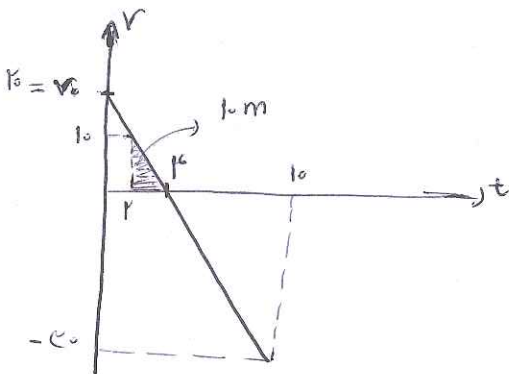


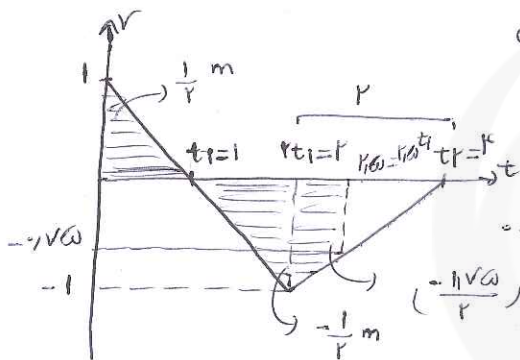
۱۴۶

ریاضه زمانی ۴.۵ ثانیه با جابجایی منفی یعنی در جهت بازه، یعنی در جهت منفی حرکت می‌کند. (t = ۴.۵)



$$0 < t < 10 \rightarrow v_{av} = \frac{v_0 + (-v_0)}{2} = -\frac{\omega m}{5}$$

۱۴۷



$$a_{av} = \frac{\Delta v}{\Delta t} \quad ; \quad s_{av} = \frac{L}{\Delta t}$$

با عدد کنار حل می‌کنیم:

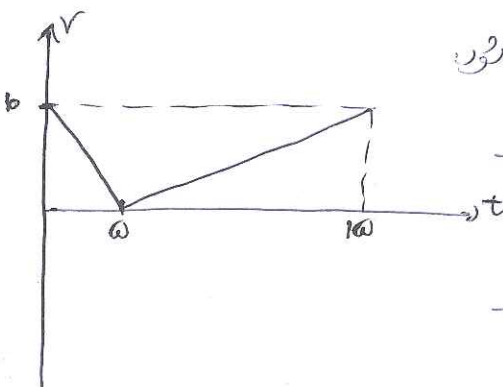
$$0 < t < t_1 \rightarrow s_{av1} = \frac{1}{2} \cdot \frac{1}{1} = \frac{1}{2} \frac{m}{s}$$

$$t_1 < t < t_2 \rightarrow s_{av2} = \frac{\frac{1}{2} + \frac{1}{2} \left( \frac{1/2 v_0}{1} \right)}{1/2} = \frac{3/4 v_0}{1/2} = \frac{3}{2} \frac{m}{s}$$

$$\rightarrow \frac{s_{av1}}{s_{av2}} = \frac{1}{3}$$

۱۴۸

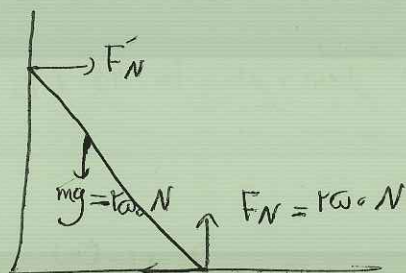
جهت برابر است یعنی در جهت منفی حرکت می‌کند.   
 ولی جهت برابر است (در جهت بازه) یعنی در جهت مثبت حرکت می‌کند.



$$\rightarrow \Delta x = L \quad \checkmark \quad \left( \begin{array}{l} \text{چون جهت مثبت است} \\ \text{یعنی در جهت مثبت حرکت می‌کند} \end{array} \right)$$

$$\rightarrow a_{av} = \frac{\Delta v}{\Delta t} = 0 \quad \checkmark$$

$$\rightarrow \Delta x \neq 0 \rightarrow v_{av} \neq 0 \quad \times$$

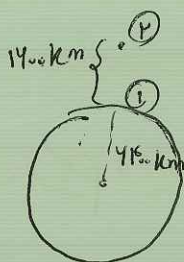


$$F_{s, \max} = \mu_s \cdot F_N = (0.7) (200) = 140 \text{ N}$$

$$r = \omega \sqrt{29} \text{ N}$$

$$F_N = r\omega = \omega \cdot (\omega)$$

$$F_{s, \max} = 140 = \omega \cdot (2)$$



$$\frac{g_r}{g_1} = \left(\frac{r_1}{r_2}\right)^2$$

$$\rightarrow \frac{g_r}{9.8} = \left(\frac{4000}{10000}\right)^2 = \left(\frac{1}{10}\right)^2 = \frac{1}{100}$$

$$\rightarrow g_r = 4,272 \text{ m/s}^2$$

$$P_{\max} = m v_{\max} \rightarrow 2 \times 10^{-4} \pi = 10^{-1} v_m \rightarrow v_m = 2 \times 10^{-3} \pi \frac{\text{m}}{\text{s}}$$

$$E = \frac{1}{2} m v_m^2 = \left(\frac{1}{2}\right) (10^{-1}) (2 \times 10^{-3} \pi)^2 = 2 \times 10^{-6} \pi^2 = 20 \pi^2 \mu\text{J}$$

$$A = 4 \text{ cm}$$

$$x = 2 \text{ cm} \xrightarrow{|a| = \omega^2 x} \frac{\pi^2}{2} = \omega^2 \left(\frac{2}{100}\right) \rightarrow \omega^2 = 25 \pi^2 \rightarrow \omega = 5 \pi \text{ rad/s}$$

$$v_m = A\omega = \left(\frac{4}{100}\right) (5\pi) = \frac{\pi}{5} \frac{\text{m}}{\text{s}}$$

زه a در حال باسیر کردن است بد موج غلاف جهت محور x در حال انتشار است

و چون زه b نفس a بد شنا زه b در جهت محور y است

$$\beta = 10 \log \frac{I}{I_0} = k \log (2\sqrt{10} \times 10^{\omega}) = 10 \left[ \log 2 + \log 10^{\frac{1}{2}} + \log 10^{\omega} \right] \quad (14)$$

$$\rightarrow \beta = 10 \left[ \frac{\omega}{\lambda} + \frac{\omega}{2} + \omega \right] = \omega \lambda dB \quad (15)$$

$$\phi_r - \phi_i = \frac{c}{\lambda_r} - \frac{c}{\lambda_i} \rightarrow \frac{\frac{c\omega}{\lambda_r} \times 10^{\frac{1}{2}}}{c \times 10^{\omega}} = \frac{1}{\lambda_r} - \frac{1}{\lambda_i} = \frac{c\omega}{v\lambda} (\mu m)^{-1} \quad (16)$$

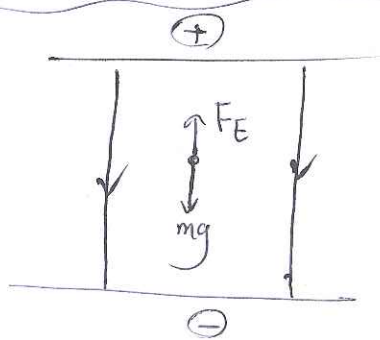
$$\begin{matrix} n'=2 \\ n=1 \end{matrix} \rightarrow \frac{1}{\lambda_r} = \frac{1}{100} \left( \frac{1}{2} - \frac{1}{1} \right) = \frac{1}{v\lambda} (nm)^{-1} = \frac{2\omega}{1\lambda} (\mu m)^{-1}$$

$$\begin{matrix} n'=2 \\ n=2 \end{matrix} \rightarrow \frac{1}{\lambda_p} = \frac{1}{100} \left( \frac{1}{2} - \frac{1}{2} \right) = \frac{c}{14\omega} (nm)^{-1} = \frac{1\omega}{\lambda} (\mu m)^{-1}$$

$$\rightarrow \frac{1\omega}{\lambda} - \frac{2\omega}{1\lambda} = \frac{v_0}{\lambda(1\lambda)} = \frac{c\omega}{v\lambda} (\mu m)^{-1}$$

$$\begin{matrix} n_L=1 \\ n_U=\omega \end{matrix} \quad h\phi = E_U - E_L \rightarrow \phi = \frac{-10\omega^2 - (-10/4)}{4 \times 10^{-18}} \quad (17)$$

$$= 2,246 \times 10^{18} \text{ Hz}$$



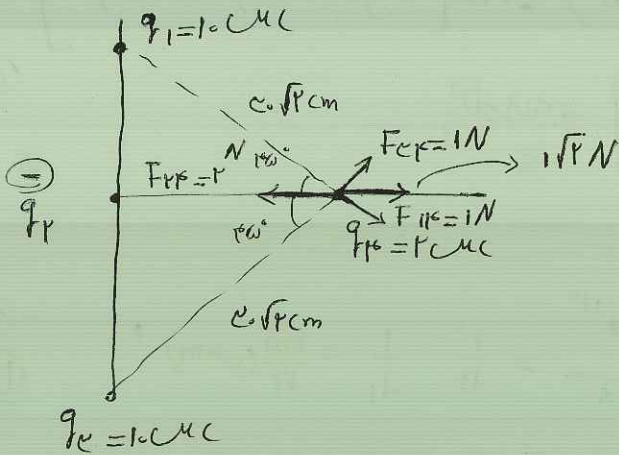
$q < 0$

$$F_E = mg = E|q| \rightarrow |q| = \frac{(\omega \times 10^{\omega}) (10)}{10^{\frac{1}{2}}} = \omega \times 10^{-\frac{1}{2}}$$

$$\rightarrow q = -\omega \mu C$$



۱۸۱

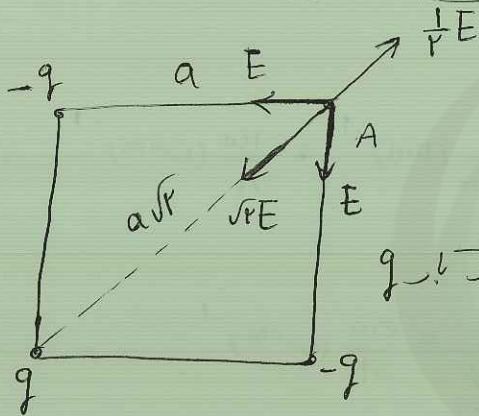


$$F_{12} = F_{24} = \frac{(9 \cdot 10^9)(10)(2)}{900(2)} = 1N$$

$$F_{24} = 2N \rightarrow r = \frac{9 \cdot 10^9 (2)(2)}{900}$$

$$\rightarrow q_{r2} = -10 \mu C$$

۱۸۹

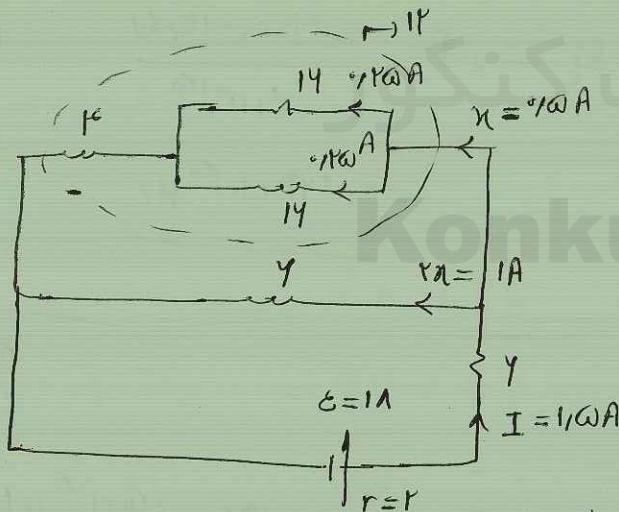


$$E_A = \sqrt{2} E - \frac{1}{r} E$$

$$q \text{ at } A: E_A = \sqrt{2} E$$

$$E_A' - E_A = \frac{1}{r} E = \frac{1}{r} \times \frac{(9 \times 10^9)(q^2)}{900} = 1000 \frac{N}{C}$$

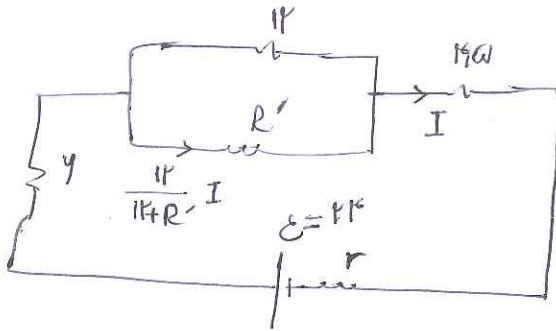
۱۹۰



$$R_{eq} = 10 \Omega$$

$$I = \frac{\epsilon}{R_{eq} + r} = \frac{1A}{12} = 1/12 A$$

$$I' = I - 1/2 A = 1/12 A - 1/2 A = -5/12 A$$



$$\frac{9}{P} I^2 = (12) R' \left( \frac{12}{12+R'} I \right)^2$$

$$\rightarrow \frac{9}{P} = R' \left( \frac{12}{12+R'} \right)^2$$

جواب معادله

$$R' = 4\Omega, R' = 44\Omega$$

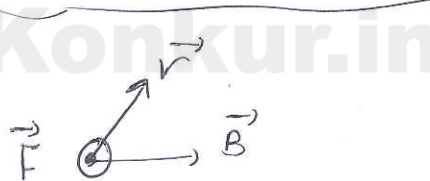
41

42

با بستن کلید، لامپ به اتصال کوتاه من شود (Reg ↓) این جریان مدار اقلین من باید در شبکه اختلاقی بتواند روسه باند (↑ v = ε - rI) کاهش من باید و اختلاقی بتواند روسه لامپ ها (1) و (2) اقلین من باید به رالف و روسه صبراج.

$$B = \frac{\mu_0 N I}{L} = \frac{(12 \times 10^{-7}) (50 \times 10^2) (10 \times 10^{-1})}{2 \times 10^{-1}} = 24 \times 10^{-4} T = 24 G$$

43



44

$$I = I_m \sin\left(\frac{2\pi}{T} t\right)$$

45

$$I_m = \omega A$$

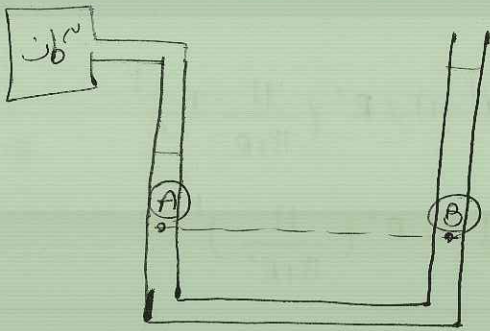
$$T = \frac{1}{\omega} s$$

$$t = \frac{c}{f_{oc}} s$$

$$I = \omega \sin\left(100\pi \left(\frac{c}{f_{oc}}\right)\right) = \omega \sin\left(\frac{c\pi}{f}\right) = \frac{\omega \sqrt{P}}{r} A$$



(۴۶)



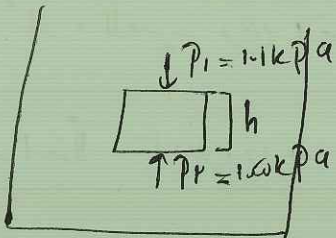
$$P_A = P_B \rightarrow (Pgh)_{\text{جوئی}} + P_{\text{باز}} = (Pgh)_{\text{مائع}} + P_0$$

$$P_{\text{باز}} - P_0 = -\rho g h$$

$$(12400) - (101325) = -\rho_{\text{مائع}} (10) \left(\frac{1}{100}\right) - 101325 = \rho_{\text{مائع}} (10) \left(\frac{1}{100}\right)$$

$$\rightarrow \rho_{\text{مائع}} = 1100 \text{ kg/m}^3$$

(۴۷)

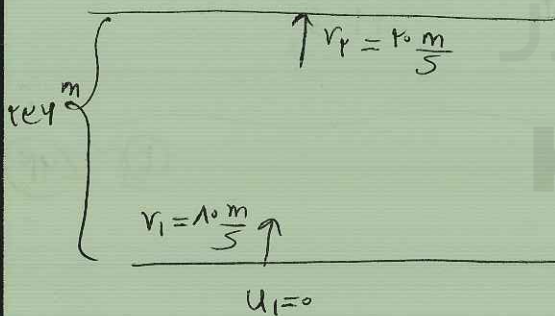


$$P_2 - P_1 = \rho g h$$

$$\rightarrow 1500 - 1100 = \rho (10) \left(\frac{1}{10}\right) \rightarrow \rho_{\text{مائع}} = 2000 \text{ kg/m}^3$$

$$= 2000 \frac{\text{g}}{\text{Lit}}$$

(۴۸)



$$E_r = E_i + W_{\text{ف}} \rightarrow K_r + U_r = K_i + W_{\text{ف}}$$

$$\rightarrow \frac{1}{2} m (10^2) + m(10)(44) = \frac{1}{2} m (44^2) + W_{\text{ف}}$$

$$\rightarrow W_{\text{ف}} = -440 \text{ J}$$

$$\% \frac{|W_{\text{ف}}| \times 100}{K_i} = \% \frac{440 \text{ J} \times 100}{\frac{1}{2} m (10^2)} = \% \frac{440 \times 100}{50} = 880\%$$

$$W_{mg} = -mg \Delta h = -(2)(10)(10) = -100 \text{ J}$$

(۶۹)

(۴)

$$\Delta F = \frac{g}{\omega} \Delta \theta \rightarrow 122 - (-51) = \frac{g}{\omega} \Delta \theta = 110$$

(۷۰)

$$\rightarrow \Delta \theta = 100^\circ \text{C}$$

$$\Delta L = \alpha L_1 \Delta \theta = (11.5 \times 10^{-6})(1151)(10^2) \approx 1.3 \text{ m}$$



(۷۱)

(۴)

$$Q_t = m \left( \frac{1}{T} C \right) (10) + m (100 C) + m C (10) = 900 m C$$

$$\rightarrow Q_t = (900) \left( \frac{1}{T} \right) (122) = 199,800 \text{ J}$$

$C = C$   
 $L_f = 100 C$   
 $C_{یخ} = \frac{1}{T} C$

(۷۲)

(۲) رر و الی:  $\beta^+$  پوزیترون، نوترون تبدیل به پروتون و پوزیترون می‌شود و نور و حرارت



(۴) (۷۳)

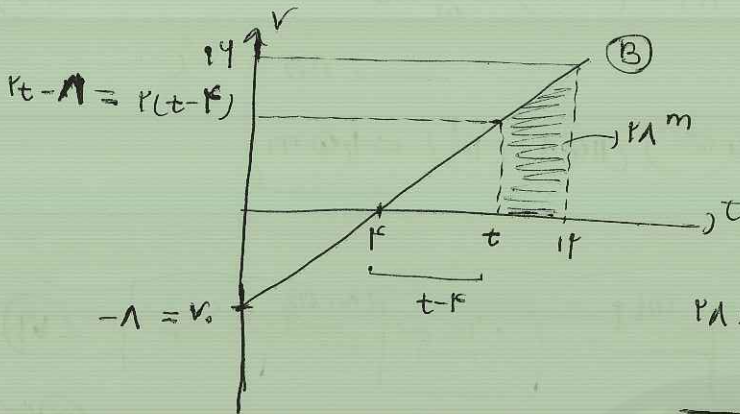
(۱) (۷۴) ر از آن بجز نوترون خنک و رر نماند



$$v_A = -\frac{24}{12} = -2 \frac{m}{s} \quad (x_A = v_A t + x_{0A})$$

$$(14) \quad (16)$$

$$t = 12s \rightarrow v_B = \frac{14}{2} (2) = 14 \frac{m}{s}$$



$$x_A = \frac{v_A + v_B}{2} (t - t_0) = \frac{-2 + 12}{2} (10 - 0) = 50 \text{ m}$$

$$x_A = \left( \frac{v_A + v_B}{2} \right) (t - t_0) = (t + 10) (12 - t)$$

$$\rightarrow t = 10s \rightarrow x_A = -2(10) + 4(10) = 20 \text{ m}$$

سایت کنکور

Konkur.in