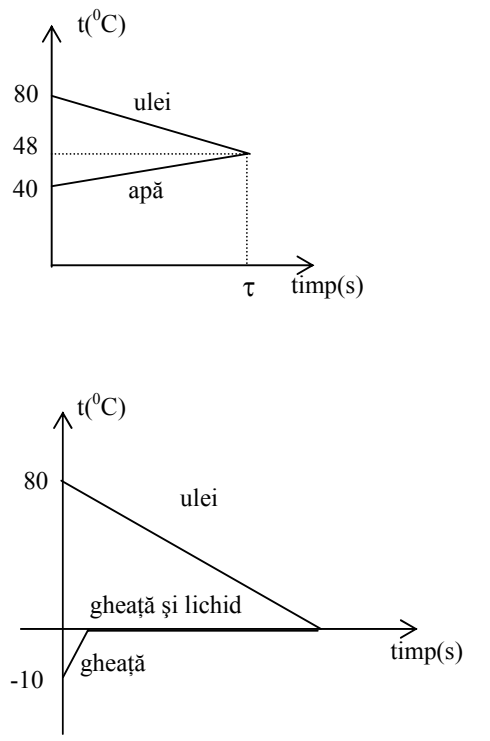
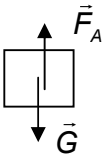
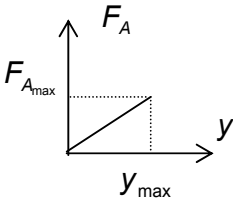
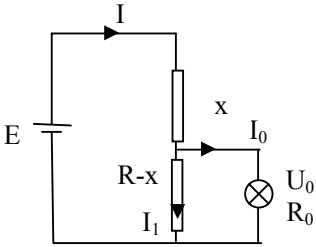
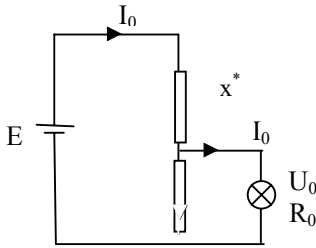


Subiect	Parțial	Total
1. Total punctaj subiect 1		10
<p>a) $\frac{m_1}{2} c_u (t_1 - \theta) = m_2 c_a (\theta - t_2)$</p> <p>$\theta = 48^\circ \text{C}$</p>	<p>2,5</p> <p>0,5</p>	3
<p>b) analiza cantitativă pentru $\theta_{\text{echilibru}}$</p> <p>$m_3 c_g (0 - t_3) + m_x \lambda_g = \frac{m_1}{2} c_u (t_1 - 0)$</p> <p>$m_x = 0,125 \text{Kg}$ apă; $m_g = 1,875 \text{Kg}$ gheață</p>	<p>1</p> <p>2</p> <p>1</p>	4
<p>c) –</p> 	<p>1</p> <p>1</p>	2
Oficiu	1	

Subiect	Parțial	Total
2. Total punctaj subiect 2		10
<p>a) $F_A = G \Rightarrow y_0 = \frac{\rho}{\rho_0} l$</p>  <p>$\rho \leq \rho_0 \Rightarrow 0 < y < l$</p>	<p>1</p> <p>2</p> <p>1</p>	4
<p>b) $F = F_A - G$</p> <p>$F = \rho_0 l^2 g (y - y_0)$</p> <p>$F = \rho_0 l^2 g \Delta y$</p> <p>$F = k \Delta y (\text{resort})$</p>	<p>0,5</p> <p>1</p> <p>0,5</p>	2
<p>c) $\Delta E = L_{F_A}$</p> <p>$\Delta E = -mg(y_{\max} - \frac{l}{2}) - \frac{mgl}{2}$</p>  <p>$L_{F_A} = -\frac{\rho_0 l^2 g y_{\max}}{2}$</p> <p>$y_{\max} \frac{2\rho l}{\rho_0}$</p>	<p>0,5</p> <p>1</p> <p>1</p> <p>0,5</p>	3
Oficiu	1	

Subiect	Parțial	Total
3. Total punctaj subiect 3		10
<p>a. $I = I_0 + I_1; I = U_0 \left(\frac{1}{R_0} + \frac{1}{R-x} \right)$ ►</p>  <p> $I = \frac{E - U_0}{x}$ $\eta = \frac{U_0^2}{R_0 E I}$ $R - x = \frac{R_0}{\frac{E \eta}{U_0}} - 1$ $x = \frac{E - U_0}{U_0^2} R_0 E \eta$ $R = R_0 \frac{E}{U_0} \left[\eta \left(\frac{E}{U_0} - 1 \right) + \frac{1}{\frac{1}{\eta} - \frac{E}{U_0}} \right]$ $R = 8,53 \Omega$ </p>	<p>0,5</p> <p>0,5</p> <p>0,5</p> <p>0,5</p> <p>0,5</p> <p>2</p> <p>0,5</p>	5,5
<p>b. $I_{\max} = \frac{U_0^2}{R_0 E \eta}$</p> <p>$I_{\max} = 2,81 A$</p>	<p>1</p> <p>0,5</p>	1,5
<p>c. $I_{\text{bec}} = I_0$</p>  <p> $\eta_{\max} = \frac{U_0}{E} = 75\%$ </p>	<p>1</p> <p>1</p>	2
Oficiu	1	

(subiect propus de: prof. Sorin Chirilă – Colegiul Economic “D.P.M.” – Alba Iulia, prof. Ioan Pop – C.N. M. Eminescu – Satu Mare, prof. Ion Toma – I.S.M.B. – București, prof. Victor Stoica – Șc. 165 - București)