

پانچ نام سوالات فزیک فلورین ۱۴.۳ نوبت اول اردیست ۱۴.۳

$$x = vt + x_0$$

۲ (۴۶)

$$\Delta x = v \Delta t$$

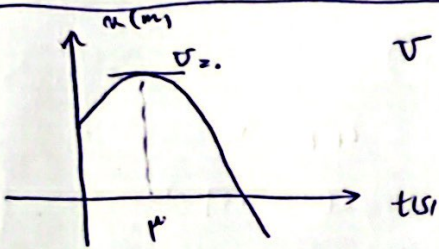
$$(24 - 1) = v(11 - 6)$$

$$13 = 5v \quad (v = 2.6)$$

$$\rightarrow x = 2.6t + x_0$$

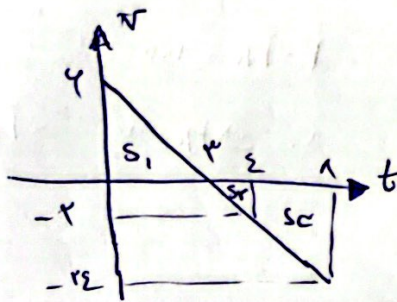
$$x = 2.6t - 6$$

فیزک حسب



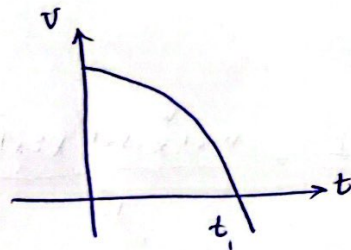
$$a = -2 \frac{m}{s^2}$$

$$v = at + v_0 \xrightarrow[t=3]{v_0} v_0 = 4 \frac{m}{s}$$



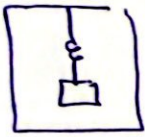
۳ (۴۷)

$$\frac{l_{t=0 \rightarrow 15}}{l_{t=2 \rightarrow 15}} = \frac{S_1 + S_2}{S_3} = \frac{9 + 1}{12} = \frac{10}{12}$$



۳ (۴۹)

v_0 ..
 $a <$..



$$mg - k\Delta x = ma$$

$$v_0 - \epsilon \cdot \Delta x = \epsilon$$

$$\epsilon \cdot \Delta x = 14$$

$$\Delta x = \frac{14}{\epsilon} \times 1 \dots = \boxed{\epsilon cm}$$

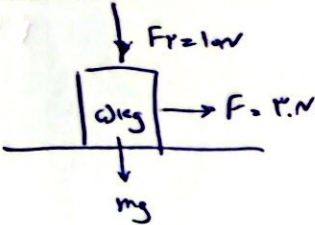
$$x_2 - x_1 = \epsilon$$

$$x_2 - v_0 = \epsilon$$

$$\boxed{x = v_0 \epsilon a}$$

$\epsilon(\Delta)$

لین حساب



$$F - F_k = ma$$

$$a = 2$$

$$v_0 - F_k = \Delta v \rightarrow F_k = v_0 \cdot N - \mu_k F_N = v_0$$

$$\mu_k (mg + f_r) = v_0$$

$$\mu_k (\Delta + 1) = 0$$

$$\boxed{\mu_k = \frac{1}{v}}$$

$$F - F_k = ma$$

$$v_0 - F_k = -1 \rightarrow F_k = \epsilon \rightarrow \mu_k F_N = \epsilon$$

$$F_N = 12 \rightarrow F_N = mg + f_r = 10$$

$$F_r = 12 - \Delta = \boxed{v \cdot N}$$

$$\Delta F = F_r' - f_r = v_0 - 1 = 4 \cdot N$$

2(a)

$$\Delta t = 1/5$$

$$v_{0M} = \Delta \dots k$$

$$v_{0m} = v_0 \dots k$$

$$F = ma = \frac{m \Delta v}{\Delta t}$$

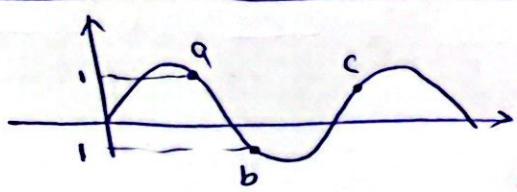
$$\frac{4 \cdot (-10 - \epsilon)}{1/5} = 4000$$

2(a)

$$v_1 = \frac{155 km}{h} = \frac{\epsilon \cdot m}{s}$$

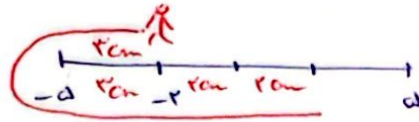
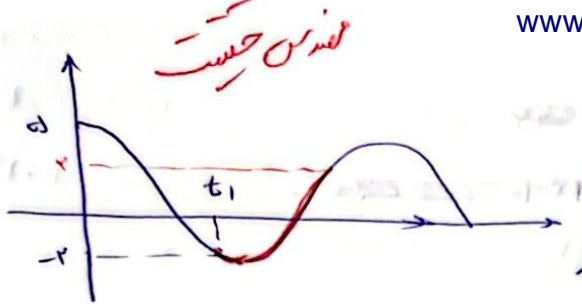
$$v_r = -\frac{14 km}{h} = -1 \cdot \frac{m}{s}$$

$$\rightarrow \Delta v = -\Delta \cdot \frac{m}{s}$$



لین حساب

1(a)



۲ (۵۲)

$\lambda = \xi A = \frac{v}{f}$ در ب در س و د

$T = \frac{1}{f} \leftarrow 1.0 \text{ cm} = (r + c + r + r)$

سرعت صوت در جامدات < در مایعات < در گازها < در مایعات < در هوا بیشتر

۳ (۵۵)

از بند
 $\lambda = v_1 t_1 \rightarrow t_1 = \frac{\lambda}{v_1}$
 $\lambda = v_r t_r \rightarrow t_r = \frac{\lambda}{v_r}$
 $\Delta t = t_r - t_1 = \frac{\lambda}{v_r} - \frac{\lambda}{v_1}$
 $\Delta t = \frac{(v_1 - v_r) \lambda}{v_1 v_r}$

۲ (۵۶)

$f = \frac{v}{\lambda}$
 $\lambda = \frac{a}{r} \times 10^{-4}$
 $v = \lambda f \rightarrow \frac{a}{r} \times 10^{-4} \times \frac{r}{c} \times 10^8 = \frac{\xi d}{r} \times 10^4 = \frac{a}{\xi} \times 10^4 = v_{ca} \times 10^4$
 $v = \frac{c}{n} \rightarrow n = \frac{c}{v} = \frac{r}{r_{ca}} = \frac{r}{a} = \frac{r}{a} = \frac{\xi}{r}$

۱ (۵۷)

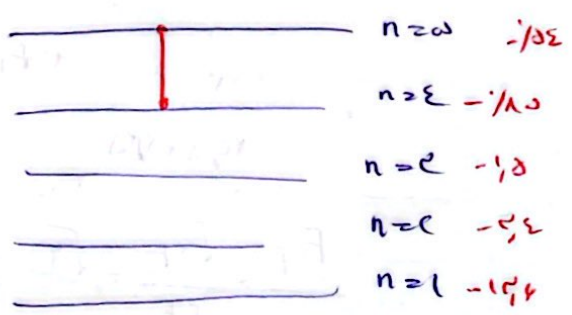
مندی حقیقت

۳ (۵۸)

$E = hf = \frac{hc}{\lambda}$

۱ (۵۹)

$\lambda_{max} \rightarrow E_{\Delta} \rightarrow E_{\xi} \rightarrow \Delta E = \frac{hc}{\lambda_{min}}$
 $\lambda_{min} \rightarrow E_r \rightarrow E_l \rightarrow \Delta E = \frac{hc}{\lambda_{max}}$
 $\lambda_{max} - \lambda_{min} \rightarrow \Delta E_{max} - \Delta E_{min} = \frac{hc}{\lambda_{min}} - \frac{hc}{\lambda_{max}} = 9.19 \text{ eV}$
 $9.19 \text{ eV} \propto \frac{1}{\lambda} \times 10^{-19} = 1.88 \times 10^{-18}$



Σ

$$\frac{1}{\lambda} = 1. \sqrt{\left(\frac{1}{n^2} - \frac{1}{n^2}\right)}$$

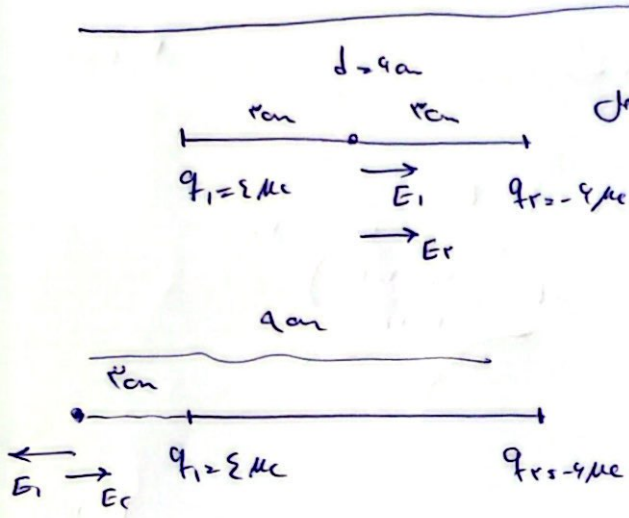
$$\left\{ \begin{aligned} \frac{1}{\lambda} &= 1. \sqrt{\left(\frac{1}{q} - \frac{1}{\epsilon_1}\right)} \\ n &= 4 + \epsilon = 5 \end{aligned} \right.$$

این است

$$\lambda = \frac{\epsilon_1 + q}{\epsilon_1} \times 1. \sqrt{\dots} = 11.25 \text{ nm}$$

✓ $1.25 \mu\text{m} < \lambda < \epsilon \dots$ $n_2 = 1.5$
 $2.4 \mu\text{m} < \lambda < 7.5 \mu\text{m}$ $n_2 = 1.5$

فردین حسینی



دو بار (Two charges) Σ (41)

$$E_T = E_1 + E_2 = \frac{kq_1}{r_1^2} + \frac{kq_2}{r_2^2}$$

$$\frac{q \times 1.9 \times \epsilon \times 1.9}{q \times 1.9^2} + \frac{q \times 1.9 \times 4 \times 1.9}{q \times 1.9^2}$$

$$\epsilon \times 1.9 + 4 \times 1.9 = 10 \times 1.9 = 10 \times 1.9$$

$$\frac{E}{E'} = \frac{10 \times 1.9}{\frac{10}{2} \times 1.9} = 2$$

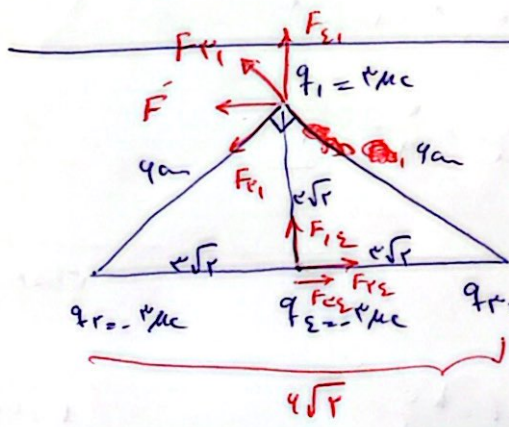
دو بار (Two charges)

$$E'_T = E_1 - E_2 = \frac{kq_1}{r_1^2} - \frac{kq_2}{r_2^2}$$

$$\frac{q \times 1.9 \times \epsilon \times 1.9}{q \times 1.9^2} - \frac{q \times 1.9 \times 4 \times 1.9}{q \times 1.9^2}$$

$$\epsilon \times 1.9 - \frac{4}{2} \times 1.9 = \frac{10}{2} \times 1.9$$

فردین حسینی



$$F_{11} = F_{21} = \frac{q_1 \cdot q_2}{r^2} = \frac{q_1 \cdot 4q_1}{4a^2} = \frac{q_1^2}{a^2} = \frac{q_1^2}{\Sigma} = 2q_1^2$$

$$F = \sqrt{F_{11}^2 + F_{21}^2} = 2q_1^2 \sqrt{2}$$

$$F_T = F + F_{\Sigma 1}, \quad F_{\Sigma 1} = \frac{q_1 \cdot 4q_1}{1a} = 4q_1^2$$

$$F_T = \sqrt{\epsilon \delta^2 + 4q_1^2 \delta^2} = F = 2q_1^2 a$$

$$F_T = \sqrt{2F_1^2 + (2F_1)^2} = \sqrt{4F_1^2} = 2F_1$$

$$F_T = F_{11} + F_{22} = 2\delta + 2\delta = 4\delta$$

$$F_{12} = F_{21} = \frac{q_1 \cdot 4q_1}{1a} = 4\delta$$

$$F_T = \sqrt{\epsilon \delta^2 + 4q_1^2 \delta^2} = \sqrt{(2F_1)^2 + (2F_1)^2} = \sqrt{4F_1^2} = 2\sqrt{2} F_1$$

$$\frac{F_T}{F_1} = \frac{2\sqrt{2} F_1}{F_1} = 2\sqrt{2}$$

$C = \epsilon A d$
 $q = 2.0 \mu C$

فردین حلیت

خازن از این طرف حل شود

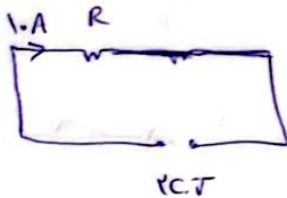
$$\frac{C_2}{C_1} = \frac{k_2}{k_1} \frac{A_2}{A_1} \frac{d_1}{d_2} = \frac{2}{1}$$

فاصله بین صفحات از این طرف

$$\frac{U_2}{U_1} = \left(\frac{q_2}{q_1}\right)^2 \left(\frac{C_1}{C_2}\right) = \frac{4}{1}$$

$$U_1 = \frac{1}{2} \frac{q^2}{C} = \frac{1}{2} \frac{\epsilon \times 10^{-6} \times 10^{-12}}{10^{-11}} = 2 \times 10^{-5} = 2 \text{ mJ}$$

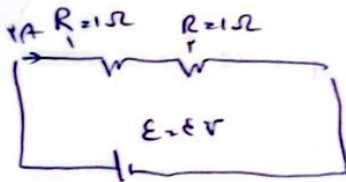
$U_2 = 4 \Delta U_1 = 8 \text{ mJ}$
 $\Delta U = 2 \text{ mJ}$



$U = P \times t = V I t$

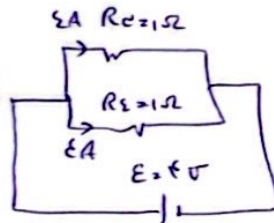
$$20 \times 1.0 \times (20 \times 10 \times 10) = \frac{\dots}{1000}$$

$$\frac{20 \times 10 \times 10 \times 10^6}{1.2} = \frac{140 \times 10^6}{1.2} = 116.67 \text{ جول}$$



$I = \frac{E}{R} = 2 A$

پس $P_1 = 2 W$
 پس $P_2 = 2 W$

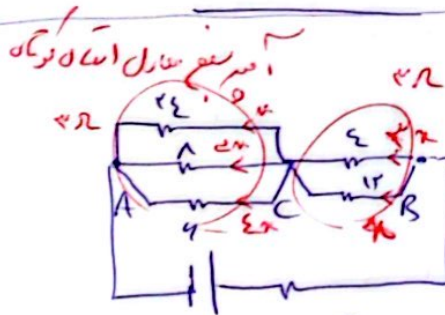
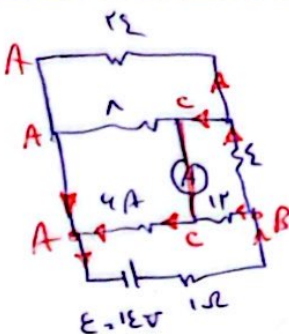


$I = \frac{E}{1.5} = 2.67 A$

$P_1 = R I^2 = 2 W$
 $P_2 = 2 W$

توزین با یک عدد فرض
 $R = 1 \Omega$
 $E = 4 V$

فردین حلیت



$I = \frac{12}{4+1} = 2 A$

$I_x = 2 A \rightarrow I_x = 1.5 A$

$I_x + I_x + I_x = 2 A$

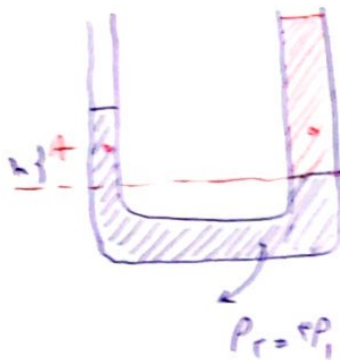
$\rightarrow I_x = \frac{1}{3} A$

$I = I - I$
 $4 A - 1.5 A$

$I_x = 1.5 A$

لغزین حضرت

$$\varphi = BA \cos \theta = (\epsilon \dots \alpha \dots) (\dots \alpha \dots) \times (11) = \dots \alpha \dots = \dots \alpha \dots \quad \Sigma (17)$$



تفاوت فشار $\Delta P = \Delta \rho g h$
 در سطح مختلف در مایعات
 $(P_r - P_i) g h = \rho g h$

17h

$$\frac{v_c}{v_i} = \frac{\Delta}{\epsilon}$$

$$\frac{k_r}{k_i} = \frac{m_r}{m_i} \times \left(\frac{v_c}{v_i} \right)^2$$

$$1 = \frac{m_r}{m_i} \times \frac{17}{17} \rightarrow \frac{m_r}{m_i} = \frac{17}{17}$$

$$\frac{m_r}{m_i} = \frac{17}{17}$$

$\frac{m_r}{m_i} = \frac{17}{17}$
 نسبت / 17

17h

$$W = F d \cos \theta$$

$$W = f \cdot x \cdot 1 \cdot \cos(11) = f \cdot j$$

$$F = f \cdot i + f \cdot j$$

$$d = 1 \cdot i$$

17h

$$\frac{kg m^r}{As^r}$$

$$B = \frac{F}{\Delta I} = \frac{N}{m \cdot A} = \frac{kg \frac{m}{s^2}}{m \cdot A} = \frac{kg}{As^r}$$

$$\varphi = B \cdot A = \frac{kg}{As^r} \cdot m^r = \frac{kg m^r}{As^r} = \text{wb}$$

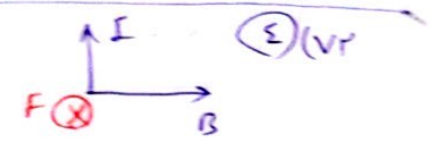
نسبت، L

17h

لغزین حضرت

۰۹۳۷۹۰۳۷۴۹۲

17h



✓

$$B = \frac{\mu_0 NI}{l} = \frac{\mu_0 \alpha l \cdot \cancel{\alpha l} \cdot \cancel{\alpha l} \cdot \cancel{\alpha l}}{l} = \mu_0 \alpha^3 l = \mu_0 \alpha^3 T \cdot l \cdot \epsilon$$

$\boxed{= 24 \text{ G}}$

لنس حسب

ε (va)

10¹⁰ → 10¹⁰ → 10¹⁰

$$Q = m \cdot c \cdot \theta + m \cdot L_f + m \cdot c \cdot \theta$$

$$\epsilon = 1$$

$$Q = \frac{m}{\epsilon} \cdot \frac{1}{\epsilon} \cdot 10 + 10 \cdot \frac{m}{\epsilon} + 10 \cdot \frac{m}{\epsilon} = \frac{100 \cdot m}{\epsilon}$$

$$L_f = 10 \cdot \frac{m}{\epsilon}$$

$$\epsilon = 1/2$$

$$Q' = m \cdot c \cdot \theta = \frac{10 \cdot m}{\epsilon}$$

10¹⁰ → 10¹⁰ → 10¹⁰

$$Q = Q'$$

$$\frac{100 \cdot m}{\epsilon} = \frac{10 \cdot m}{\epsilon}$$

$$\frac{100}{\epsilon} = \frac{10}{\epsilon} \Rightarrow \epsilon = 10$$

لنس حسب

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