

**Subiectul A. MECANICĂ**

Nr. item	Soluție/Rezolvare
<b>III.a.</b>	$\frac{mv_0^2}{2} = mgh_{\max}$ $h_{\max} = v_{\text{med}} t; \quad t = 2s$ $v_{\text{med}} = \frac{v_0}{2};$ $v_0 = gt$ <p>Rezultat final: <math>v_0 = 20 \text{ m/s}</math></p>
<b>b.</b>	$t = 0 \Rightarrow E_{c0} = 400J$ $E_{c0} = \frac{mv_0^2}{2}$ <p>Rezultat final: <math>m = 2kg</math></p>
<b>c.</b>	$E = ct \Rightarrow E_{c0} = mgh_{\max}$ <p>Rezultat final: <math>h_{\max} = 20m</math></p>
<b>d.</b>	$E_{c0} = E_c + E_p$ $E_c = E_p \Rightarrow E_{c0} = 2E_p$ $mgh = \frac{E_{c0}}{2}$ <p>Rezultat final : <math>h = 10m</math></p>