

۰۹۱۹۱۵۰۵۴۸۹

علی سعید الزاهد

[۴۶] گزینے ۲

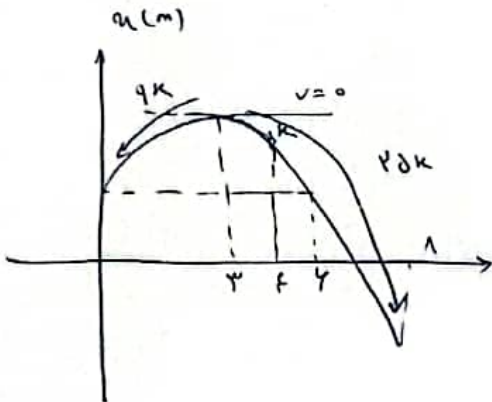
$t_1 = 5s$
 $a_1 = 1$

$t_2 = 10s$
 $a_2 = 24m$

$$v_{av} = \frac{\Delta a}{\Delta t} = \frac{24-1}{10-5} = \frac{11}{5} = 2.2$$

$a_3 = 1 - 1.2 = -0.2$

$$a = vt + a_1 = 3t - 1$$



$a = -2$ بہت تیز سے روکنا

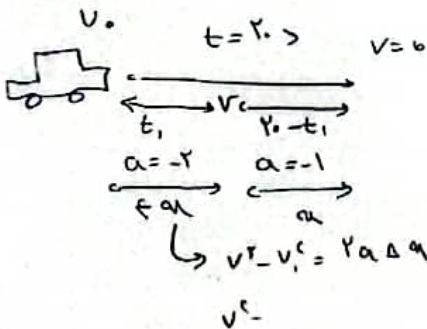
$L = 9k + k = 10k$

$$\rightarrow \frac{10k}{24k} = \frac{10}{24} = \frac{5}{12}$$

$L_{\text{rest}} = 20k - k = 19k$

[۴۷] گزینے ۲

[۴۸]



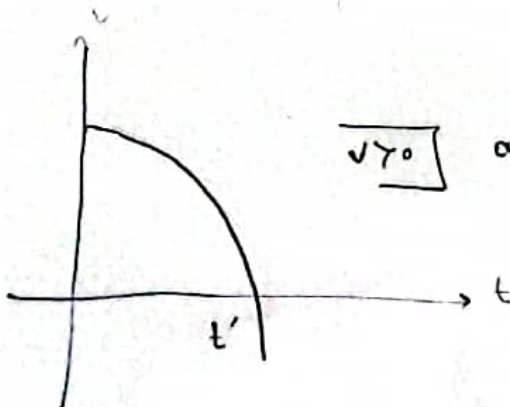
$$v_1 - v_2 = 2a - 2 \times t_1 \rightarrow v_0 = 3v$$

$$v_1 - v_2 = 2 \times 1 \times t_2$$

$$a = \frac{\Delta v}{\Delta t} \rightarrow t_2 = 10 \rightarrow \Delta a = \frac{1}{r} a t^2$$

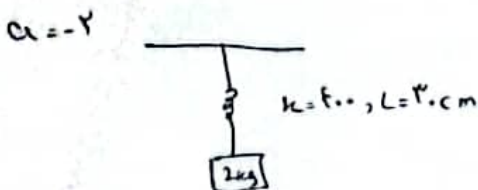
$$\Delta a = \frac{1}{r} \times 1 \times 20s^2 = 10 \text{ cm}$$

[۴۹] گزینے ۳



$$v > 0 \rightarrow a = \Delta v \rightarrow \Delta v < 0 \rightarrow a < 0$$

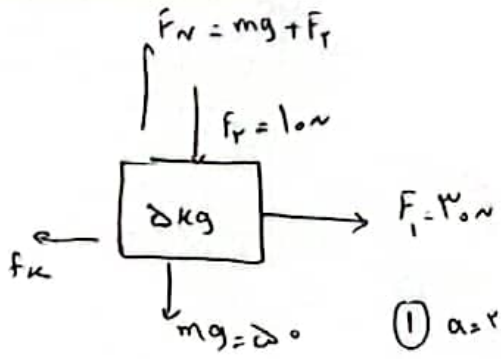
[۵۰] گزینے ۲



$$mg - ka = m \cdot a$$

$$\rightarrow ka = m(g - a)$$

$$a = \frac{m(g-a)}{k} = \frac{1}{10} \times \frac{100}{100} = \frac{1}{10} m = 10 \text{ cm} \rightarrow L_1 + L_2 + a = 3 \text{ cm}$$



① $a = 2 \rightarrow F_i - f_k = m \cdot a \rightarrow 20 - f_k = 10$

$\mu_k \frac{F_N}{N} = 20 \rightarrow \mu_k = \frac{1}{2}$ $f_k = 20 N$

② $a = -2 \rightarrow F_i - f_k = -10 \rightarrow f_k = 30 N$

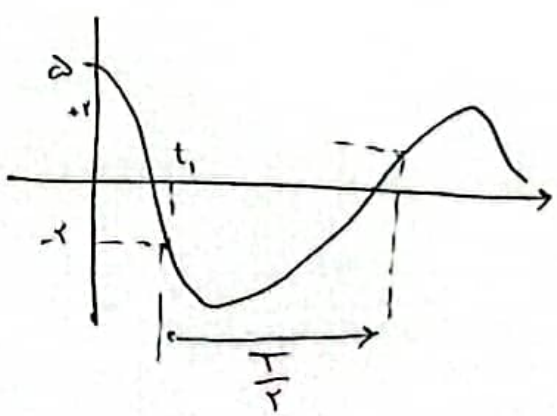
$\frac{1}{2} \mu_k F_N = 30 \rightarrow F_N = 120 N$

$120 = 20 + F_r \rightarrow F_r = 100 N$ ← ۱۰۰ N

$122 \frac{km}{h} = 30 \frac{m}{s}$
 $37 \frac{km}{h} = 10 \frac{m}{s}$

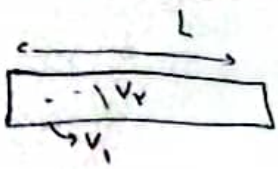
$F_{av} = \frac{\Delta P}{\Delta t} = \frac{20 \times (-10 - 30)}{0.5} = 20 \times 2 \times 2 = 80 N$

کتابخانه ۵۲



کتابخانه ۵۳

کتابخانه ۵۴



تندی حرکت ظاهر $v_1 > v_2$ تندی حرکت جامدادی

کتابخانه ۵۵

$\frac{L}{t_1} > \frac{L}{t_2} \rightarrow t_2 > t_1$

$t_2 = \frac{L}{v_2} \rightarrow t_2 - t_1 = \frac{L}{v_2} - \frac{L}{v_1} = L \frac{(v_1 - v_2)}{v_1 v_2}$
 $t_1 = \frac{L}{v_1}$

$f = 2 \times 10^{14} \text{ Hz}$, $\lambda = \frac{9}{10} \times 10^{-6} \text{ m}$ $n_s?$

[۵۷] کتاب ۳

$n = \frac{c}{v} \rightarrow v = \lambda f = \frac{9}{10} \times 10^{-6} \times 2 \times 10^{14} = \frac{18}{10} \times 10^8$

$n = \frac{3 \times 10^8}{\frac{18}{10} \times 10^8} = \frac{10}{6} = \frac{5}{3}$

[۵۸] کتاب ۳

$n = 2$

$\Delta E = E_2 - E_1 = 0.41 \times 10^{-19} \text{ J}$ [طیف ۱] $= 1.08 \times 10^{-19} \text{ J}$

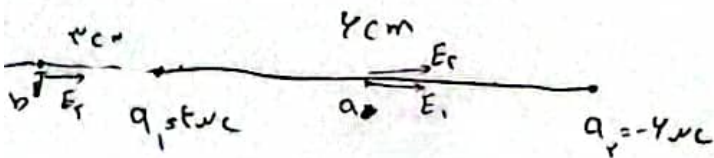
$\Delta E_{1-2} = E_2 - E_1 = 1.4, 3 \text{ cal}$

[۵۹] کتاب ۳

$n' = 2, n = 3 \rightarrow \frac{1}{\lambda} = R_H \left(\frac{1}{n'^2} - \frac{1}{n^2} \right)$

$\lambda = \frac{100 \times 49 \times 9}{4} = 11025 \text{ nm}$

[۶۰] کتاب ۳

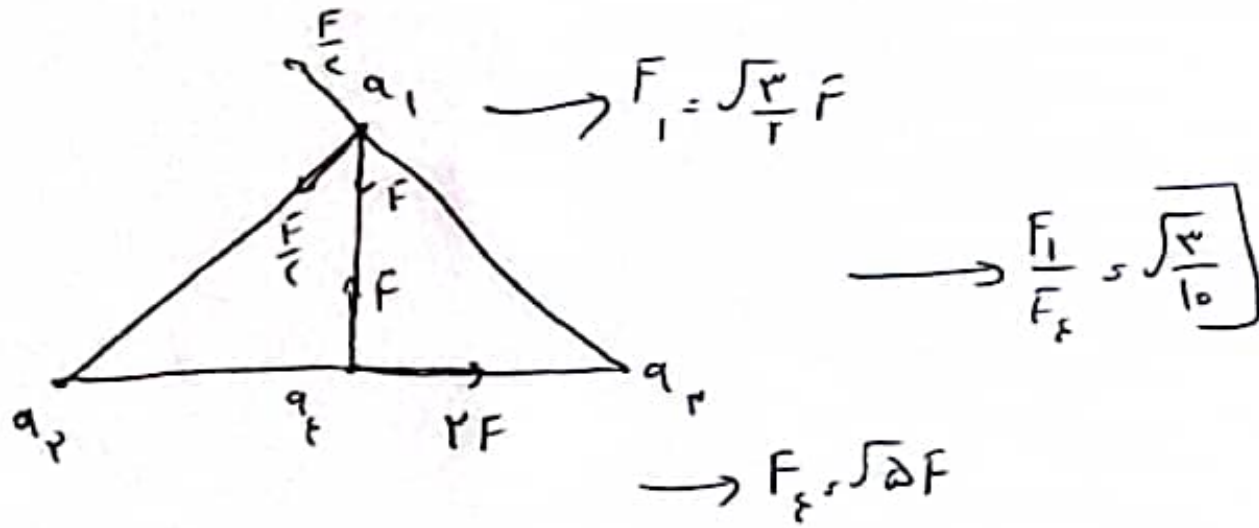


$\frac{E_a}{E_b} = \frac{10}{30} = \frac{1}{3} = \frac{9}{10 \times 3} = \frac{9}{30}$

$E_a = E_1 + E_2 = \frac{4k}{9} + \frac{fk}{9} = \frac{10k}{9}$

$E_b = |E_1 - E_2| = \frac{4k}{11} - \frac{fk}{9} = \frac{10k}{11}$

[۶۱] کتاب ۴



किं च $\boxed{42}$

گزینه ۱ [۴۳]

$C = \epsilon_0 \kappa A / d$, $q = 200 \mu C$ $u_1 = \frac{1}{2} \frac{q^2}{C} = \frac{1}{2} \times \frac{200 \times 200 \times 10^{-16}}{\epsilon_0 \kappa A / d} = \frac{1}{2} \times \frac{4 \times 10^{-16}}{\epsilon_0 \kappa A / d}$

$u_1 = \frac{4}{\epsilon_0 \kappa A / d} \times 10^{-16} = 4 \times 10^{-16} = 4 \text{ mJ}$

$C = \frac{\kappa \epsilon_0 A}{d}$ $C_2 = \frac{4}{\kappa} C_1 = \frac{4}{\kappa} \times \frac{\kappa \epsilon_0 A}{d} = 4 \frac{\epsilon_0 A}{d}$ $u_2 = \frac{4}{\kappa} u_1$

$u_2 = 4 \text{ mJ}$ $\Delta u = 2 \text{ mJ}$

$V = 220 \text{ V}$, $I = 10 \text{ A}$ $t = 5 \text{ h}$, $1 \text{ kWh} = 3600 \text{ Wh}$

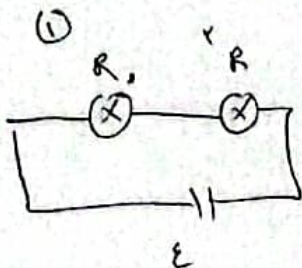
گزینه ۲ [۴۴]

$P = V \cdot I = 220 \times 10 = 2200 \text{ W}$

$u = P \cdot t = \frac{2200 \times 1800}{1000} = 22 \times 18 = 396 \text{ kWh}$

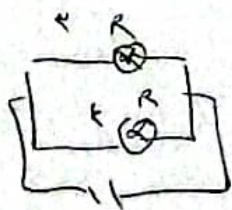
$t = 3 \times 60 = 180 \text{ h}$

گزینه ۳ = $396 \times 5 = 1980$

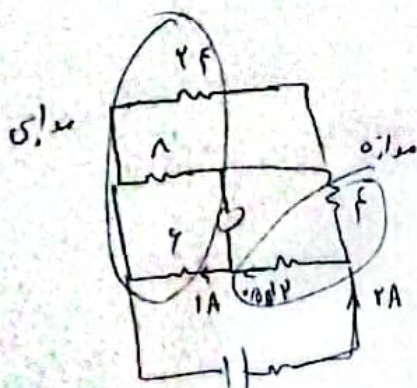


$I = \frac{E}{2R}$ $P_1 = R \frac{E^2}{4R^2} = \frac{E^2}{4R}$ $P_2 = \frac{E^2}{4R}$

گزینه ۳ [۴۵]



$I = \frac{E}{R/2} = \frac{2E}{R}$ $P_1 = R \frac{E^2}{R^2} = \frac{E^2}{R}$ $P_2 = \frac{E^2}{R}$



$R = 2$ $I = \frac{E}{2R} = \frac{14}{4} = 3.5 \text{ A}$

گزینه ۲ = 0.16 A

گزینه ۲ [۴۶]

$L = 3 \text{ cm} \rightarrow A = 900 \times 10^{-6} \text{ m}^2 = 9 \times 10^{-4} \text{ m}^2$ www.konkur.in

گزینہ ۴ [۶۷]

$T = f_0 \lambda \cdot T$, $\phi = B \cdot A \cos \theta = f \lambda \cdot r \times 9 \times 10^{-4} = 14 \times 10^{-4} \omega b = 3.6 \times 10^{-3}$

گزینہ ۲ [۶۸]

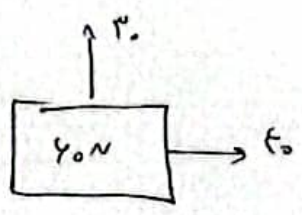
$P_i = P_f \rightarrow (\rho_f g h) + \rho_f g a = (\rho_f g h) + \rho_f g y \rightarrow \rho_f g y - \rho_f g a = \rho_f g h - \rho_f g h$

$P_B = \rho_f g a + P_0$
 $P_A = \rho_f g y + P_0$
 $\rightarrow P_A - P_B = \rho_f g y - \rho_f g a = 3 \rho_f g h - \rho_f g h = 2 \rho_f g h$

گزینہ ۳ [۶۹]

$v_r = \frac{Q}{A} v_1 \rightarrow \kappa_1 = \kappa_2 \rightarrow \frac{1}{r} m_1 v_1^2 = \frac{1}{r} m_2 v_2^2$

$\rightarrow m_1 \times v_1^2 = m_2 \times \frac{r_2}{r_1} v_1^2 \rightarrow m_2 = \frac{r_1}{r_2} m_1 \rightarrow \frac{9}{18} \times 11 = 3.6$



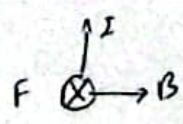
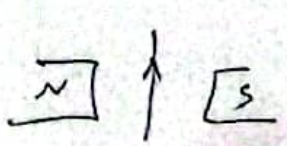
$d = 10$

$\omega = F d \cos \theta$, $F_0 \times 10 \times 1 = 400$

گزینہ ۲ [۷۰]

$\frac{\kappa g \cdot m^2}{A \cdot s^2} \rightarrow$ فارمولا

گزینہ ۱ [۷۱]



گزینہ ۴ [۷۲]

گزینہ ۱ [۷۳]

$$L = 100 \text{ m}, N = 200, I = 5.0 \times 10^{-3} \text{ A}$$

مسئله [VF]

$$B_s = \frac{\mu_0 N I}{L} = \frac{4\pi \times 10^{-7} \times 200 \times 5.0 \times 10^{-3}}{100 \times 10^{-2}} = 10 \times 10^{-2} \times 10^{-2} = 10 \times 10^{-4} = 10^{-3} \text{ T} = 1 \text{ mT}$$

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$$\sum Q = m_1 \times \frac{c}{r} \times 10 + m_1 \times 1 \cdot c + m_1 c \Delta = 100 m_1 c$$

$$Q_1 = m_1 c \times \Delta = \Delta \cdot m_1 c$$

$$\rightarrow Q_1 = Q_2$$

$$100 m_1 c = \Delta \cdot m_1 c$$

$$\frac{m_2}{m_1} = 100$$