

نوین کنکور

کنکور

امتحان نهایی

**نوین کنکور
شرط لازم و کافی
برای موفقیت**

novinkonkor.com

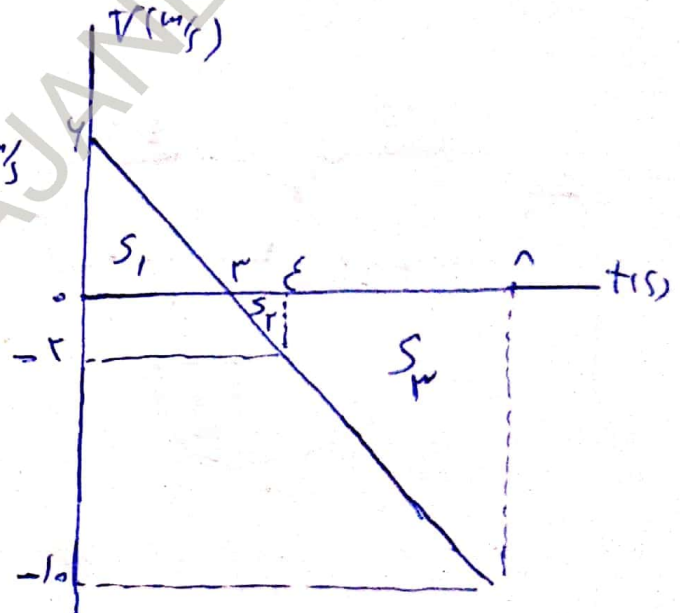
11

$$v) \quad V = V_{av} = \frac{\Delta x}{\Delta t} = \frac{14-1}{1.0-0} = 13 \text{ m/s}$$

پ) س

$$x = Vt + x_0 \Rightarrow 1 = 13t + x_0 \Rightarrow x_0 = -13 \Rightarrow \underline{x = 13t - 13}$$

$$v) \quad a = -13 \text{ m/s}^2 \quad \left\{ \begin{array}{l} V = -13t + 9 \\ V = at + V_0 \\ 0 = -13t + 9 \\ V_0 = 9 \text{ m/s} \end{array} \right. \quad \left\{ \begin{array}{l} t = 0.5 \Rightarrow V = -13/2 \\ t = 1.5 \Rightarrow V = -10.5 \end{array} \right.$$



$$L_{(0,0.5)} = S_1 + |S_2|$$

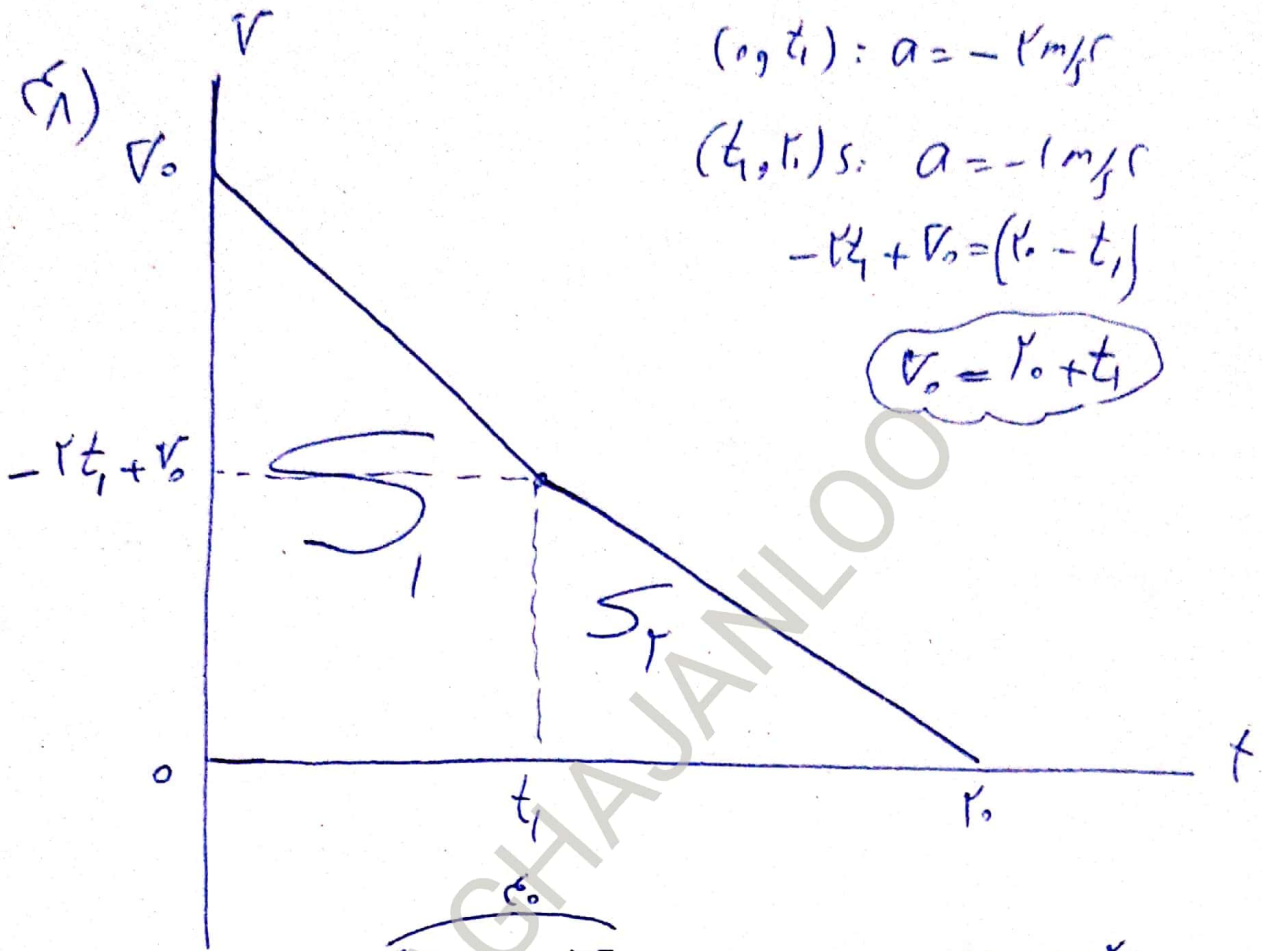
$$= 9 + 1 = 10 \text{ m}$$

$$L_{(0.5,1)} = |S_2| = \left| -\frac{1}{2} \times 1 \times 10 \right|$$

$$= 5 \text{ m}$$

$$\frac{L}{L_1} = \frac{10}{15} = \frac{2}{3} \quad \text{پ) س}$$

(2)



$$(0, t_1): a = -1 \text{ m/s}^2$$

$$(t_1, v_1): a = -1 \text{ m/s}^2$$

$$-vt_1 + v_0 = (v_0 - t_1)$$

$$v_0 = 1 + t_1$$

$$S_1 = S_2 \Rightarrow \frac{(v_0 - t_1) + v_0}{2} \times (t_1 - 0) = \frac{(v_0 - t_1)^2}{2}$$

$$v_0 t_1 = (v_0 - t_1)^2 \Rightarrow 1 \cdot t_1 = (1 - t_1)^2$$

$$t_1 = 1.5$$

دالة سرعت $\Rightarrow a = -1 \text{ m/s}^2$ $v_{\text{نهایی}} = 0$

$$\Delta x = \frac{1}{2} a t^2 + v t = \frac{1}{2} \times (-1) \times 1.5^2 + 0 = -1.125 \text{ m}$$

۳)

۴۹) ۳

$$d_0) F_c = m(g - a)$$

$$k \Delta L = m(g - a) \Rightarrow \epsilon \times \Delta L = \gamma(1 - \gamma) \Rightarrow \Delta L = \frac{14}{\epsilon} m = 1 \text{ cm}$$

$$L - \gamma = \gamma \Rightarrow L = 2 \epsilon \text{ cm} \quad \text{۵) } \epsilon$$

$$d1) \text{ (برای اول): } F_N = mg + F_r = d_0 + F_r = d_0 + 1 = 9 \text{ N}$$

$$F_k = \mu_k \times 9$$

$$a = \frac{F_i - F_k}{m} \Rightarrow \gamma = \frac{\gamma_0 - \gamma_0 \mu_k}{d} \Rightarrow \mu_k = \frac{1}{\gamma}$$

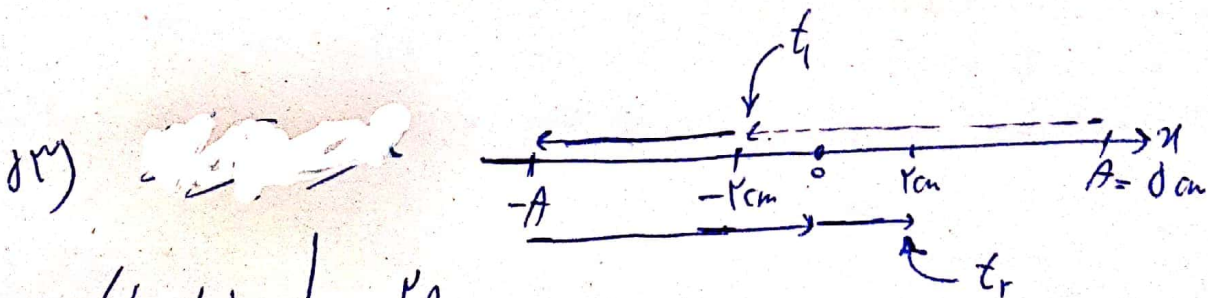
$$\text{(برای دوم): } a = \frac{F - F'_k}{m} \Rightarrow -\gamma = \frac{\gamma_0 - F'_k}{d} \Rightarrow F'_k = \epsilon_0 N = \mu_k \times F'_N$$

$$\Rightarrow \gamma_0 = \frac{1}{\gamma} (d_0 + F'_r) \Rightarrow F'_r = \gamma_0 N$$

$$F'_r - F_r = \gamma_0 - 1 = 4 \text{ N} \quad \text{۶) } \epsilon$$

$$d2) \text{ شتاب } |a| = \frac{|\Delta v|}{\Delta t} = \frac{|1 - 1 - \epsilon|}{-1.5} = 1.0 \text{ m/s}^2$$

$$\text{شماره } |F_{\text{net}}| = m \times |a| = 4 \times 1 = 4 \text{ N} \quad \text{۷) } \epsilon$$



$$(t_l, t_r): L = \gamma A \Rightarrow \Delta t = \frac{T}{F} \quad \text{۹) } \epsilon$$

13)

د۵) ①

$$\Delta t = \frac{L}{v_f} - \frac{L}{v_i} = L \times \frac{v_i - v_f}{v_i v_f} \quad \text{②}$$

د۹) ②

$$\lambda = \frac{v}{f} \Rightarrow \frac{g}{\frac{v}{\Sigma}} \times 10^{-4} = \frac{v}{\frac{g}{\Sigma} \times 10^{12}} \Rightarrow v = \frac{g}{\Sigma} \times 10^8 \text{ m/s}$$

$$n = \frac{c}{v} = \frac{3 \times 10^8}{\frac{g}{\Sigma} \times 10^8} = \frac{\Sigma}{g} \quad \text{③}$$

د۱) ⑤

$$\lambda = \lambda_{\min} \Rightarrow \left| \begin{matrix} n=2 \\ n'=1 \end{matrix} \right| \Rightarrow \lambda f = E_n - E_{n'} = \frac{-E_R}{4} - \frac{-E_R}{1} = E_R \times \frac{3}{4}$$

$$\lambda = \lambda_{\max} \Rightarrow \left| \begin{matrix} n=3 \\ n'=2 \end{matrix} \right| \Rightarrow \lambda f = E_n - E_{n'} = \frac{-E_R}{9} - \frac{-E_R}{4} = E_R \times \frac{5}{36}$$

$$\lambda f - \lambda' f = E_R \times \frac{3}{4} \left(1 - \frac{1}{100} \right) = E_R \times \frac{3}{4} \times \frac{99}{100}$$

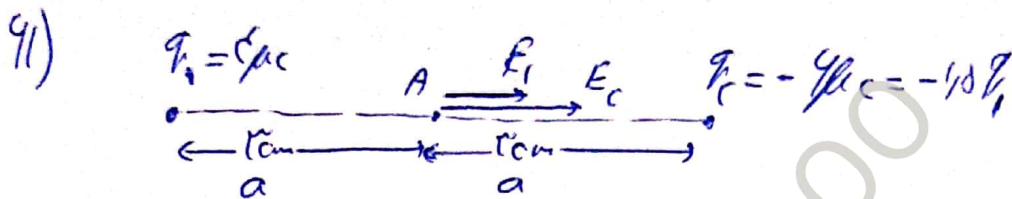
$$= 1.74 \times 10^{-19} \times \frac{3}{4} \times \frac{99}{100}$$

$$\approx 4.01 \times 10^{-21} \quad \text{①}$$

⑤ 4) (3) $\Rightarrow$ $\left| \begin{array}{l} n' = 3 \\ h = \epsilon, d, q, \boxed{V}, 1 \end{array} \right.$

$$\frac{1}{f} = R \left(\frac{1}{r_c} - \frac{1}{r_c} \right) = R \times \frac{\epsilon}{q \times \epsilon q} \Rightarrow f = \frac{q \times \epsilon q}{\epsilon \cdot R} = 11.02 \text{ cm}$$

(3) $\Rightarrow$



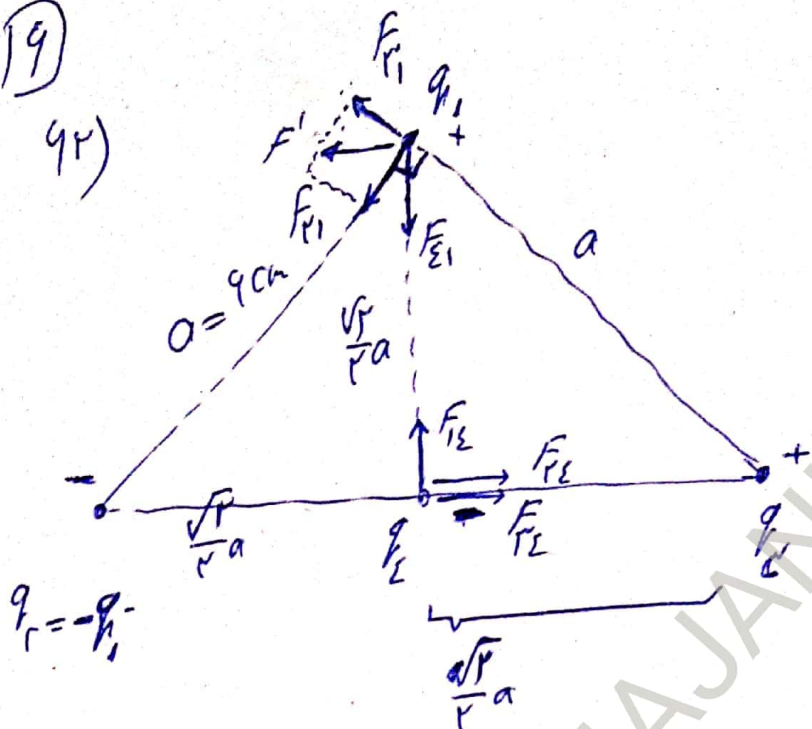
$$E_A = E_1 + E_2 = E_1 + \frac{1}{9} E_1 = \frac{10}{9} E_1 = \frac{10}{9} E_1$$



$$E_B = E_1 - E_2 = E_1 - \frac{1}{9} E_1 = \frac{8}{9} E_1$$

$$\frac{E_A}{E_B} = 3 \quad (3) \quad \checkmark$$

94)



$$V_c = -\frac{r}{\mu_0}$$

$$g_c = \frac{w}{\mu c}$$

$$V_E = -\mu_c$$

$$f_{12} = F_{12} - F_{12} = F$$

$$F_1 = F_2 = \frac{F}{2}$$

$$F_{T_2} = \sqrt{F_1^2 + (YF)^2} = F\sqrt{2}$$

$$F' = \sqrt{\gamma} \times \frac{F}{\gamma} = \frac{\sqrt{\gamma}}{\gamma} F$$

$$F_T = \sqrt{\left(\frac{\sqrt{r}}{r} F\right)^2 + F^2} = F \sqrt{\frac{r}{r}}$$

$$\frac{F_{T_1}}{F_{T_0}} = \frac{\sqrt{\tau}}{\sqrt{\delta}} = \sqrt{\frac{\tau}{\delta}}$$

4r) $U = \frac{1}{r} \phi^r = \frac{1}{r} \times \frac{r \dots r}{d} = \dots \mu J$

$$\left. \begin{array}{l} Q = \text{con.} \\ d' = \frac{\mu}{\epsilon} d \Rightarrow c' = \frac{\epsilon}{\mu} c \\ U = \frac{1}{\mu} \frac{Q^r}{c} \end{array} \right\} U' = \frac{\mu'}{\mu} U \Rightarrow U' - U = \frac{1}{\mu} U = \cancel{\mu_{00}} \mu J = \mu_m J$$

① ✓

72)

⑤

93) $P = I \times V = 1700 \text{ W} = 1.7 \text{ kW}$

$U = P \times \Delta t$

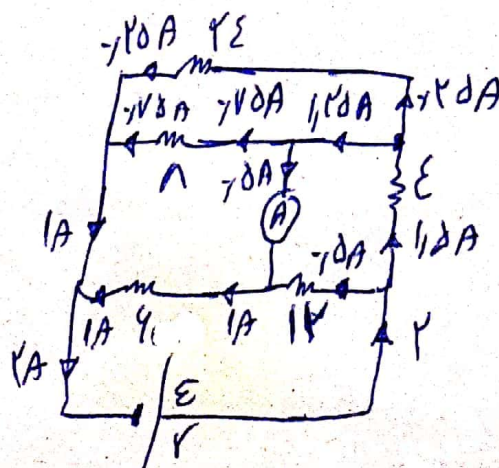
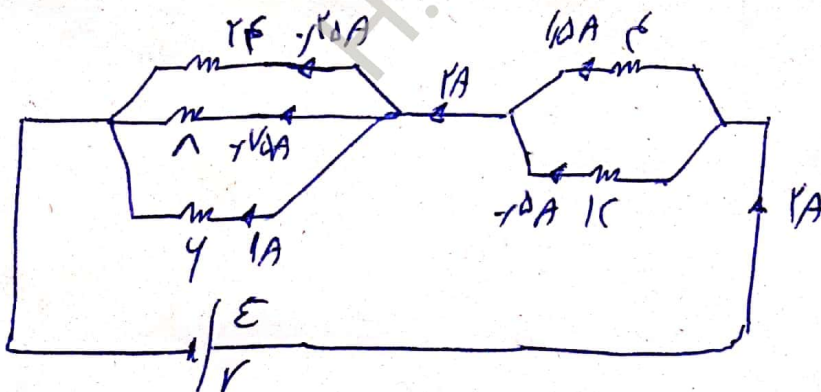
$U = 1700 (0.1 \times 1.7 \text{ kW}) = 289 \text{ kW.h}$

$1700 \times 0.1 = 170 \text{ J}$ ⑤

94) $P = \frac{V^2}{R}$ ⑤

94) $\begin{cases} \frac{15 \times 1}{15+1} = 9 \Omega & \frac{15 \times 5}{15+5} = 3 \Omega \\ \frac{9}{1} = 9 \Omega \end{cases}$
 $R_{eq} = 9 + 3 = 12 \Omega$

$I = \frac{15}{9+1} = 1 \text{ A}$



$I_{15 \Omega} = 1 \text{ A}$

⑤

18)

$$9V) \phi = B \cdot A \cos \theta = \epsilon \times l \cdot \frac{r}{x} \times \frac{r}{x} = \frac{\epsilon r^2}{x^2} \times \frac{r}{x} \quad \text{D.S.}$$

$$9A) P_m = P_n$$

$$P_B + \rho \cdot g \cdot h = P_A + \rho \cdot g \cdot h \Rightarrow P_A - P_B = (\rho_p - \rho_l) \times g \times h = \rho_l \times g \times h \quad \text{D.S.}$$

$$9Q) V_r = \frac{\Delta}{\epsilon} V_i$$

$$k_r = k_i$$

$$\frac{k_r}{k_i} = \frac{m_c}{m_i} \times \left(\frac{V_i}{V_r} \right)^2 \Rightarrow 1 = \frac{m_c}{m_i} \times \frac{V_i}{V_r}$$

$$\frac{m_r}{m_i} = \frac{V_i}{V_r} \Rightarrow \frac{m_r - m_i}{m_i} = \frac{-9}{18} = -\frac{1}{2} = -50\% \quad \text{D.S.}$$

$$VI) W_F = F_x dx + F_y dy = \epsilon \cdot x \cdot l + 0 = \epsilon \cdot x \cdot l \quad \text{D.S.}$$

$$VII) \text{D.S.}$$

$$VIII) \text{D.S.}$$

$$IX) \text{D.S.}$$

19)

$$V\epsilon) \quad B = \mu_0 \times \frac{N}{l} \times I$$

$$= 1.256 \times 10^{-6} \times \frac{1000}{0.1} \times 1 = 1.256 \times 10^{-2} \text{ T} = 1.256 \text{ G}$$

(م) س

جڑی = m

$$V\delta) \quad Q = m C_{\text{ice}} \times (0 - (-10)) + m \frac{L}{F} + m \times C_{\text{water}} \times (10 - 0)$$

$$= m (0 C_{\text{ice}} + 10 C_{\text{ice}} + 10 C_{\text{water}}) = m \times 10 C_{\text{water}}$$

جڑی = m'

$$Q' = m' \times C_{\text{ice}} \times (40 - 0) = 40 C_{\text{ice}} \times m'$$

$$Q = Q' \Rightarrow m' = 10m$$

(م) س

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