة العمل فيزياء ١ / ١

سنة تصحيح مادة للصف النموذج

تاريخ:

٢٠٢٢ - ٢٠٢١



المطلوب ٢

$$\begin{aligned} \Gamma_0 &= \frac{1}{12} \text{ m} \cdot \text{s}^2 & (1) \\ 2 \times 10^{-3} &= \frac{1}{12} \text{ m} \times 16 \times 10^{-2} \\ m &= \frac{24}{16} \times 10^{-1} = 0,15 \text{ kg} \end{aligned}$$

$$T_0 = 2\pi \sqrt{\frac{\Gamma_0}{K}} \quad , T_0 = \frac{5}{5} = 1 \text{ s}$$

$$1 = 2\pi \sqrt{\frac{2 \times 10^{-3}}{K}} \Rightarrow K = 8 \times 10^{-2} \text{ m} \cdot \text{s}^{-2}$$

$$\Theta = \Theta_m \cos(\omega_0 t + \phi) \quad (2)$$

$$\Theta_m = \frac{\pi}{3} \text{ rad} \quad (2) \text{ } \phi = 0$$

$$\omega_0 = \frac{2\pi}{T_0} = \frac{2\pi}{1} = 2\pi \text{ rad} \cdot \text{s}^{-1}$$

$$\frac{\pi}{3} = \frac{\pi}{3} \cos \phi \Rightarrow \phi = \begin{cases} \frac{\pi}{3} & (2) \\ -\frac{\pi}{3} & (2) \end{cases}$$

$$\Theta = \frac{\pi}{3} \cos(2\pi t + \frac{\pi}{3}) \quad (3)$$

$$\begin{aligned} \omega = \omega_m = +\omega_0 \Theta_m \\ = 2\pi \frac{\pi}{3} = \frac{20\pi}{3} \text{ rad} \cdot \text{s}^{-1} \end{aligned} \quad (4)$$

$$\begin{aligned} \alpha &= -\omega_0^2 \Theta \\ &= -40 \times \frac{\pi}{3} = \frac{20\pi}{3} \text{ rad} \cdot \text{s}^{-2} \\ \Gamma &= -K\Theta = 8 \times 10^{-2} \times \left(-\frac{\pi}{3}\right) \\ &= \frac{4\pi}{3} \times 10^{-2} \text{ m} \cdot \text{s}^{-2} \end{aligned}$$

$$\begin{aligned} E &= \frac{1}{2} K \Theta_m^2 = \frac{1}{2} \times 8 \times 10^{-2} \times \frac{\pi^2}{9} = \frac{4}{9} \times 10^{-1} \text{ J} \end{aligned} \quad (5)$$

المطلوب ١

$$\Theta = \Theta_m \cos(\omega_0 t + \phi) = 1$$

$$\omega_0 = \sqrt{\frac{K}{m}} = \sqrt{\frac{10}{\frac{1}{4}}} = 2\pi \text{ rad} \cdot \text{s}^{-1}$$

$$x_{\max} = 0,1 \text{ m}$$

$\phi = 0$

$$0 = x_m \cos \phi$$

$$\cos \phi = 0 \Rightarrow \phi = \begin{cases} \frac{\pi}{2} & (2) \\ -\frac{\pi}{2} & (2) \end{cases}$$

$$v = -\omega_0 x_m \sin \phi$$

$$x = 0,1 \cos(2\pi t + \frac{\pi}{2})$$

$$E = \frac{1}{2} K x_m^2 = \frac{1}{2} \times 10 \times 10^{-2} = 0,05 \text{ J}$$

$$E_k = 0,048 \text{ J}$$

$$E_k = \frac{1}{2} m v^2$$

$$E_k = \frac{1}{2} m \omega_0^2 [x_m^2 - x^2]$$

$$4,8 \times 10^{-3} = \frac{1}{2} \times 10 (10^{-2} - x^2)$$

$$0,96 \times 10^{-2} = 10^{-2} - x^2$$

$$x^2 = 0,04 \times 10^{-2}$$

$$x = 0,2 \times 10^{-1} = 0,02 \text{ m} = 2 \text{ cm}$$

$$a = -\omega_0^2 x$$

$$= -40 \times 10^{-1} = -4 \text{ m} \cdot \text{s}^{-2}$$

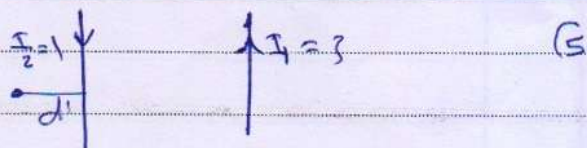
$$F = ma = \frac{1}{4} \times -4 = -1 \text{ N}$$

$$F_s = K(x_0 + x) \quad , x_0 = \frac{mg}{K}$$

$$x_0 = \frac{\frac{1}{4} \times 10}{10} = \frac{1}{4} \text{ m}$$

$$F_s = 10(0,1 + 0,25)$$

$$= 3,5 \text{ N}$$



$$2 \times 10^{-7} \frac{3}{0,4+d} = 2 \times 10^{-7} \frac{1}{d}$$

$$3d = 0,4 + d$$

$$d = 0,2 \text{ m}$$



الاجابة:

$$B = 4\pi \times 10^{-7} \frac{N}{A \cdot m} i$$

$$2 \times 10^{-5} = 4\pi \times 10^{-7} \frac{800}{0,8} i$$

$$i = \frac{10^{-1}}{2\pi}$$

$$R = \frac{U}{I} = \frac{0,16}{\frac{10^{-1}}{2\pi}} = 10 \text{ } \Omega$$

$$l' = 2\pi r N$$

$$= 2\pi \cdot 4 \times 10^2 \times 800$$

$$= 64\pi$$

$$= 200 \text{ m}$$

$$k_{\text{max}} = \frac{2 \times 10^{-5}}{2 \times 10^{-5}} = 1 \Rightarrow \alpha = \frac{\pi}{4} \text{ rad} = 45^\circ$$

$$\left(n = \frac{v}{v_1} = \frac{v}{\frac{800}{0,8}} = 1 \right)$$

$$\frac{v}{\lambda} = 1000, \frac{v}{\lambda} = 2000 \Rightarrow \lambda = 1600 \text{ m}$$

$$\Delta\phi = n B S (\cos\alpha_2 - \cos\alpha_1)$$

$$B = 4\pi \times 10^{-7} \frac{N}{A \cdot m} i \Rightarrow B' = 4 \times 10^{-5}$$

$$2 \times 10^{-9} = 1600 \times 4 \times 10^{-5} S (\cos 0 - \cos 90)$$

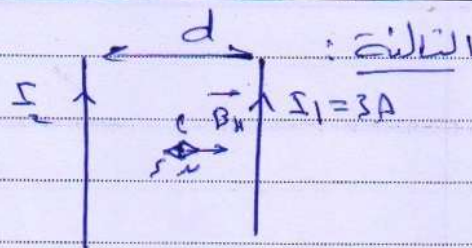
$$S = \frac{1}{32} \times 10^{-6} \text{ m}^2$$

الاجابة - افتد -

b (4) d (3) d (2) d (1)

a (8) c (7) d (6) d (5)

c (10) d (9)



$$B = 2 \times 10^{-4} \text{ T}$$

$$B_1 = 2 \times 10^{-7} \frac{I_1}{d_1} \Rightarrow 3 \times 10^{-6} = 2 \times 10^{-7} \frac{3}{d_1}$$

$$B = B_1 - B_2 \quad (d = 0,4 \text{ m})$$

$$2 \times 10^{-6} = 2 \times 10^{-7} \frac{3}{d_2} - 2 \times 10^{-7} \frac{I_2}{d_2}$$

$$2 \times 10^{-6} = 3 \times 10^{-6} - 2 \times 10^{-7} \frac{I_2}{d_2}$$

$$I_2 = 1 \text{ A}$$

$$k_{\text{max}} = \frac{B}{B_H} = \frac{2 \times 10^{-6}}{2 \times 10^{-5}} = 0,1$$

$$\alpha \sim 0,1 \text{ rad}$$

زاوية انحراف اقل عن B_H

او H عند $\alpha = 0$ الكتل

$$B = 0 \text{ نتيجه فطرية}$$

كل الـ

$$\vec{B} = \vec{B}_1 + \vec{B}_2 = 0$$

$$B_1 = B_2$$

$$2 \times 10^{-7} \frac{3}{0,4-d} = 2 \times 10^{-7} \frac{1}{d}$$

$$d = 0,1 \text{ m}$$

اقرب الـ

وسه الـ

$$B = 2 \times 10^{-6} + 10^{-6}$$

كل الـ

$$\vec{B} \perp \vec{B}_H$$

$$B = \sqrt{B_H^2 + B^2}$$

كل الـ