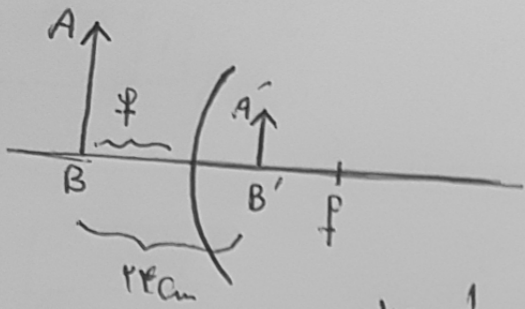


سایت کنکور



۴ | ۲.۴

$$m = \frac{1}{r} \Rightarrow P = f \Rightarrow q = \frac{f}{r} \Rightarrow f + \frac{f}{r} = 2f \Rightarrow f = 14 \text{ cm}$$

$$\Rightarrow \text{مسافت بین اجسام} = P + 2f = 3f = 3 \times 14 = 42$$

$$P_1 = 4 \omega f \Rightarrow m = 2 \Rightarrow AB + A'B' = 4 \text{ cm} \Rightarrow AB = 2 \text{ cm}$$

۱ | ۲.۷

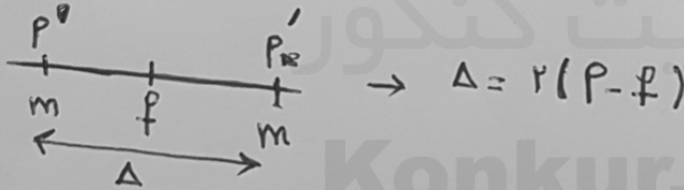
$$P_2 = P_1 + P_0 = 2f \Rightarrow m = \frac{1}{n-1} = \frac{1}{2} \Rightarrow A'B' = \frac{AB}{2} = 1 \text{ cm}$$

$$\textcircled{1} \text{ در } f = \frac{m_1 m_2 r}{m_1 + m_2} \Delta p \Rightarrow f = \frac{m^2}{2m} \times \Delta \Rightarrow \Delta = \frac{2f}{m}$$

۳ | ۲.۸

$$\Rightarrow \Delta = \frac{2f}{\frac{f}{P-f}} = 2(P-f)$$

مسئله ۲



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سایت کنکور

$$\rightarrow \Delta = 2(P-f)$$

$$a = \frac{F}{m} = \frac{r}{\omega} \Rightarrow \begin{cases} \Delta x_r = \frac{1}{r} a t^r = \frac{1}{r} \times \frac{r}{\omega} \times (r)^r = \frac{r}{\omega} = 1 \text{ m} \\ \Delta x_1 = \frac{1}{r} a t^r = \frac{1}{r} \times \frac{r}{\omega} \times (1)^r = \frac{1}{\omega} = 1 \text{ s} \end{cases} \rightarrow \Delta x = 1, 2$$

$$W = Fd \xrightarrow{d=1, 2} W = 1, 2 \text{ J}$$

۲ | ۲.۹

$$P = \frac{mg}{A} \xrightarrow{A, g, m} P_i = P_r$$

۱ | ۲.۱۰

۳ | ۲۱۱

$$m \Delta \theta = m' L \omega \Rightarrow r_1 r_2 \times \dots \times \Delta \theta = \omega \times r_1 r_2 \times l \dots$$

۲ | ۲۱۲

$$\rightarrow \Delta \theta = \frac{\omega \times r_1 r_2}{r_1 r_2} = \frac{11 r_1 \dots}{11 r_2} = 1 \dots \Rightarrow \theta - 1 \dots = 1 \dots \rightarrow \theta = 1 \dots$$

۳ | ۲۱۳

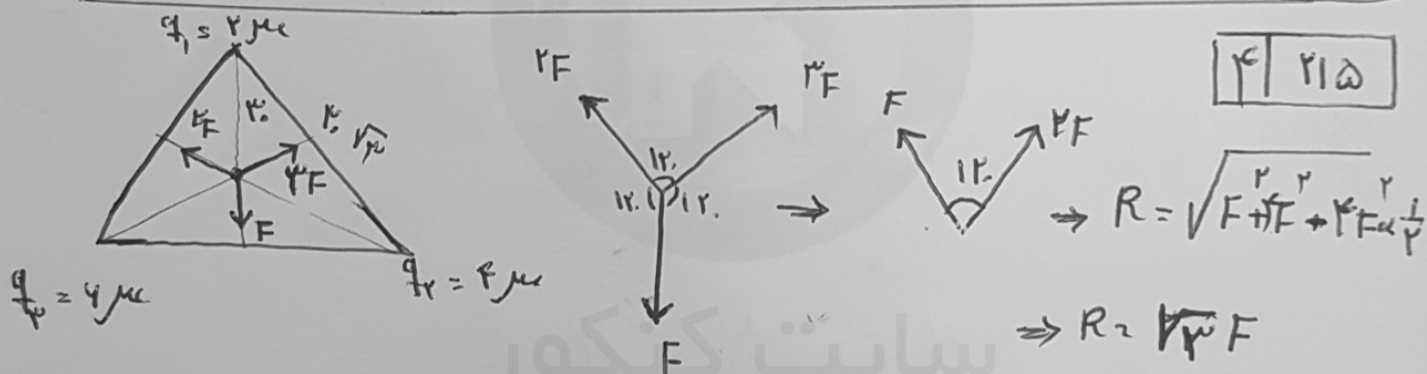
$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2} \Rightarrow \frac{l \omega \times V_1}{T_1} = \frac{r_2 l \times V_2}{T_2} \Rightarrow V_1 = 1 \omega \text{ Jut}$$

۲ | ۲۱۴

$$\frac{F_r'}{F_r} = \frac{q_1' q_2'}{q_1 q_2} \propto \left(\frac{r}{r'}\right)^2 \rightarrow F_r = \frac{(1-n)(1+n)}{1} \times \left(\frac{F}{\omega}\right)^2$$

$$\rightarrow \frac{F_r}{F_r'} = (1-n^2) \times \frac{1}{\omega^2} \rightarrow 1-n^2 = \frac{F}{F_r} \rightarrow n^2 = \frac{1}{F} \rightarrow \omega = \frac{1}{\sqrt{F}}$$

۴ | ۲۱۵



$$\rightarrow R = \sqrt{F^2 \left( \frac{q_1 \times 2 \times \omega}{r_1 \times r_2} \right)} = \sqrt{3} \times 1 = \sqrt{3}$$

1 | ۲۱۶

$$\cancel{\frac{U_r}{U_i}} \rightarrow \frac{q_r}{U_i} \quad U_r - U_i = \frac{1}{C} (q_r' - q_i') \quad \frac{q_r = q_i + r}{\Delta U = q_i \dots J} \quad q_i = 3 \mu$$

$$\rightarrow U_i = \frac{1}{r} \frac{q_r'}{C} = 1 \dots$$

$$P = \frac{V^2}{R_T} \rightarrow \frac{P_r}{P_1} = \frac{R_{T1}}{R_{T_r}} \rightarrow \frac{P_r}{P_1} = \frac{rR}{R} = f \rightarrow P_r = 12 \omega$$

۴/۲۸

$\begin{cases} \text{circuit 1: } \epsilon = 12, R = 2f \rightarrow I_1 = \frac{12}{2f} = 6 \\ \text{circuit 2: } \epsilon = 12, R_r = 12 \rightarrow I_r = \frac{12}{12} = 1 \end{cases}$

$\rightarrow \begin{cases} P_1 = I_1^2 R_1 = 6^2 \times 2f = 72 \\ P_r = I_r^2 R_r = 1^2 \times 12 = 12 \end{cases} \rightarrow \Delta P = 60$

۳/۲۸

$\otimes \xrightarrow{d} A \xrightarrow{rd} \odot$

$$I_1 = rI, I_2 = I \rightarrow B = \frac{\mu_0 (\Delta I)}{2\pi r d} = \frac{\Delta \mu_0 I}{\pi r d}$$

۴/۲۹

$$I = \frac{N}{R} \frac{d\phi}{dt} = \frac{1}{\omega} \times \frac{\Delta}{l} \times 1 \dots \pi \sin 1 \dots \pi t$$

$I_{max} = \pi$

۱/۲۲

$v_A = 0, v_B = 2 \text{ m/s}$

$v = 1$

$\bar{v} = \frac{v_1 + v_2}{2} = 1$

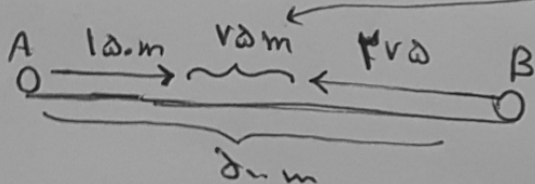
$l = 1 \text{ m}$

۲/۲۲۱

$$\Delta x_B = \frac{1}{2} a t^2 + v_0 t = \frac{a_2 - \frac{\Delta}{r}}{v_0} \rightarrow \Delta x_B = \frac{1}{2} \times (-\frac{\Delta}{r}) \times 1 + 1 \times 1 = 1 - \frac{\Delta}{2r}$$

۲/۲۲۲

$$\Delta x_A = S = \frac{v_1 \times l}{r} = 1 \text{ m}$$



۳۲۳

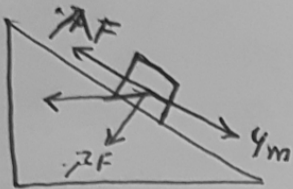
$$\bar{a} = \frac{a_0 + a_1}{2} = \frac{2}{1} \rightarrow a_0 = 12$$

۴۲۴

$$a = \mu_k g = 2 \times 10 = 20 \text{ m/s}^2$$

$$x = \frac{v_0^2}{2a} = \frac{22^2}{2 \times 20} = \frac{22^2}{40} = 12.1 \text{ m}$$

۱۲۵



$$N - 4m - \mu_k (N + 4m) = ma$$

$$\rightarrow 20 - 2m - \frac{1}{10} (10 + 4m) = 4m$$

$$\rightarrow m = 12.1 \text{ kg}$$

۱۲۶

$$\frac{F}{3} = \frac{F'}{4} = \frac{F''}{5} \rightarrow F = \frac{3}{4} F' = \frac{3}{5} F''$$

۲۲۷

$$\frac{T}{2} = \frac{1}{2} \rightarrow T = 1 \text{ s} \rightarrow t = \frac{1}{4} \text{ s} = \frac{1}{4} T \rightarrow \Delta \varphi = \frac{2\pi}{4}$$

$$\rightarrow a_m = v_m \omega \Rightarrow \Delta x^r = v_m \times \frac{2\pi}{T} \rightarrow v_m = 2 \text{ m/s} = \sqrt{2} \text{ m/s}$$

$$\rightarrow K = \frac{1}{2} m v_m^2 = \frac{1}{2} m v_m^2 \omega^2 = \frac{1}{2} \times \frac{1}{10} \times \frac{14.1^2}{10} \times \frac{1}{4} = \frac{1}{2} \times 14.1^2 \times \frac{1}{40}$$

$$\Delta t = \frac{1}{f} \rightarrow \Delta x_{\text{max}} = 2A \sin \frac{\pi}{2} = \sqrt{2} A = 4\sqrt{2}$$

۴۲۸

$$\underline{\omega_B} \Rightarrow v_A = v_B, \lambda_B = 2\lambda_A \rightarrow \frac{T_A}{T_B} = \frac{\lambda_A}{\lambda_B} = \frac{1}{2}$$

۲۲۹

$$y_0 = 1.0 \text{ by } \frac{I}{I_0} \rightarrow \frac{I}{I_0} = 1 \rightarrow I = I_0 \times 1 = 1.0 \frac{\text{W}}{\text{m}^2}$$

۱۲۳۰

$$\rightarrow P = IA = 1.0^2 \times 4\pi r^2 = 1.0^2 \times 4\pi \times 2 = 1.0^2 \times 8\pi = 8\pi \text{ W}$$

$$\Delta f = f_2 - f_1 = v \Delta \omega \text{ Hz} \rightarrow f_2 - f_1 = v \Delta \omega \rightarrow f_2 = v \Delta \omega$$

$\downarrow$   
 $v f_1 = \Delta \omega$

۳۰ | ۲۳۱

$$\left\{ \begin{aligned} h f &= \frac{hc}{\lambda} = v_1 f e v \\ \Delta d = n \lambda &= \Delta \lambda = \Delta \omega \times \frac{hc}{v_1 f e v} = \Delta \omega \times \frac{10^{-10} \times 3 \times 10^8}{v_1 f} = v \Delta \omega \text{ nm} \end{aligned} \right.$$

۱ | ۲۳۲

$$k_m = \frac{h c}{\lambda} - \omega_0 = \frac{1240 \text{ eV} \cdot \text{nm}}{10 \text{ nm}} - \frac{1240 \text{ eV}}{31} =$$

۲ | ۲۳۳

$$\frac{1}{\lambda} = \frac{1}{10} \left( \frac{1}{17} - \frac{1}{47} \right) = \frac{1}{10} \left( \frac{1}{17} - \frac{1}{47} \right) \rightarrow \lambda = 21 \text{ nm}$$

۳ | ۲۳۴

$$N = \frac{N_0}{\frac{t}{T}} = \frac{N_0}{14} \rightarrow v \frac{t}{T} = v \rightarrow \frac{t}{T} = v \rightarrow T = \frac{t}{v} \text{ روز}$$

۴ | ۲۳۵

$$N = \frac{N_0}{\frac{t}{T}} = \frac{N_0}{\frac{1}{v}} = \frac{N_0}{v} = v \Delta \omega N_0$$

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