

Θεμα. Α

A₁ δ

A₂ γ

A₃ γ

A₄ Β

A₅ α) δ

β) η

γ) δ

δ) δ

ε) η

Θεμα Β

Φ. Β. ΟΝΤΙΣΤΗΡΟ ΜΕΣΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

$$\phi = 2\pi \left(\frac{t}{T} - \frac{x}{\lambda} \right)$$

Συχνότητα

$$f_1 = 10^{15} \text{ Hz}$$

$$\lambda_{\text{max}(1)} = 3 \cdot 10^{-7} \text{ m}$$

Νόμος Wien

Wien

$$\lambda_{\text{max}(1)} T_1 = \lambda_{\text{max}(2)} T_2$$

$$T_2 = 2 T_1$$

$$A_{p2} \quad \lambda_{Mdx(2)} = \frac{\lambda_{Mdx(1)}}{2}$$

$$\left. \begin{array}{l} C = \lambda_1 f_1 \\ C = \lambda_2 f_2 \end{array} \right\} \Rightarrow \lambda_1 f_1 = \lambda_2 f_2$$

$$f_2 = 2f_1$$

$$A_{p2} \quad \phi = 2\pi \left(2 \cdot 10^{15} t - \frac{2 \cdot 10^7}{3} x \right)$$

ω λ

B2

$$l_2 = 5l_1 \Rightarrow m v_2 \lambda_2 = 5 m v_1 \lambda_1$$

$$v_2 \lambda_2 = 5 v_1 \lambda_1$$

$$v_2 \frac{m v_2}{h} = 5 v_1 \frac{m v_1}{h}$$

ΦΡΟΝΤΙΣΤΗΡΙΟ ΜΕΣΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

$$v_2 = 5v_1$$

$$k_1 = \frac{h}{\lambda_1} - \phi$$

$$k_2 = \frac{h}{\lambda_2} - \phi$$

$$k_2 - k_1 = \frac{h}{\lambda_2} - \phi - \frac{h}{\lambda_1} + \phi \Rightarrow 4k_1 = \frac{h}{\lambda_2} - \frac{h}{\lambda_1}$$

→

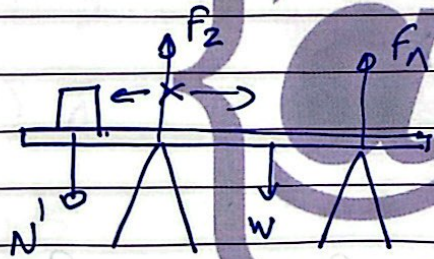
$$\phi(\omega) \quad \lambda_2 = \frac{\lambda_1}{2} \quad f_2 = 2f_1$$

$$\text{ApL. } 4L = h\lambda_2 f_1 - h\lambda_1 f_1$$

$$4L(1 - \phi) = h\lambda_1 f_1$$

$$\phi = 2,5 \text{ eV.}$$

B3



$$\sum \tau_2 = 0 \quad \frac{W L}{4} = N' \left(x - \frac{L}{4}\right) \Rightarrow N' g \frac{L}{4} = mg \left(x - \frac{L}{4}\right)$$

$$x = \frac{3L}{8}$$

$$\beta) \quad \vec{v} = v_{cm} + v_{\text{rot}}$$

$$v = 2v_{cm}$$

$$\frac{x}{t} = \frac{2s}{t} \quad \Rightarrow \quad s = \frac{3L}{16}$$