

حسین عطری

پایگاه تخصصی سوالات فیزیک تجربی (تیر ۱۴۰۲)

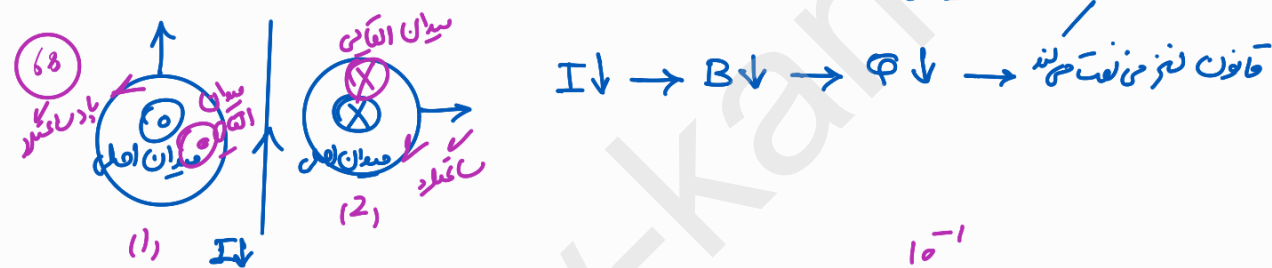
72) $k = \frac{1}{2}mv^2 = \frac{1}{2} \times 2 \times 10^3 \times (2500)^2 = 625 \times 10^6 \text{ J} = 6.25 \times 10^2 \text{ MJ}$

73) $F = 5\theta = \frac{9}{5}\theta + 32 \Rightarrow 3.2\theta = 32 \Rightarrow \theta = 10^\circ \text{C} \Rightarrow T = 283$

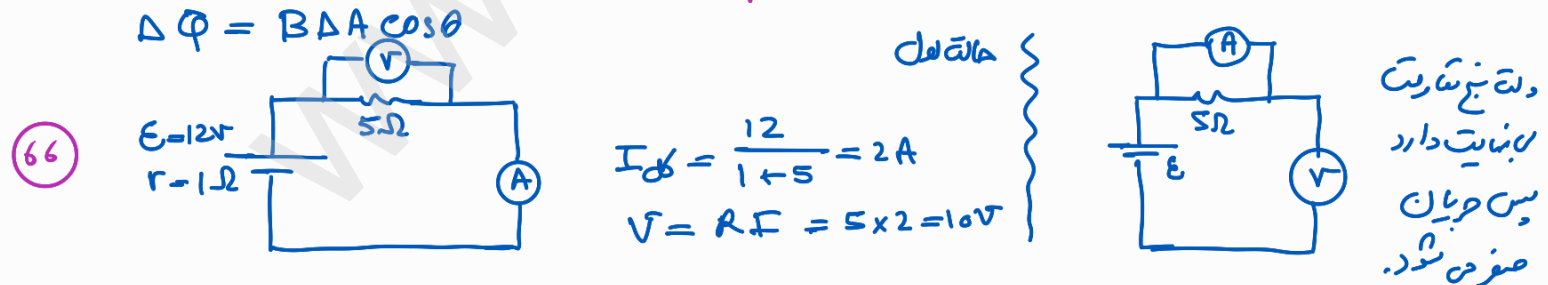
74) $q = 160 \times 10^{-10} \times 10^{-6} \text{ C} = 1.6 \times 10^{-14} \text{ C}$

75) $F = Bvq \sin\theta \Rightarrow \frac{1}{2} \times 10^{-14} = B \times 5 \times 10^5 \times 1.6 \times 10^{-19} \Rightarrow B = 0.5 \text{ T}$ جهت شرق

69) $m = \rho V = \rho Ah$
 $\text{چپ: } 27.2 = 13.6 \times 2 \times h \Rightarrow h_{\text{Hg}} = 1 \text{ cm}$
 $\text{ب: } 544 = 1 \times 20 \times h \Rightarrow h_{\text{W}} = 27.2 \text{ cm}$
 $P = P_0 + \rho gh = 1.0^5 + \frac{1000 \times 10 \times 0.272}{2720} + \frac{13600 \times 10 \times 10^{-2}}{1360} = \dots 80$
 از رگم دهان نرسید
 مشخص می شود.



67) $\bar{\mathcal{E}} = \left| -N \frac{\Delta\Phi}{\Delta t} \right| = 100 \times \frac{2 \times 10^{-2} \times 50 \times 10^{-4}}{10^{-1}} = 0.1 \text{ V}$
 $\Delta\Phi = B \Delta A \cos\theta$



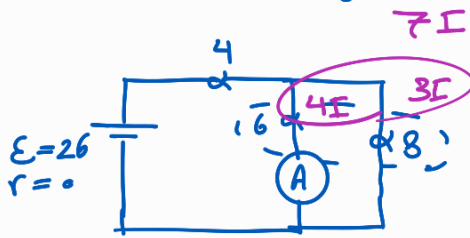
ولت‌سنج در این حالت ع نشان می دهد. ولت‌سنج در این حالت ع نشان می دهد. ولت‌سنج در این حالت ع نشان می دهد.

65) $P_0 = R_T I^2$, $I = \frac{\mathcal{E}}{r + R_T}$
 $\frac{P_0}{P_0} = \frac{64}{100}$
 $I_1 = \frac{24}{2+4+R_2} = \frac{24}{6+R_2}$
 $I_2 = \frac{24}{2+\frac{4R_2}{2}}$

$$\frac{P_{01}}{P_{02}} = \frac{(R_2+4) \left(\frac{24}{6+R_2} \right)^2}{\left(\frac{4R_2}{R_2+4} \right) \left(\frac{24}{2+4R_2} \right)^2} = \frac{64}{100} \Rightarrow R_2 = 4\Omega \checkmark$$

← این دو نزنه ها:

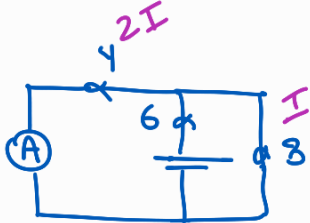
64



$$\frac{24}{4+3} = \frac{24}{7}$$

$$R_T = \frac{24}{7} + \frac{28}{7} = \frac{52}{7}$$

$$I_{\text{am}} = \frac{28}{\frac{52}{7}} = \frac{7}{2} = 7I \Rightarrow I_{R=8} = \frac{1}{2} A$$

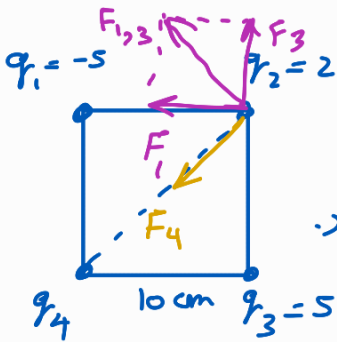


$$8 \parallel 4 = \frac{8}{3}$$

$$R_T = \frac{8}{3} + 6 = \frac{8+18}{3} = \frac{26}{3} \Rightarrow I_{\text{am}} = \frac{26}{\frac{26}{3}} = 3A$$

$$I_{R=8} = 1A \quad \text{0.5A تغییر می کند}$$

63



$$F_1 = F_3 = \frac{9 \times 5 \times 2}{10^2} = 9N \Rightarrow F_{1,3} = 9\sqrt{2}$$

نیاز داریم بار q_4 باید منفی باشد تا بار q_2 را جذب کند و برآیند نیرو $\vec{F} = -18N$ شود.

$$F_R = 18 \quad F_4 \Rightarrow F_4 = 9\sqrt{2} = \frac{q_4 \times 2 \times 5}{10^2} \Rightarrow q_4 = -10\sqrt{2} \mu C$$

62

$$Q = CV$$

$$U = \frac{Q^2}{2C}$$

$$U_2 - U_1 = \frac{q_4^2 - 2^2}{2C} = 25 \mu J \Rightarrow \frac{\frac{5}{4} 2^2}{2 \times 40} = 25$$

$$\Rightarrow 1600 = 2^2 \Rightarrow Q = 40 \mu C \checkmark$$

61

$$\Delta E = 0.305 eV = \frac{hc}{\lambda} = \frac{1200}{\lambda} \Rightarrow \lambda = 3921.56 nm \quad \text{3 سبز}$$

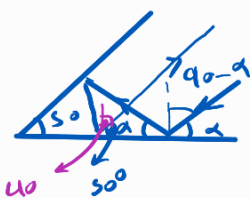
$$\Delta E = 10.2 = \frac{1200}{\lambda}$$

60

پ → وارید میب

ق → سبیل انسی

59



$$90 - \alpha \quad (1)$$

$$40 - \alpha \quad (2)$$

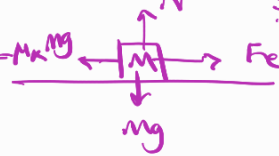
$$140 - \alpha - 50 \quad (4)$$

$$= |-10 - \alpha| = 10 + \alpha = 40 \Rightarrow \alpha = 30^\circ$$



$$mg = Fe = k \times 0.1 \quad N = Mg \rightarrow f_k = M \times g$$

$$k = \frac{10m}{0.1} = 100m$$

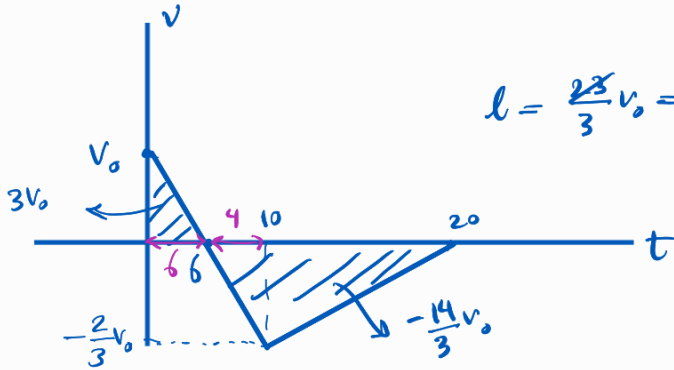


$$\sum F = 0 \Rightarrow f_k = Fe = 0.2 \times M \times 10 = 2M = k \times 0.02$$

$$\rightarrow 2M = 100m \times \frac{2}{100}$$

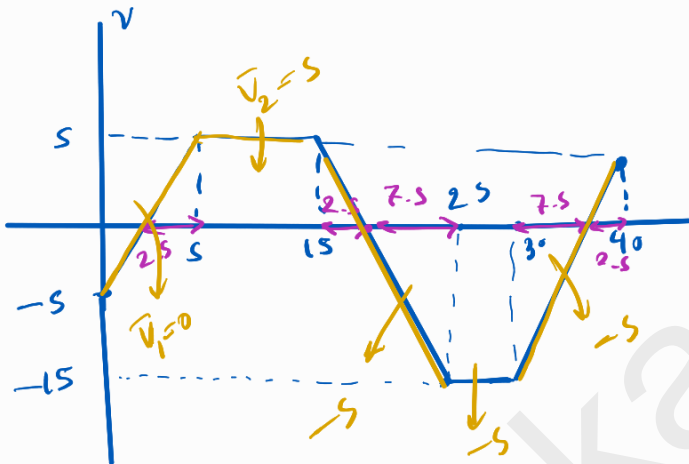
$$\Rightarrow m = M \checkmark$$

51



$$l = \frac{28}{3} V_0 = 13 \frac{8}{3} \Rightarrow V_0 = 18 \Rightarrow \bar{a} = 2.16 \text{ m/s}^2 \checkmark$$

50



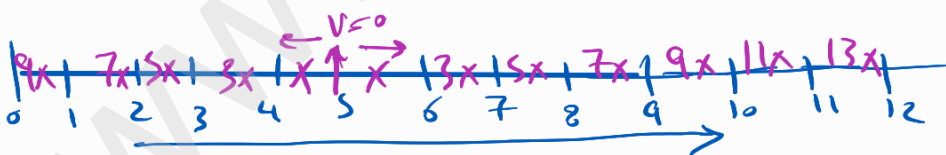
$$x \text{ در } v \rightarrow 15 + 2.5 = 17.55$$

$$\begin{aligned} V_0 &= -5 \\ V_5 &= 5 \\ V_{15} &= 5 \\ V_{25} &= -15 \\ V_{30} &= -15 \\ V_{40} &= 5 \end{aligned} \quad \left. \begin{array}{l} \} \\ \} \\ \} \\ \} \\ \} \end{array} \right\} \begin{array}{l} 5 \\ 5 \\ -5 \\ -15 \\ -5 \end{array}$$

$$\bar{V}_0 = \frac{10}{40}(5) + \frac{20}{40}(-5) + \frac{5}{40}(-15) \Rightarrow \Delta x = -125 \text{ m}$$

نیز 4 معادله (برای)

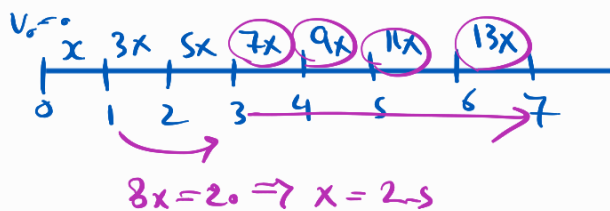
49



$$\Delta x_{0-12} = 24x = 24 \Rightarrow x = 1 \checkmark$$

$$S_{avr} = \frac{l}{2-10} = \frac{25x+9x}{8} = \frac{34}{8} = \frac{17}{4} \text{ m/s}$$

48



$$l_{3-7} = 40x = 100 \text{ m} \checkmark$$

$$8x = 20 \Rightarrow x = 2.5$$

47

$$W = 20 \text{ MJ} \Rightarrow \Delta u = -20 \text{ MJ}$$

$$\Delta v = \frac{-20 \text{ MJ}}{m} = 4 \text{ v} = v_k - v_0$$

$$V_B = 10V \checkmark$$

$$2Z-4 \rightarrow N = (2Z-4) - (Z-2) = \underline{Z-2}$$

46

$$\begin{matrix} A=2Z \\ Z \end{matrix} X \longrightarrow \begin{matrix} A-4 \\ Z-2 \end{matrix} Y + \frac{4}{2} \alpha + \frac{0}{+1} \beta^+ + \frac{0}{-1} \beta^-$$

$$N=P \\ N-P=0 \checkmark$$

71

$$0.52 \times 4200 \times 5 - 0.1 \times 4000 \times 30 - C_{\text{pr}} \times 40 = 0 \Rightarrow C_{\text{pr}} = 243 \frac{\text{J}}{^\circ\text{C}}$$

www-kanoon-ir

