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2.6 گزینہ 4

$$PV = nRT \Rightarrow P \times 8 \times 10^{-3} = 1 \times 8 \times 300$$

$$P = 3 \times 10^5 \text{ Pa}$$

2.7 گزینہ 1. قوت مورد ب درست است۔

$$\text{تندی در کف} = \frac{240}{8} = 30 \text{ m/s}$$

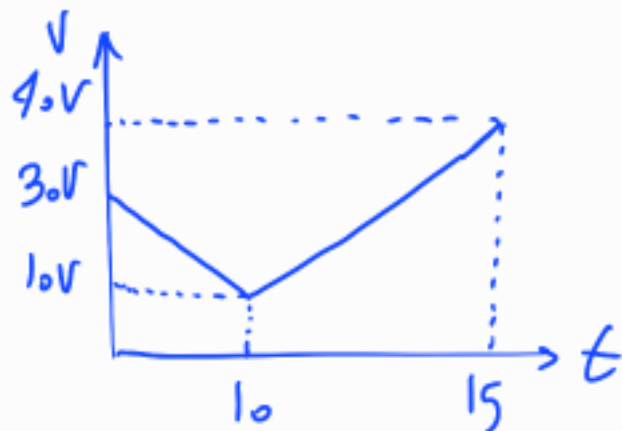
2.8 گزینہ 1

$$\text{تندی } t=2 \text{ } \bar{v} = \frac{\Delta x}{12} = 3 \Rightarrow \Delta x = 36 \text{ m}$$

$$x_{14} - x_2 = 36 \Rightarrow \underline{x_{14} = 42}$$

$$\frac{v_{2-14}}{v_{12-14}} = \frac{\Delta x_{2-14}}{\Delta x_{12-14}} = \frac{60}{180} = \boxed{\frac{1}{3}}$$

2.9 گزینہ 3



$$a_{10-15} = \frac{v_{15} - v_{10}}{15 - 10} = \frac{4.0V - 1.0V}{5} = 6V$$

$$v_A = 1.0 \text{ m/s} \Rightarrow x_A = 1.0t + 4.00$$

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$$v_B = 3.0 \text{ m/s} \Rightarrow x_B = 3.0t - 3.00$$

$$x_A - x_B = 6.00 \Rightarrow -2.0t + 7.00 = 6.00 \Rightarrow \boxed{t_1 = 5}$$

$$x_A - x_B = -6.00 \Rightarrow -2.0t + 7.00 = -6.00 \Rightarrow \boxed{t_2 = 6.5 \text{ s}}$$

$$\frac{t_2}{t_1} = 1.3$$

211: گزینہ 2

از کف با زدن چتر تا تندی صدم سرعت، ہم شب کھن

می یابد.

212: گزینہ 3



$$mg = f_s \Rightarrow f_s = 30 \text{ N}$$



$$\Rightarrow f_s + 55 - 30 \Rightarrow f_s = 25$$

چون کمر از 30 است فقط تا کن است.

$$F_R = \sqrt{f_s^2 + F_2^2} = \sqrt{25^2 + 60^2} = \underline{65 \text{ N}}$$

$$kox - mg = -ma$$

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$$200 \Delta x - 8 = -16 \Rightarrow \Delta x = 3,2 \text{ cm} \rightarrow x_2 = 23,2 \text{ cm}$$

2^{ترتیب} 214

$$x = -\frac{A}{2} \text{ سندانده} \Rightarrow \phi = \frac{4\pi}{3} \Rightarrow t = \frac{2T}{3} = \frac{1}{3} \Rightarrow T = \frac{1}{2} \text{ s}$$

$$\frac{t}{T} = \frac{\frac{3}{16}}{\frac{1}{2}} \Rightarrow t = \frac{3}{8}T \Rightarrow \phi = \frac{3\pi}{4}$$

$$\frac{U}{E} = \cos^2 \phi = \cos^2 \frac{3\pi}{4} = \frac{1}{2}$$

3^{ترتیب} - 215

$$\frac{\lambda}{2} = 5 \Rightarrow \begin{cases} \lambda = 10 \text{ cm} \\ v = 20 \text{ cm/s} \end{cases} \Rightarrow v = \lambda T \Rightarrow T = \frac{1}{2} \text{ s}$$

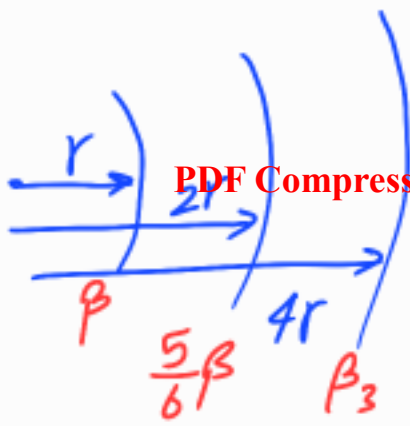
$$\begin{cases} t = \frac{1}{4} \\ T = \frac{1}{2} \end{cases} \quad t = \frac{T}{2} \Rightarrow \text{مسافت 20 cm به سمت راست} \\ \text{می رود}$$

$$\Rightarrow x_1 = +2$$

$$\Rightarrow \Delta x = 6 \text{ cm}$$

$$x_2 = -3$$

$$0t = \frac{T}{2} = \frac{1}{4} \Rightarrow v = \frac{6}{\frac{1}{4}} = 24 \text{ cm/s}$$



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$$\beta_2 - \beta_1 = 2.0 \log \frac{r_1}{r_2}$$

$$-\frac{1}{6}\beta = 2.0 \log \frac{1}{2}$$

$$-\frac{1}{6}\beta = -2.0 \times 0.3 \Rightarrow \beta = 36$$

$$\beta_3 - \beta_2 = 2.0 \log \frac{1}{2} \Rightarrow \beta_3 - \frac{6}{5}\beta = -6$$

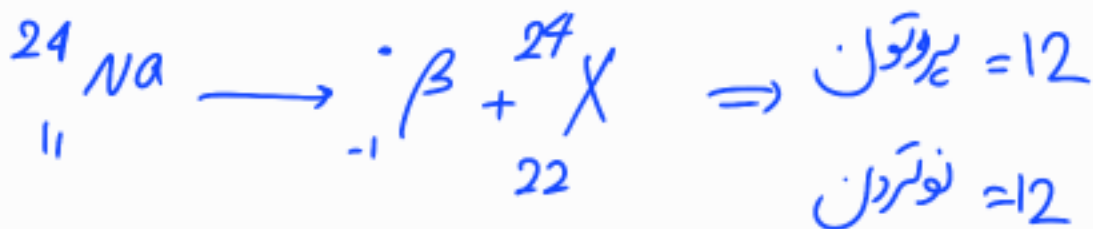
$$\beta_3 = 24 \text{ db}$$

217 گزینہ 3

زادہ اغراف درآینہ های تقاطع بازادیه حاله 2α است

$$2(50) = 100$$

218 گزینہ 4



219 گزینہ 1

$$f = \frac{c}{\lambda} \Rightarrow 2.5 \times 10^{14} = \frac{3 \times 10^8}{\lambda}$$

$$\Rightarrow \lambda = \frac{3 \times 10^8}{2.5 \times 10^{14}} = \frac{6}{5} \times 10^{-6}$$

$$\frac{1}{\lambda} = R \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right)$$

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$$\Rightarrow \frac{5}{6} \times 10^6 = 10^{-2} \left(\frac{1}{n^2} - \frac{1}{(n+3)^2} \right) \Rightarrow n = 3$$

پاس

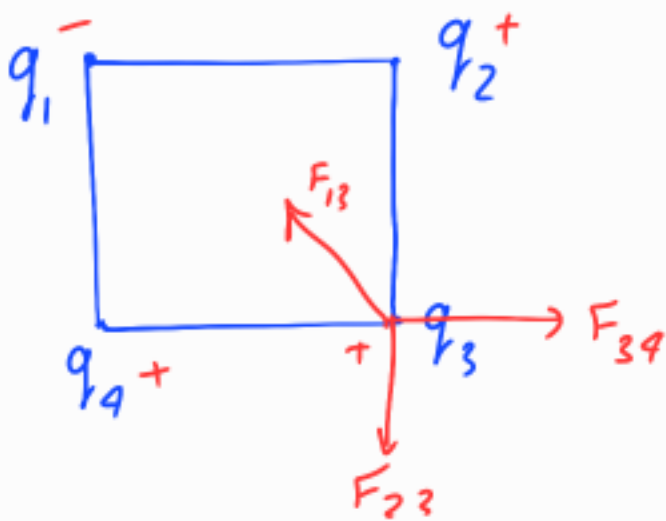
22. گزینہ 4

$$E_2 = \frac{-ER}{2^2} = \frac{-13.6}{4} = -3.4 \text{ eV}$$

$$E_4 = \frac{-ER}{4^2} = \frac{-13.6}{16} = -0.85 \text{ eV}$$

$$\Delta E = 2.55 \text{ eV} \Rightarrow \begin{matrix} n_1 = 2 \rightarrow r_1 = 4 \\ n_2 = 4 \rightarrow r_2 = 16 \end{matrix} \Rightarrow r_2 - r_1 = 12$$

22. گزینہ 2



$$\sqrt{F_{34}^2 + F_{23}^2} = F_{13}$$

$$\sqrt{\left(\frac{q_4}{a^2}\right)^2 + \left(\frac{q_2}{a^2}\right)^2} = \frac{q_1}{2a^2}$$

$$\frac{q_4^2 + q_2^2}{a^4} = \frac{q_1^2}{4a^4} \Rightarrow q_4^2 + q_2^2 = \frac{q_1^2}{4}$$

$$\Rightarrow q_2 = q_4 = \left| \frac{\sqrt{2}}{2} \right| q_1 \Rightarrow$$

بہت کم صغیر
باید q_1 سے بڑا۔

q at A, q at B $\Rightarrow F = \frac{kq^2}{r^2}$

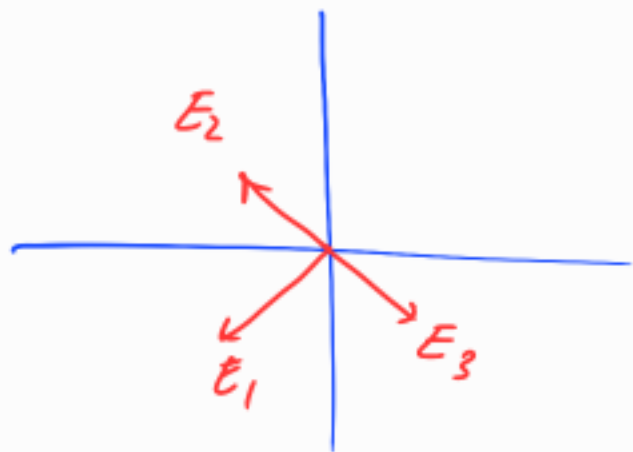
$4q$ at A, $-2q$ at B $\Rightarrow F' = \frac{8kq^2}{r^2}$

$$\boxed{\frac{F'}{F} = 8}$$

$$E_1 = \frac{kq_1}{r^2}$$

$$E_3 = \frac{k \times 6}{r^2}$$

$$E_2 = \frac{k \times 9}{r^2}$$



$$E_2 - E_3 = \frac{3k}{r^2} \Rightarrow E_R = \sqrt{\left(\frac{3k}{r^2}\right)^2 + \left(\frac{kq}{r^2}\right)^2} = 6,25 \times 10^{-6} \text{ N/C}$$

$$\frac{k}{r^2} \sqrt{9 + q^2} = 6,25 \times 10^{-6} \Rightarrow \frac{9 \times 10^{-9}}{(6\sqrt{2} \times 10^{-2})^2} \sqrt{9 + q^2} = 6,25 \times 10^{-6}$$

$$q = 4 \mu\text{C}$$

$$\Delta V = 10\% \text{ کاهش} \Rightarrow \Delta q = 10\% \text{ افزایش}$$

گزینه 4 224

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$$u = \frac{1}{2} C V^2, V_2 = 0.9 V_1 \Rightarrow u_2 = 0.81 u_1$$

19٪ کاهش

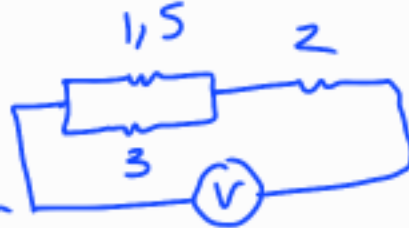
گزینه 3 225

دو مقاومت 4 و 12 به عدت آمیج موازی، ازین 3ی رود. بنابراین در سنج

$$R_{eq} = 6 \Omega$$

$$\Rightarrow I = \frac{12}{6+2} = 1.5 A$$

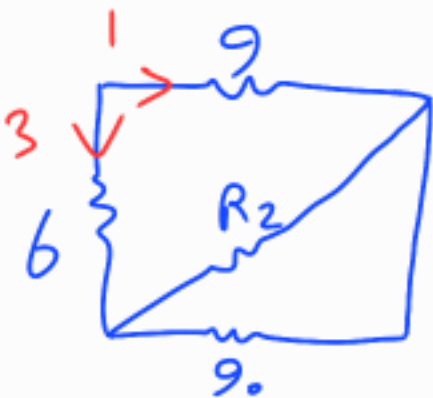
$$V = RI = 3 \times 1.5 = 4.5 V$$



در سربا تتر منقل لنده است

گزینه 2 226

$$I = \frac{\xi}{R_{eq} + r} \Rightarrow 4 = \frac{24}{R_{eq} + 1} \Rightarrow R_{eq} = 5 \Omega$$



$$V_1 = V_2 \Rightarrow 3 \times 6 = 9 + \frac{9 \cdot R_2}{9 + R_2} \Rightarrow R_2 = 1 \Omega$$

$$I_{R_2} = \frac{9}{1} \times 1 = 9 A$$

$$P_2 = R_2 I^2 = 1 \times (9)^2 = \underline{81 J}$$

$$V = \frac{\mathcal{E} R_{eq}}{R_{eq} + r}$$

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$$V_2 = 76V_1 \Rightarrow \frac{(R_{eq})_2}{(R_{eq})_2 + 4} = \frac{16 (R_{eq})_1}{(R_{eq})_1 + 4}$$

$$R_{eq1} = \frac{6R_1}{R_1 + 6} + 12 + 4$$

$$\Rightarrow \underline{R_1 = 12 \Omega}$$

$$R_{eq2} = 4 \Rightarrow \text{چون مقادیرهای } 6, R, 12 \text{ اتصال کوتاهی شود.}$$

228 - گزینه 2

$$12, 4 \rightarrow \text{سوزی } R = 3 \rightarrow I_9 = \frac{12}{16} \times 1 = \frac{3}{4} A$$

$$3, 7 \xrightarrow{\text{سوزی}} R = 10$$

$$10, 10 \rightarrow \text{سوزی } R = 5 \rightarrow I_{10} = 1 A$$

$$5, 5 \xrightarrow{\text{سوزی}} R_{eq} = 10 \Rightarrow I = \frac{20}{10} = 2 A$$

229
گزینه 1!

$$ma = qvB \Rightarrow 1,7 \times 10^{-27} \times a = 1,6 \times 10^{-19} \times 10^4 \times 1,7 \times 10^{-4}$$

$$\underline{a = 1,6 \times 10^1 \text{ m/s}^2}$$

$$\mathcal{E} = \frac{\Delta\Phi}{\Delta t} = \frac{\Delta B \cdot A}{\Delta t} = \frac{2 \times 10^{-9} \times 600 \times 10^{-4}}{10^{-3}}$$

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$$\mathcal{E} = 1.2 \text{ V}$$

میدان درگاہش میں میدان القای باید امرائیں د
 میں صلیق دست راست سامعند

231 گزینہ 4

232 گزینہ 1

$$\Delta k = 0 \Rightarrow \omega_f = 0$$

233 گزینہ 1

$$H_1 = 74 + 12 = 86 \text{ cm} \quad , \quad 12 \times 2 = h' \times 3 \Rightarrow h' = 8 \text{ cm}$$

$$H_2 = 73 + 8 = 81 \Rightarrow \Delta H = 86 - 81 = 5 \text{ cm}$$

234 گزینہ 1

$$P_1 \times 20 + 5 P_2 = P_3 h_3$$

$$16 + 12 = P_3 h_3 = 28 \Rightarrow m = \rho_3 h_3 A = 56 \text{ gr}$$

235 گزینہ 3

$$\Delta l = (L \alpha_2 \Delta T) - (L \alpha_1 \Delta T) = L \Delta T (\alpha_2 - \alpha_1)$$

$$\Rightarrow 2.3 \times 10^{-3} = 4 \times \Delta T \times 11.5 \times 10^{-6} \Rightarrow \Delta T = 5.0$$