

نوین کنکور

کنکور

امتحان نهایی

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

novinkonkor.com

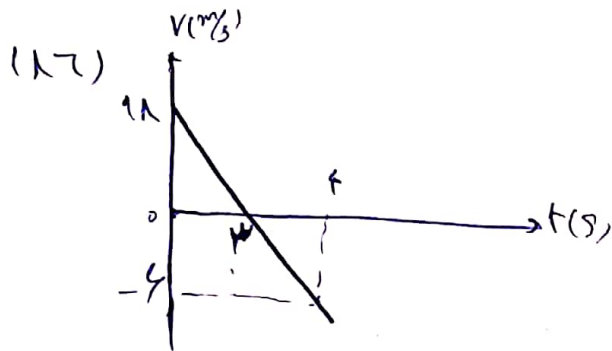
(111) $\cup^\circ$

(115) $\cup^\circ$

(112) $B = \frac{F}{IL} = \frac{kg/m}{S^2 A m} \quad \cup^\circ$

(113) $\frac{-E_e/a}{-E_e} = \frac{1}{a} \quad \cup^\circ$

(118) $B, \rightarrow \quad \cup^\circ$



$l = \frac{v_1 t_1}{r} + \frac{v_2 t_2}{r} = 2r m$

$\delta_{avg} = \frac{v_0}{f} = v_0 \delta \frac{m}{s} \quad \cup^\circ$

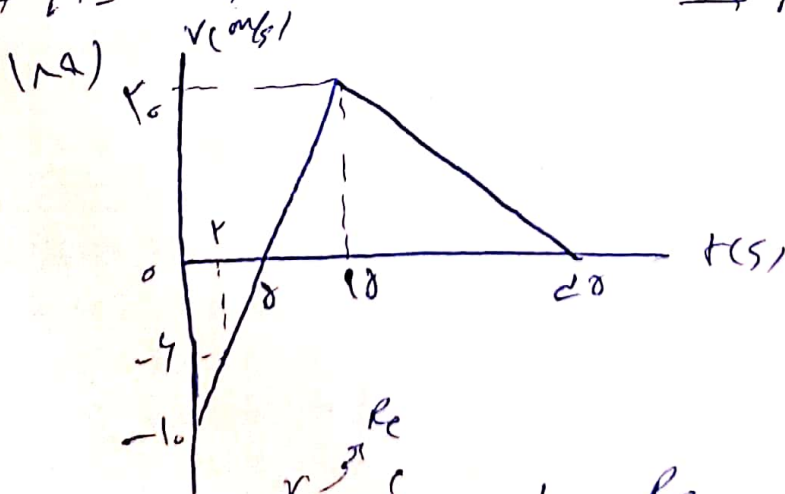
(119) $\delta \frac{m}{s} : \quad v_{00} = \frac{1}{T} a (v_{01} - 1) (t)^2 + t v_0$

$\delta \frac{m}{s} : \quad v_{00} = \frac{1}{T} a (v_{01} - 1) (v_0)^2 + (v_0)^2 - 1 a - t v_0 \rightarrow a = \frac{v_0}{T} \frac{m}{s} \quad \cup^\circ$

(121) $x = At^2 + Bt + C \rightarrow -\frac{B}{2A} = \delta \rightarrow B = -1 \cdot A$

$\begin{cases} A+B+C=49 \\ 16A+12B+C=0 \end{cases} \rightarrow \begin{cases} -9A+C=49 \\ 16A+C=0 \end{cases}$

$\rightarrow A=-7, B=7, C=14 \rightarrow K = -7t^2 + 7t + 14 \rightarrow x_0 = 21m \quad \cup^\circ$



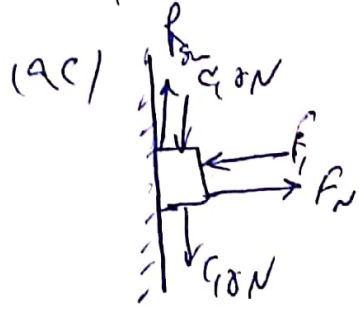
$\Delta K = -\frac{v_1^2}{2} + \frac{v_0^2}{2} = -9 + 100$

$\rightarrow K = (100m/s)^2 \quad \cup^\circ$

(190) $\frac{g_c}{g_i} = \left(\frac{r_i}{r_{c_{eth}}} \right)^2 \rightarrow \frac{1}{10} = \frac{r_e}{r_{c_{eth}}} \rightarrow h = 9r_e \quad \cup^\circ$

$$1a1) f_{smax} = \mu_s f_N \rightarrow f = \frac{1}{c} (mg - f) \rightarrow f = \frac{1}{c} (c - f) \rightarrow f = 1 \cdot N$$

$$f_{smax} = \mu_s f_N \rightarrow f_{smax} = \frac{1}{c} \times 2 = 2N \quad 2N < 1N \text{ (not possible)} \rightarrow f_s = 1N$$



$$f_{smax} = 9N, R = \sqrt{f_{smax}^2 + f_N^2} \rightarrow R = \sqrt{9^2 + 1^2} \rightarrow R = \sqrt{82} \rightarrow f_N = 1N$$

$$f_{smax} = \mu_s f_N \rightarrow 9 = \mu_s \times 1 \rightarrow \mu_s = 9 \times 1 = 9$$

$$1a2) \text{ a) } x = vt = 10 \times 1 = 10m \quad \times$$

$$\text{b) } \frac{\delta t}{2} = \frac{1}{2} \rightarrow \lambda = \frac{1}{2} m \rightarrow \lambda = VT \rightarrow \frac{1}{2} = 10T \rightarrow T = 0.05s$$

$$c) \lambda = \frac{v}{f} \rightarrow \lambda = 0.5m \quad \checkmark \rightarrow \lambda = 0.5m$$

$$\text{d) } \lambda = 0.5m \rightarrow \lambda = 0.5m \quad \checkmark$$

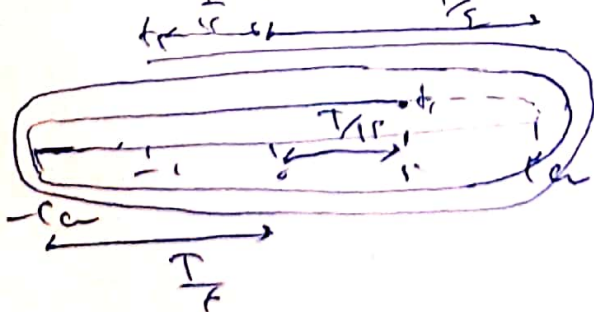
$$\text{e) } \lambda = 0.5m \rightarrow \lambda = 0.5m \quad \checkmark$$

$$1a2) \frac{v}{v_c} = \frac{\sum v_i}{\sum v_o} = \frac{0.7}{0.8} = \frac{7}{8} \quad \checkmark$$

Alirezagooneh

$$1a2) \omega = \frac{v}{r} \rightarrow T = \frac{1}{f} s, \quad x_c = 0.10 \cos 2\pi \times \frac{1}{10} = 0.10m$$

$$x_c = 0.10 \cos 2\pi \times \frac{1}{10} = 0.10 \cos (2\pi - \pi/2) = -0.10m$$



$$t = \frac{T}{10} + \frac{T}{2} + \frac{T}{2} + \frac{T}{2} + \frac{T}{2} = T + \frac{T}{2} = \frac{3T}{2}$$

$$t = \frac{3T}{2} s \quad \checkmark$$

$$1a2) \lambda = \frac{v}{f} = \frac{c \times 10^8}{9 \times 10^{14}} = \frac{1}{10} nm$$

$$\frac{1}{\lambda} = \mu \left(\frac{1}{n_c} - \frac{1}{n_c'} \right)$$

$$\rightarrow \frac{1}{\lambda} = \frac{1}{n_c'} - \frac{1}{n_c} \rightarrow n = n_c, n_c' = 1$$

$$(9V) \quad \frac{1}{\lambda_1} = R \left(\frac{1}{12} - \frac{1}{\infty} \right) \rightarrow \lambda_1 = \frac{(22)}{8R}$$

$$\frac{1}{\lambda_2} = R \left(\frac{1}{4} - \frac{1}{\infty} \right) \rightarrow \lambda_2 = \frac{27}{16R} \rightarrow \frac{1}{\lambda_2} = \frac{27}{8} \Sigma^2$$

(101) $E_1 = \frac{\Delta V}{d_1} \rightarrow E_1 = \frac{V_0}{\frac{r_0}{\epsilon_0}} = \epsilon_0 \lambda_1^2 u$, $\epsilon_0 \lambda_1^2 = \frac{\Delta V}{r_0} \rightarrow \Delta V_1 = \lambda_1 u$

$E_2 = \frac{\Delta V}{d_2} \rightarrow E_2 = \frac{V_0}{\frac{r_0}{\epsilon_0}} = \epsilon_0 \lambda_2^2 u$, $\epsilon_0 \lambda_2^2 = \frac{\Delta V}{r_0} \rightarrow \Delta V_2 = \lambda_2 u$

(109) $E_2 > E_1 > E_3 \rightarrow \Delta V_2 > \Delta V_1 > \Delta V_3$

(100) $\vec{F}_1 \leftarrow \vec{F}_2 \quad \vec{F}_{net} = \frac{1}{4} \vec{F}_1$

$\vec{F}_{net} = \frac{11}{c} \vec{F}_{1c}$

$\frac{1}{4} \times \frac{q_1 q_2}{4\pi\epsilon_0 r^2} = \frac{11}{c} \times \frac{q_1 q_2}{4\pi\epsilon_0 r^2} \rightarrow \frac{1}{4} = \frac{11}{c} \rightarrow c = 44$

(101) $d = r(d-u) \rightarrow d = \frac{r}{c} u \rightarrow d-u = \frac{u}{c}$

(102) $V_1 = V_2 \rightarrow \lambda_1 I_1 = \lambda_2 I_2 \rightarrow I_2 = \frac{c}{r} I_1$

(103) $\epsilon = I_0 - rI \rightarrow rI = \epsilon u$, $R I = \epsilon u \rightarrow \frac{R I}{r I} = \frac{\epsilon}{u} \rightarrow \left[R = \frac{c}{\epsilon} r \right]$

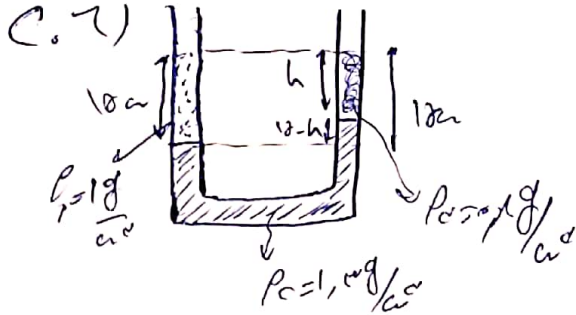
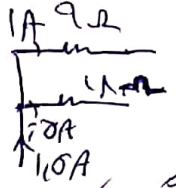
$I_c = \frac{\epsilon}{R_c + r} = \frac{I_0}{\frac{V}{r}} = \frac{\epsilon}{V r}$, $V_c = \frac{c}{\epsilon} I_c = \frac{r}{\epsilon} \times \frac{\epsilon}{V r} = \frac{1}{V} \times \frac{c}{\epsilon} = \frac{c}{\epsilon} r$

$$2.2) V = RI \rightarrow I = R \times \frac{1}{10} \rightarrow R = 10 \Omega$$

$$I = \frac{\mathcal{E}}{R_T + r} \rightarrow \frac{1}{10} = \frac{\mathcal{E}}{R_T + r} \rightarrow \mathcal{E} = r \mathcal{E} U \quad \Sigma^0$$

$$2.3) \mathcal{E} = \frac{\mathcal{E}}{R_T + r} \rightarrow \frac{1}{r} = \frac{1}{R_T + r} \rightarrow R_T = 2 \Omega \rightarrow R = 1 \Omega$$

$$P = RI^2 = 1 \times \frac{1}{2} = 0.5 \text{ W} \quad \Sigma^0$$



$$10 = \frac{1}{\rho_1} h + \frac{1}{\rho_2} (10 - h)$$

$$\rightarrow h = 2 \text{ cm}, V = Ah = 1 \times 2 = 2 \text{ cm}^3 \quad \Sigma^0$$

$$2.4) W_{mg} = +mgh = \frac{1}{2} \times 10 \times \frac{1}{10} = 0.5 \text{ J}$$

$$W_{rk} = \frac{1}{2} \times \frac{1}{2} (9 - 0) + \frac{1}{2} \times 10 (0 - \frac{1}{10}) = -1.5 \text{ J} \quad \Sigma^0$$

$$2.5) -\frac{1}{2} \times \frac{1}{2} m \times 22 = \frac{1}{2} m (\mathcal{U}^2 - 7^2) + 10 m$$

$$\rightarrow -12 = \frac{1}{2} (\mathcal{U}^2 - 7^2) \rightarrow \mathcal{U}^2 = 29 \rightarrow \mathcal{U} = 5.38 \text{ m/s} \quad \Sigma^0$$

$$2.6) L_{\text{gas}} = l_1 \lambda \times l_2^{-1} \times \frac{1}{r} \Delta \theta$$

$$L_{\text{gas}} = l_1 \lambda \times l_2^{-1} \times \frac{1}{r} \Delta \theta$$

$$\rightarrow \lambda \times l_2^{-1} = \frac{1}{r} \Delta \theta \rightarrow \Delta \theta = 100^\circ \text{C}$$

2.7.1

□ A (rezagash)
 $\rightarrow$ $\frac{1}{2} m v^2$

$$0^\circ \text{C} \rightarrow 10^\circ \text{C} \rightarrow 20^\circ \text{C} \rightarrow 30^\circ \text{C} \rightarrow 40^\circ \text{C} \rightarrow 50^\circ \text{C} \rightarrow 60^\circ \text{C} \rightarrow 70^\circ \text{C} \rightarrow 80^\circ \text{C} \rightarrow 90^\circ \text{C} \rightarrow 100^\circ \text{C}$$

$$1 \times 100 \times 10 + 1 \times 100 \times 20 + 2 \times 100 \times 30 + m \times 100 \times (-10) = 0$$

$$\rightarrow 1000 + 2000 + 6000 - 100m = 0 \rightarrow 10m = 90 \rightarrow m = 9 \text{ kg} \quad \Sigma^0$$

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