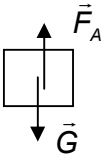
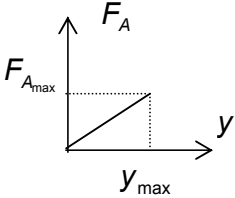
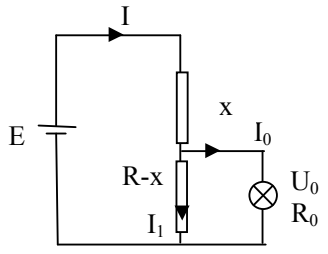
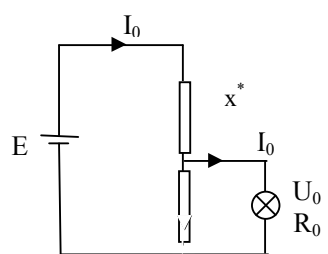


Subiect	Parțial	Total
<b>1. Total punctaj subiect 1</b>		<b>10</b>
a) $\frac{m_1}{2} c_u (t_1 - \theta) = m_2 c_a (\theta - t_2)$  $\theta = 48^\circ \text{C}$	2,5  0,5	3
b) analiza cantitativă pentru $\theta_{\text{echilibru}}$ $m_3 c_g (0 - t_3) + m_x \lambda_g = \frac{m_1}{2} c_u (t_1 - 0)$  $m_x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

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

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

(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)