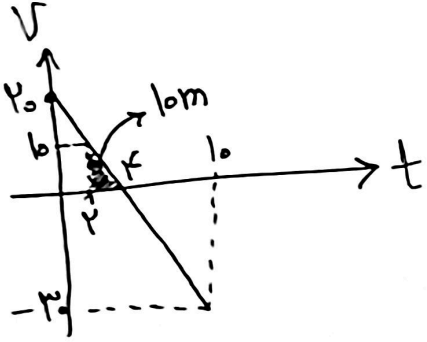


مومن کرمی

باسم تشریحی فزیک (رہنما تجربے)

۴۶ - تشریح ۱

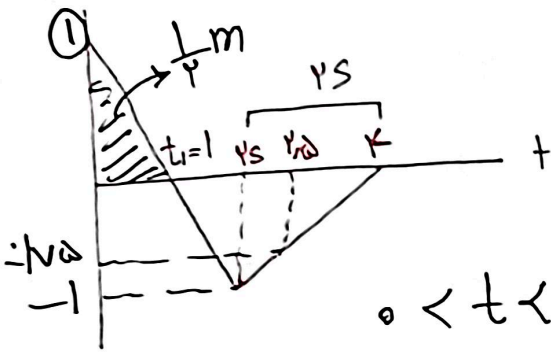
$\Delta x = \Delta x - \Delta x = 0 \rightarrow$ بنابراین دو وسط بازہ
سرعت منفردہ



$$0 < t < t_0 \rightarrow v_{av} = \frac{v_i + v_f}{2} = \frac{v_0 + (-v_0)}{2} = 0$$

۴۷ - تشریح ۳

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

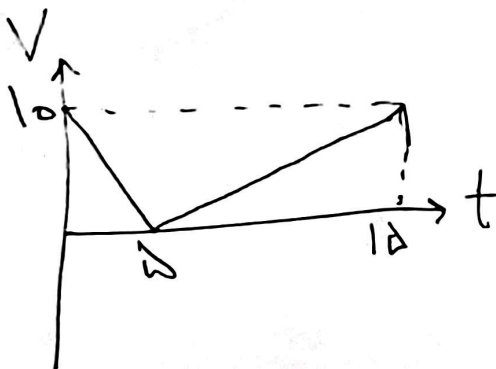


$$0 < t < t_1 \rightarrow S_{av} = \frac{\frac{1}{2} L}{t} = \frac{1}{2} \frac{m}{s}$$

$$t_1 < t < t_1 + t_2 \rightarrow S_{av} = \frac{\frac{1}{2} L + \frac{1}{2} L \left(\frac{1}{2} \frac{v_0}{c} \right)}{t_2} = \frac{\Delta}{2} \frac{m}{s}$$

$$\frac{S_{av1}}{S_{av2}} = \frac{k}{2}$$

۴۸ - تشریح ۲



صحت بردار (الف)
سرعت عموماً منفردہ

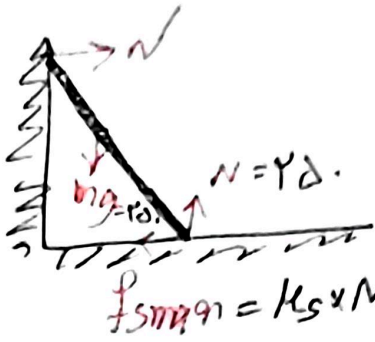
ب) $\Delta x = L$

و) $a_{av} = \frac{\Delta v}{\Delta t} = 0$

ج) $\Delta x \neq 0 \quad v_{av} \neq 0$

مکان کروی

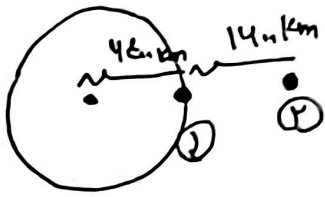
۴۹ - تمرین ۱



$$R = \sqrt{F^2 + N^2} = \sqrt{1.5^2 + 2.0^2} = \boxed{2.5 \sqrt{49}}$$

$$F_{spring} = k_s \times N = \frac{1}{2} \times 250 = 125 N$$

۵۰ - تمرین ۲



$$\frac{g_r}{g_1} = \left(\frac{r_1}{r_c}\right)^2 \rightarrow \frac{g_r}{g_1} = \left(\frac{46.0}{14.0}\right)^2$$

$$\rightarrow \left(\frac{1}{1.6}\right)^2 = \frac{4F}{1.1} \rightarrow g_r = 4.0 \text{ m/s}^2$$

$$P_{max} = m V_{max} \rightarrow 2 \times 10^{-2} \pi = 10^{-1} V_{max}$$

۵۱ - تمرین ۱

$$V_{max} = 2 \times 10^{-2} \pi \frac{m}{s}$$

$$E = \frac{1}{2} m V_m^2 \rightarrow \left(\frac{1}{2}\right) (10^{-1}) (2 \times 10^{-2} \pi)^2 = 2 \times 10^{-5} \pi^2 = 1.6 \pi^2 \mu$$

۵۲ - تمرین ۲

$$A = 2 \text{ cm}$$

$$r = 2 \text{ cm}$$

$$V_m = A \omega = \left(\frac{1}{2}\right) (2 \text{ cm}) = \frac{\pi}{2} \frac{m}{s}$$

$$|a| = \omega^2 r = \frac{r^2}{r} = \omega^2 \left(\frac{r}{1.1}\right)$$

$$\omega^2 = 2 \text{ cm}^{-1}$$

$$\omega = 2 \pi \frac{\text{Rad}}{s}$$

مسئله ۱

۵۳ - گزینه ۱

a ← در حال پهن شدن → موج خلافت است

در حال (تنگ)

b ← تنگی → کتاب در جهت محور y حرکت

۵۴ - گزینه ۳

$$\beta = 10 \log \frac{I}{I_0} = 10 \log (10^{10} \times 10^5) = 10 [\log 10^{15} + \log 10^5] = 10 [\log 10^{15} + \log 10^5]$$

$$\beta = 10 [\log 10^{15} + \log 10^5] = 20 \text{ dB}$$

$$f_c - f_1 = \frac{c}{\lambda_1} - \frac{c}{\lambda_2} \rightarrow \frac{3 \times 10^8 \times 10^6}{3 \times 10^8} - \frac{1}{\lambda_2} - \frac{1}{\lambda_1} = \frac{3 \times 10^8}{v \mu} \mu m^{-1}$$

$$\begin{matrix} n' = 2 \\ n = 3 \end{matrix} \rightarrow \frac{1}{\lambda_1} = \frac{1}{\lambda_2} \left(\frac{1}{2} - \frac{1}{3} \right) \rightarrow \frac{1}{v \mu} \mu m^{-1} \rightarrow \frac{3 \times 10^8}{1 \mu} \mu m^{-1}$$

$$\begin{matrix} n' = 2 \\ n = 2 \end{matrix} \rightarrow \frac{1}{\lambda_2} = \frac{1}{\lambda_1} \left(\frac{1}{2} - \frac{1}{2} \right) \rightarrow \frac{3 \times 10^8}{1 \mu} \mu m^{-1}$$

$$\frac{1 \mu}{\lambda} - \frac{c \mu}{1 \mu} = \frac{v_0}{\lambda (\mu m)} = \frac{3 \times 10^8}{v c} (\mu m)^{-1}$$

n' = 2 با ۱

مسئله ۱

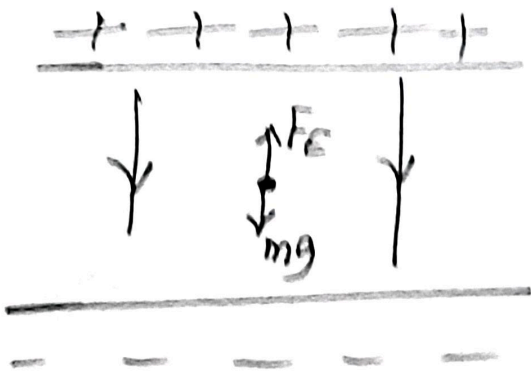
۵۹ - تیزشده

$$h\nu = E_U - E_L \rightarrow \nu = \frac{12.4 - 11.4}{2\pi h}$$

$$h\nu = 0$$

$$\nu = 246 \times 10^{10} \text{ Hz}$$

۵۷ - تیزشده

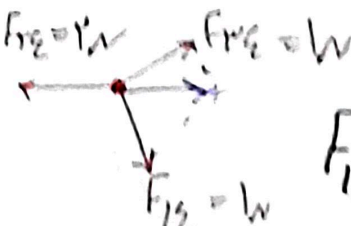


$$F_E = mg - E |g|$$

$$|g| = \frac{2 \times 10^{-20} \times 10^8}{10^{-18}} = 2 \times 10^{-6} \text{ C}$$

$$g = -\Delta \mu c$$

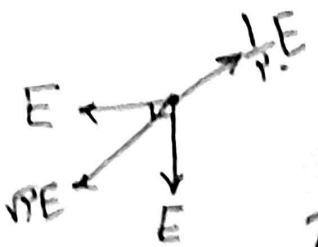
۵۸ - تیزشده



$$F_{r1} = F_{r2} = \frac{9 \times 10^{-20} \times 2}{9 \times 10^{-20}} = 2 \text{ N}$$

$$F_{r2} = 2 \text{ N} \rightarrow r = \frac{9 \times 10^{-20} \times (9 \times 10^{-20}) \times 2}{9 \times 10^{-20}} \rightarrow r = -10^{-19}$$

۵۹ - تیزشده



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

$$E_A' = \sqrt{2} E$$

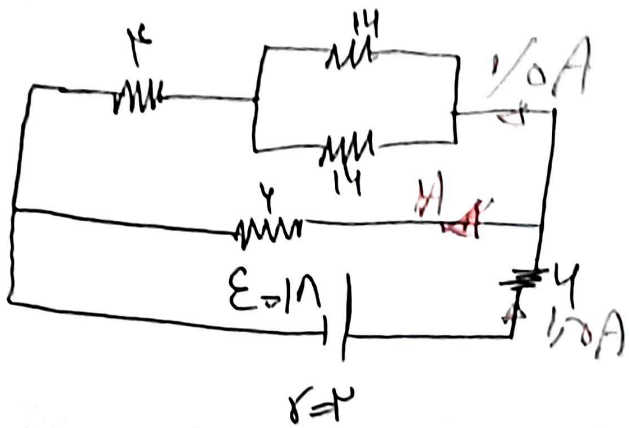
$$E_A - E_A' = \frac{1}{2} E - \frac{1}{2} \times \frac{9 \times 10^8 \times 20}{900} = 1000 \text{ V}$$

انرژی است

40 - کزنه 1

$$R_T = 6 \Omega$$

$$I = \frac{\mathcal{E}}{R_T + r} = \frac{1 \text{ V}}{10} = 0.1 \text{ A}$$



$$I' = I - \frac{1}{50} = 0.1 \text{ A} - \frac{1}{50} = \frac{1}{2} \text{ A}$$

آسیب

41 - کزنه 1

$$\frac{9}{4} I^2 = r R \left(\frac{12}{12 + R'} I \right)^2$$

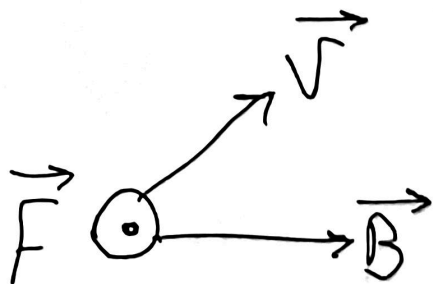
$$\frac{9}{\mathcal{E}} = R' \left(\frac{12}{12 + R'} \right)^2 \rightarrow R' = \mathcal{E} \quad R' = 1 \text{ V}$$

در کزنه ها است

42 - کزنه 1 (الف و ب) درست است

43 - کزنه 1

$$B = \frac{\mu_0 N I}{L} = \frac{12 \times 10^{-7} \times 10 \times 10^2 \times 1 \times 10^{-1}}{2 \times 10^{-1}} = 25 \times 10^{-6} = 25 \mu\text{T}$$



44 - کزنه 1

من رتبه

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

۴۵ - ترمیم

$$I_m = dA$$

$$T = \frac{1}{\omega} S \rightarrow I = d \sin\left(100\pi \left(\frac{\mu}{\epsilon_0}\right)\right) = d \sin\left(\frac{2\pi}{\epsilon_0}\right) = \frac{d\sqrt{\mu}}{c} A$$

$$t = \frac{\mu}{\epsilon_0} S$$

$$P_c \rightarrow P_0 = 20 \text{ kPa}$$

۴۴ - ترمیم

$$P_A = P_B \rightarrow \underbrace{\rho g h}_{\text{عمود}} + \underbrace{P_c}_{\text{تنگ}} = \rho g h + P_0$$

$$13400 \times 10 \times \frac{20}{1000} = 20000 = \rho \times 10 \times \frac{1}{10} \rightarrow \rho = 1100 \text{ kg/m}^3$$

$$P_c - P_1 = \rho g h \rightarrow \epsilon_{\text{ن}} = \rho \times 10 \times \frac{1}{10}$$

۴۷ - ترمیم

$$\rightarrow \rho = 1000 \frac{\text{kg}}{\text{m}^3} = 1000 \frac{\text{g}}{\text{lit}}$$

۴۸ - ترمیم

$$E_f = E_1 + W_f \rightarrow K_f + U_f = K_1 + W_f$$

$$\frac{1}{2} m (\epsilon_{\text{ن}}) + m (1.) (234) = \frac{1}{2} m (4\epsilon_{\text{ن}}) + W_f$$

$$W_f = -4\epsilon_{\text{ن}} m$$

$$\therefore \frac{|W_f|}{K_1} \times 100 = \frac{4\epsilon_{\text{ن}} m}{2210} \times 100 = 18\%$$

$$W_{mg} = -mg\Delta h = -(2)(10)(15) = -100 \text{ J}$$

$$\Delta F = \frac{q}{\omega} \Delta \theta \rightarrow 122 - (-21) = \frac{q}{\omega} \Delta \theta$$

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

$$\Delta L = \alpha L_1 \Delta \theta = (1.3 \times 10^{-5}) (1100)(100) = \underline{\underline{1.43 \text{ m}}}$$

$$-10 \text{ e}^- \rightarrow 0 \text{ e}^- \rightarrow 0 \text{ e}^- \rightarrow 10 \text{ e}^-$$

$$Q_t = m \left(\frac{1}{r} C \right) (10) + m (100 C) + m C (10) = 90 m C$$

$$Q_t = 90 \times \frac{1}{r} \times 4.2 = 199.5 \text{ KJ}$$

$${}^A_2 X_N \rightarrow {}^A Y + e^+$$

در نگاه سونار + اندازه گیری تندی شارب خون

$$v_A = -\frac{34}{12} = -2.83 \text{ m/s}$$

$$t = 12 \text{ s} \rightarrow v_B = \frac{14}{12} \text{ (m)} = 1.17 \text{ m/s}$$

$$r_A = \left(\frac{r t + 1}{r} \right) (12 - t) = (t + 12) (12 - t)$$

$$t = 10 \text{ s} \rightarrow r_A = -12(10) + 48 = \underline{\underline{36 \text{ cm}}}$$

