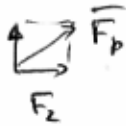


A1 $S = \text{площадь под графиком} = \frac{1}{2}(6+4) \cdot 2 = 10 \text{ (м)} \text{ (3)}$

A2 $\vec{F}_3 + \vec{F}_1 = \vec{F}_{13}$  $F_p = \sqrt{F_{13}^2 + F_2^2} = \sqrt{2^2} \text{ (м)} \text{ (3)}$
 $F_{13} = 3 - 2 = 1 \text{ (м)}$

A3 $F = kx \Rightarrow x = \frac{F}{k} = \frac{100}{10^4} = 0,01 \text{ (м)} = 1 \text{ (см)} \text{ (3)}$

A4 $\Delta p = F \cdot \Delta t = 10 \cdot 4 = 40 \text{ кг м/с} \text{ (1)}$

A5 $T = \pi \sqrt{\frac{m}{k}} \Rightarrow T_2 = T_1 \text{ (4)}$

A6 (1)

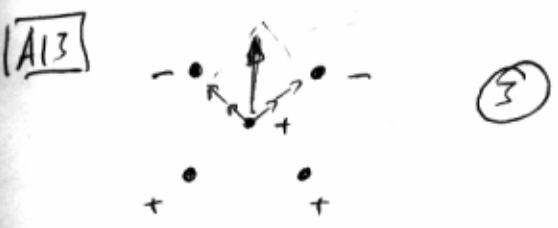
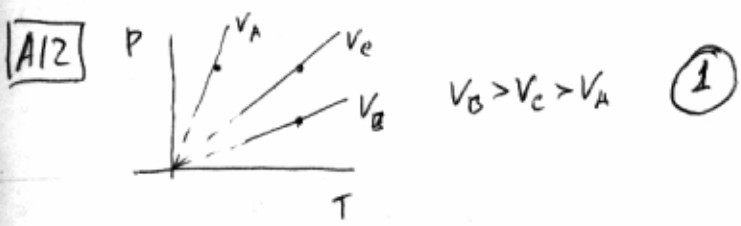
A7 $\frac{m\omega^2}{2} = \frac{m\omega_0^2}{2} + mg \Rightarrow \omega = \sqrt{\omega_0^2 + 2g/l} = 15 \text{ (1/с)} \text{ (4)}$

A8 $t_p = 100 + 273 = 373 \text{ (К)} > t_A \text{ (2)}$

A9 $v = \text{const} \text{ (3)}$

A10 $Q = mc\Delta t = 0,2 \cdot 640 \cdot 20 = 256 \cdot 10^3 \text{ (Дж)} \text{ (2)}$

A11 $\frac{A_{12}}{A_{23}} = \frac{5}{1} = 5 \text{ (2)}$ (площадь под графиком)



A14 $\eta = \frac{U_2}{R_2} = \frac{U_3}{R_3} \Rightarrow U_3 = \frac{R_3}{R_2} \cdot U_2 = \frac{3}{2} \cdot 16 = 24 \text{ (В)} \text{ (4)}$

A15 (3) (узел на дифракции)

A16 $\lambda = v \cdot T = v \cdot 2\pi \sqrt{LC} \text{ (4)}$

A17 (2) $d > 2F \Rightarrow f < 2F$

A18 (4)

A19 $P = \eta^2 R$ $\eta = \cos \alpha$ $\text{и } P_2 = \cos \alpha$
 $\Rightarrow \Sigma R = \text{const} \text{ (1)}$

A20 (4)

A21 $N = N_0 2^{-t/T} = N_0 2^{-2T/T} = \frac{N_0}{4}$ - количество
 $\Rightarrow N' = N_0 - N = 0,75 N_0 \text{ (2)}$

A22 $^{219}_{85}\text{At} \rightarrow ^4_2\alpha + ^{215}_{83}\text{Bi} + ^4_2\text{He} \text{ (3)}$
 $Z = 85 - (2-2) = 85$ $A = 219 - 4 = 215$

A23 $E = h \frac{c}{\lambda} = 6,6 \cdot 10^{-34} \frac{3 \cdot 10^8}{2 \cdot 10^{-7}} = 10^{-17} \text{ (Дж)} \text{ (2)}$

A24 $T = 2\pi \sqrt{\frac{e/g}{g}} \text{ (1)}$

A25 (4)

B1

A	B	B
1	2	1

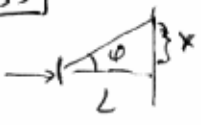
B2

A	B
1	1

 $\eta = \frac{P}{2+R}$ $4 = \eta R$

B3 $v = v_0 + at = v_0 + 2a = 3v_0 \Rightarrow a = v_0$
 $S = v_0 t + \frac{at^2}{2} = 2v_0 + 2a = 4v_0 \Rightarrow v_0 = \frac{S}{4} = 5 \text{ (м/с)}$

B4 $Q_1 = m_e \lambda = 0,1 \cdot 3,3 \cdot 10^5 = 3,3 \cdot 10^4 \text{ Дж}$
 $Q_2 = k_n c_n \Delta t = 906 \cdot 2100 \cdot 20 = 925 \cdot 10^4 \text{ Дж}$
 $\therefore Q_1 > Q_2$ $\therefore t_k = 0^\circ \text{C}$

B5  $d \sin \varphi = 2\lambda$ $\sin \varphi = \frac{x}{L}$
 $\frac{e}{n} \cdot \frac{x}{L} = 2\lambda \Rightarrow x = \frac{2\lambda L n}{e} = 0,3 \Rightarrow \Delta x = 0,6 \text{ нм}$