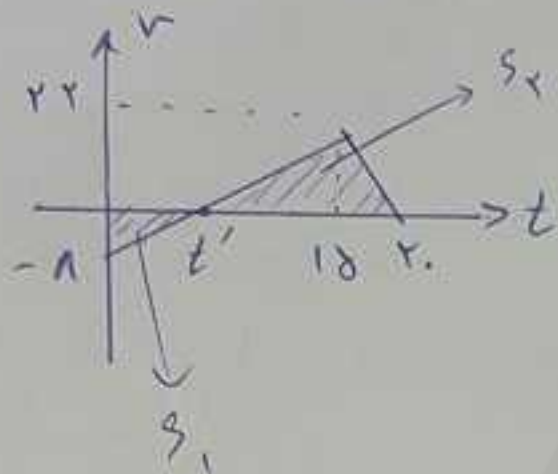


# پاسخ فیزیک کنکور ریاضی ۹۱

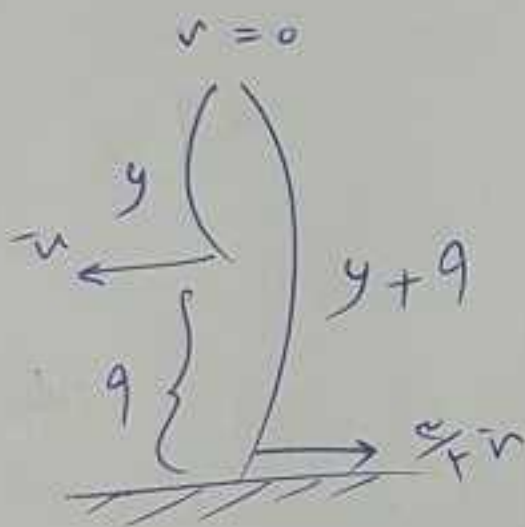
$$\Delta n = \frac{v_1 + v_2}{\gamma} \Delta t \Rightarrow -122,5 = \frac{0 + v_2}{\gamma} \times 8 \quad \text{۴ (۱۵۶)}$$

$$\Rightarrow v_2 = -49$$



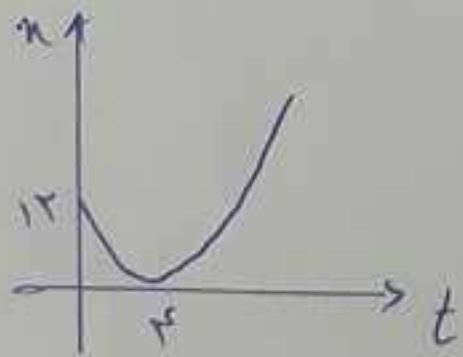
$$t' = \frac{1}{22+1} \times 18 = 4$$

$$s_1 + s_2 = \frac{4 \times 1}{\gamma} + \frac{14 \times 22}{\gamma} = 192$$



$$\frac{y}{y+9} = \left( \frac{v}{\frac{v}{2}} \right)^2 \Rightarrow y = v, 2$$

$$\Rightarrow h = y + 9 = 15, 2$$



$$a = k(t - \epsilon)^2$$

$$\begin{cases} t=0 \\ a=12 \end{cases} \rightarrow 12 = k(0 - \epsilon)^2 \Rightarrow k = \frac{12}{12}$$

$$v = \frac{da}{dt} = \frac{12}{12} \times 2(t - \epsilon) \rightarrow v = 4$$

$$t = 1$$

①



$$t=۴ \Rightarrow v=0$$

$$\Delta x = \frac{v_0 t}{2} \Rightarrow ۱۲ = \frac{v_0 \times ۴}{۲}$$

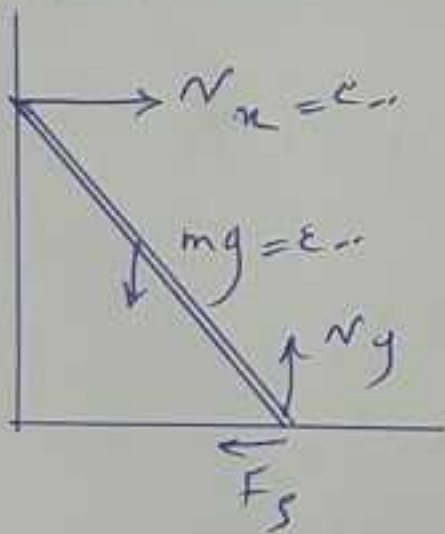
$$\Rightarrow v_0 = ۶ \Rightarrow v_8 = v_0 = ۶$$

$$u = ۳۶ \frac{\text{km}}{\text{h}} = 10 \frac{\text{m}}{\text{s}}$$

۴ (۱۴)

$$v_1^2 - v_2^2 = 2a \Delta x \Rightarrow 0 - 10^2 = 2a \times ۴ \Rightarrow a = -\frac{100}{۸}$$

$$F = ma \Rightarrow F = ۲۰۰۰ \times \left(-\frac{100}{۸}\right) = ۲۵۰۰۰$$



$$\sum F_x = 0 \Rightarrow N_x - F_s = 0$$

$$\Rightarrow F_s = ۲۰۰$$

$$\sum F_y = 0 \Rightarrow N_y - mg = 0$$

$$\Rightarrow N_y = ۴۰۰$$

۲ (۱۶)

$$R = \sqrt{N_y^2 + F_s^2} = \sqrt{۴۰۰^2 + ۲۰۰^2} = ۵۰۰$$

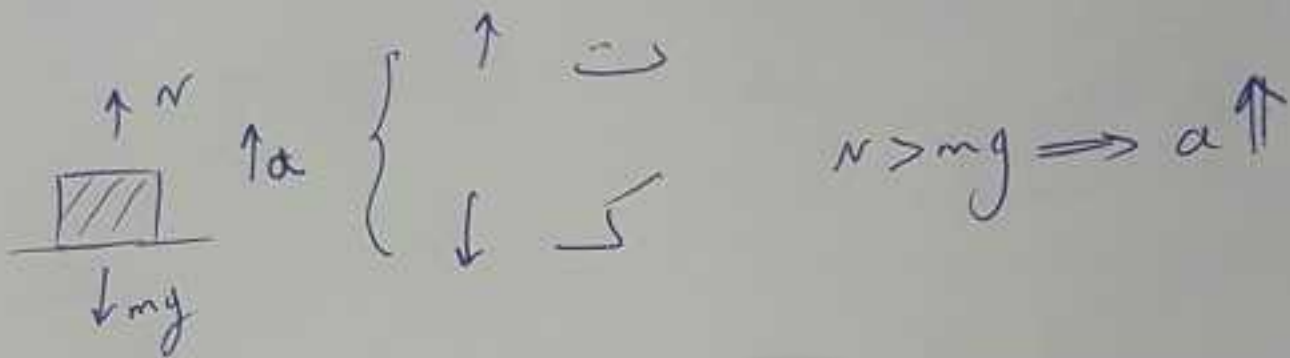
رشد دوم (در درجه)

$$\sum F = 0 \Rightarrow \vec{N}_x + \vec{m}g + \vec{R} = 0$$

$$\vec{R} = -\vec{N}_x - \vec{m}g = -۲۰۰\vec{i} - ۴۰۰\vec{j} \Rightarrow |R| = ۵۰۰$$

$$\frac{g_r}{g_i} = \left(\frac{P_r}{P_i}\right)^2 \Rightarrow g_r = 1 \cdot \left(\frac{R_e}{R_e + \frac{R_e}{\delta}}\right)^2 \quad 2 \text{ (142)}$$

$$\Rightarrow g_r = 1 \cdot \frac{14}{20} = \frac{7}{10}, \quad F = mg_r = 8 \cdot \frac{7}{10} = 5.6$$



$$F_s = \mu_s N = \mu_s mg = 1.2, \quad F_o = 4. \quad 2 \text{ (144)}$$

$$F_k = \mu_k N = \mu_k mg = 1.0, \quad F_a = 1.$$

$F_o > F_s \Rightarrow$  با نسبت حرکت می کند

$F_a = F_k \Rightarrow$  با سرعت ثابت حرکت می کند!  
 $[8, \infty)$

$$W = -\Delta U = -mgh \Rightarrow \omega_i = \omega_f \quad 1 \text{ (145)}$$

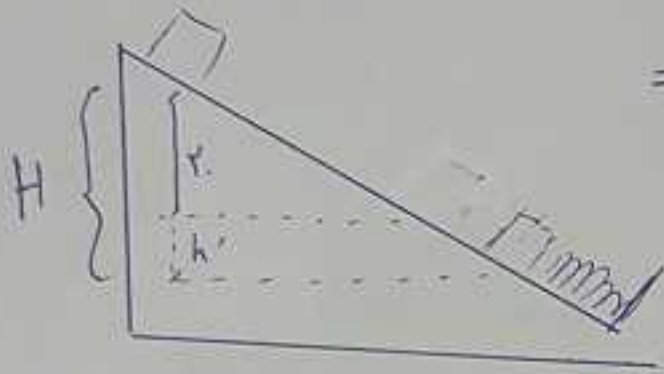
$$k = \frac{P_r}{r_m} \Rightarrow \frac{k_r}{k_i} = \left(\frac{P_r}{P_i}\right)^2 = \left(\frac{22}{2.}\right)^2 = \frac{121}{1.} \quad 2 \text{ (146)}$$

$$\Rightarrow k_i \xrightarrow{+21\%} k_r$$

$$U_1 + K_1 = U_2 + K_2 \Rightarrow mgh + \frac{1}{2} m v_1^2 = U_2$$

۲ (۱۶۷)

$$2 \times 1.0 \times H + \frac{1}{2} \times 2 \times 2^2 = 1.0 \Rightarrow H = \frac{3}{1.0}$$



$$\Rightarrow h' = \frac{1}{1.0}$$

$$u = 2h' = \frac{2}{1.0} = 2.0 \text{ cm}$$

$$\frac{v_2}{v_1} = \frac{n_1}{n_2} \Rightarrow \frac{2}{1} = \frac{n_1}{n_2} \Rightarrow n_2 = \frac{1}{2} n_1 \quad (1) \quad ۴ (۱۶۸)$$

$$\frac{v_E}{v_C} = \frac{n_C}{n_E} \Rightarrow 1.5 = \frac{n_C}{n_E} \Rightarrow n_C = 1.5 n_E \quad (2)$$

$$n_1 \sin \delta C = n_E \sin \epsilon D \Rightarrow \frac{n_1}{n_E} = \frac{v}{\lambda}$$

$$\text{از ۱} \Rightarrow \frac{n_2}{n_1} = \frac{1}{2} \times \frac{n_1}{n_E} = \frac{1}{2} \times \frac{v}{\lambda} = \frac{v}{2\lambda}$$

$$\text{درجه عمیق: } \lambda_{\text{عمیق}} > \lambda_{\text{سطح}} \Rightarrow n_{\text{عمیق}} < n_{\text{سطح}} \quad (۱۶۹)$$

$$n_1 \sin \theta_1 = n_2 \sin \theta_2 \Rightarrow n \propto \frac{1}{\sin \theta} \Rightarrow \theta \downarrow, \uparrow n$$

$$n_{\text{عمیق}} < n_{\text{سطح}} \Rightarrow \theta_{\text{عمیق}} > \theta_{\text{سطح}}$$

چون از رقیق به غلیظ وارد شده به خط عمود نزدیکتر است

$$\frac{2}{1} \lambda = 1.5 \Rightarrow \lambda = 1.5 \text{ cm}$$

$$v = \sqrt{\frac{F}{\mu}} = \sqrt{\frac{10}{2.4}} = 2$$

$$\lambda = vT \Rightarrow \frac{1}{1.5} = 2 \cdot T$$

$$\Rightarrow T = \frac{1}{3} \text{ s}$$

$$\Delta t = \frac{1}{1.5} = 2 \cdot T \Rightarrow \text{عدد دورہ} = 1.5 \text{ cm}$$

در هر دوره ۴۰ میلی داشته ← عدد دورہ ۱.۵، میلی داشته

$$v = \sqrt{\frac{F}{\mu}} = \sqrt{\frac{25}{4 \times 10^{-2}}} = 25$$

(iv)

$$\lambda = \frac{v}{f} \Rightarrow \lambda = \frac{25}{212.5} = 11.8$$

$$T \propto \sqrt{l} \Rightarrow \frac{T_2}{T_1} = \sqrt{\frac{l_1}{l_2}} \Rightarrow \left(\frac{1}{2}\right)^2 = \frac{l_1}{l_2}$$

(iv)

$$\Rightarrow l_2 = 2 \cdot l_1 = 2 \cdot 10 = 20 \text{ cm}$$

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$$K = \frac{1}{2} E \Rightarrow \frac{1}{2} m v^2 = \frac{1}{2} E$$

(iv)

$$\Rightarrow v = \sqrt{\frac{E}{m}} = \sqrt{\frac{1 \times 10^{-16}}{9.1}} = \frac{\sqrt{2}}{3}$$

$$nhf = pt \Rightarrow n \frac{hc}{\lambda} = pt \Rightarrow n \propto \lambda$$

(iv)

$$\frac{n_2}{n_1} = \frac{\lambda_1}{\lambda_2} = \frac{400}{800} = \frac{1}{2}$$

$$E = \frac{hc}{\lambda} \Rightarrow \lambda = \frac{hc}{E} = \frac{E_1 \times 10^{-10} \times 3 \times 10^8}{E_1} = 300 \text{ nm} \quad (1 \text{ v } \delta)$$

$$2eV \rightarrow A + 2\alpha + \beta^-$$

2 (1 v \delta)

$$2eV - 2\alpha = A \Rightarrow A = 2eV$$

$$2\alpha = 2eV \Rightarrow \alpha = eV \Rightarrow T = \frac{120}{\delta} = 2\delta$$

2 (1 v \delta)

$$\Delta U = q \Delta V \Rightarrow -\delta \times 10^{-6} = -\delta \times 10^{-6} \times (V_B - V_A) \Rightarrow V_B = 2\delta$$

U. f (1 v \delta)

بررسی عدل در راستای y : 2 (1 v \delta)

$$F_{2\delta} = F_{2e} \times \cos \theta \Rightarrow \frac{\delta \times \epsilon}{a^2} = \frac{\delta \times q_e}{(a \cos \theta)^2} \Rightarrow q_e = 12\delta$$

$$F = \frac{k q_1 q_2}{r^2} \Rightarrow \frac{F_2}{F_1} = \frac{1 \times e \times e}{e^2} = 1 \quad 2 (1 \text{ v } \delta)$$

$$E_1 + E_2 + E_e = E_t$$

$$\frac{q \times 1}{a} + \frac{q_2 \times q}{\epsilon} - \frac{q \times 2}{1} = \begin{cases} +1 \rightarrow q_2 = \frac{11}{2,20} \\ -1 \rightarrow q_2 = \frac{q}{2,20} = +2\delta \end{cases} \quad (1 \text{ v } \delta)$$

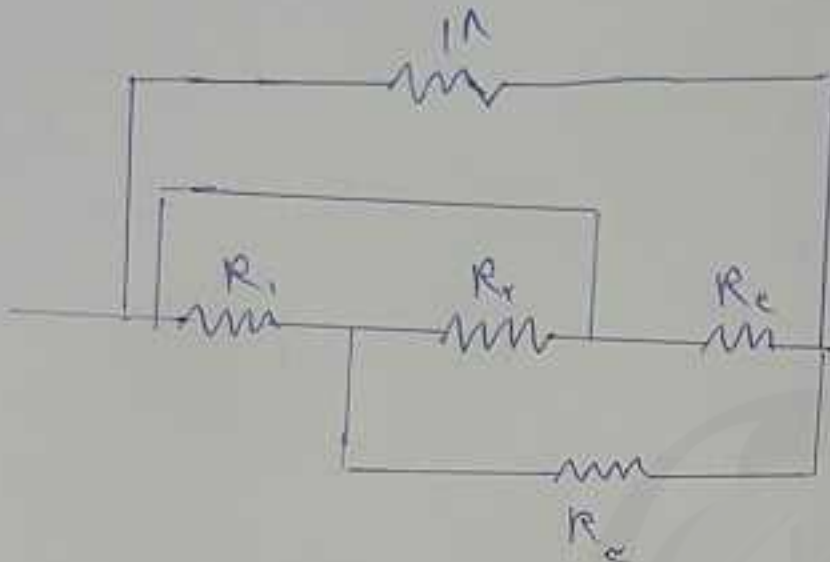
(9)

$$\frac{U_2}{U_1} = \left(\frac{v_2}{v_1}\right)^2 = \left(\frac{18}{9}\right)^2 = \frac{4}{9}$$

$$: U = \frac{1}{2} C v^2 \quad T (1A \times 2)$$

صورت اول

T (1A x 4)



$$\frac{R}{4} \leftarrow \text{سوی } R_1, R_2$$

$$\frac{R}{4} \leftarrow \text{سوی } R_3$$

$$\frac{R}{8} \leftarrow \text{سوی } R_4$$

$$\leftarrow \text{سوی } 1A$$

$$R = 9$$

$$\frac{R}{4} = \frac{\frac{R}{8} \times 1A}{\frac{R}{8} + 1A}$$

$$R = \frac{v}{R} \left\{ \begin{array}{l} R_B = \frac{v}{c} \\ R_A = \frac{v}{f} \end{array} \right. \Rightarrow \frac{R_B}{R_A} = \frac{f}{c} \quad i (1A \times 2)$$

(دو دایره است یعنی یک هم وصل است)

$$B = \frac{N_0 N \Phi}{2 R} = \frac{4 \pi \times 1 \times 10^{-2}}{2 \times 1} = 10^{-2} \pi \quad 2 (1A \times 2)$$

$$A = 4 \pi R = \pi r^2 \rightarrow r = 1$$

$$\rightarrow 10^{-2} \pi$$

(از مغناطیس توان 10 حرف نظر می شود)

(5)

→  $\mu (1111)$ 

$$\phi_1 = F \times 10^{-6} \cos \frac{\pi}{2} = 0$$

 $\mu (1119)$ 

$$\phi = F \times 10^{-6} \cos \pi = -F \times 10^{-6}$$

$$\bar{E} = -N \frac{d\phi}{dt} = 40 \times \frac{F \times 10^{-6}}{\frac{1}{400}} = 4F$$

$$\varepsilon = B v l \Rightarrow 110 = 112 \times v \times \frac{1}{5} \rightarrow v = \frac{\Delta y}{5} \quad | (19)$$

$A \downarrow \rightarrow \phi \downarrow \rightarrow$  موافق  $B', B$

$$p_{\max} = \rho g h_{\max} = 1000 \times 10 \times \frac{\Delta}{100} = 1000$$

 $\mu (191)$ 

$H$ : طول موج صوتی

 $\mu (192)$ 

$$H_1 = H_0 = v \lambda$$

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$$\frac{H_1}{T_1} = \frac{H_2}{T_2} \Rightarrow \frac{v \lambda}{400} = \frac{H_2}{\cos} \Rightarrow H_2 = \frac{11}{10} \times v \lambda$$

$$H_2 - n = H_0 \Rightarrow \frac{11}{10} \times v \lambda - n = v \lambda \Rightarrow n = \frac{1}{10} v \lambda$$

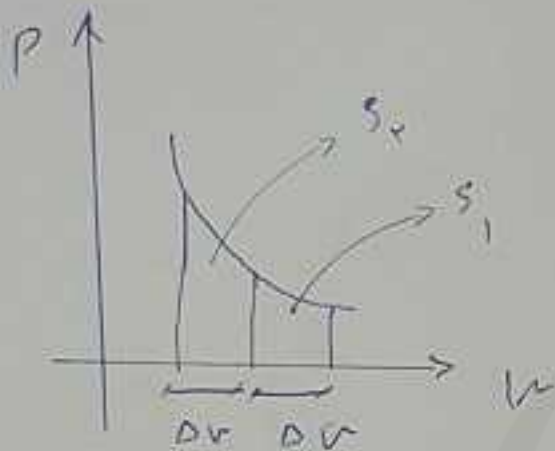
$$\frac{100 - 0}{100} = \frac{l_1}{l} \rightarrow \frac{v \lambda}{100} = \frac{l_1}{l} \rightarrow l_1 = \frac{1}{10} v \lambda \quad \mu (193)$$

①



$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2} \Rightarrow \frac{1 \cdot \Delta \times 10^3 \times 1 \cdot \epsilon}{\gamma \gamma \epsilon + \epsilon} = \frac{1 \times 10^3 \times \gamma V_2}{\gamma \gamma \epsilon + \gamma V_2} \quad 1 \quad (19\epsilon)$$

$$\Rightarrow \gamma V_2 = \gamma_1 V \rightarrow \Delta U = \gamma V$$



$$S_2 > S_1 \rightarrow W_2 > W_1$$

$$\Delta U = W \Rightarrow \Delta U_2 > \Delta U_1$$

2 (19δ)

$$Q_c = 1 \rightarrow Q_H = \frac{\delta}{\epsilon} Q_c \Rightarrow Q_H = \frac{\delta}{\epsilon}$$

3 (19ς)

$$W = Q_H - Q_c = \frac{\delta}{\epsilon} - 1 = \frac{1}{\epsilon}$$

$$k = \frac{Q_c}{W} = \frac{1}{\frac{1}{\epsilon}} = \epsilon$$

$$P_b V_b = P_c V_c \Rightarrow P_b = \frac{1}{\delta} \times 1 \cdot \delta = P_a$$

4 (19ν)

$$\Delta U = \frac{\epsilon}{\gamma} n R \Delta T = \frac{\epsilon}{\gamma} (P_c V_c - P_a V_a)$$

$$\Delta U = \frac{\epsilon}{\gamma} \left( 1 - \frac{1}{\delta} \times \gamma \right) \times 100 = \gamma \epsilon$$

(A)

$$Q_{O_2} = Q_{He} \Rightarrow \frac{\sigma}{\gamma} n R \Delta T_{O_2} = \frac{c}{\gamma} n R \Delta T_{He}$$

1 (191)

$$\Rightarrow \frac{\Delta T_{He}}{\Delta T_{O_2}} = \frac{\Delta}{c} = \kappa > 1$$

$$DU = Q \Rightarrow DU_{O_2} = DU_{He} \Rightarrow m = 1$$

$$\vec{F} = \frac{q}{r} \hat{e}_r \rightarrow \theta = \delta_0$$

2 (199)

$$T = \frac{Q}{r} + \gamma v^2 \rightarrow \gamma v^2$$

سری ۶۷۵

3 (200)

سایت کنکور

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91, 14, 13

میلو محمدالدین (شیراز)

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