

## OPĆINSKO/GRADSKO NATJECANJE IZ FIZIKE 2017/2018

Osnovne škole – rješenja i smjernice za bodovanje

22.01.2019.

1.  $F = k x$  1 bod  
 $k = 2000 \text{ N/m}$  2 boda  
 $W = F s$  1 bod  
 $F = 36 \text{ N}$  1 bod  
 $W = 14,4 \text{ J}$  2 boda
2.  $R_{B1} = 0 \Omega$  1 bod  
 $R_{B2} = 3000 \Omega$  1 bod  
 $R_{\text{ukupno}} = R_A + R_B + R_C$  1 bod  
 $R_{\text{ukupno } 1} = 6000 \Omega$  1 bod  
 $R_{\text{ukupno } 2} = 9000 \Omega$  1 bod  
 $I_1 = \frac{U}{R_{\text{ukupno } 1}} = 0,0015 \text{ A}$  1 bod  
 $I_2 = \frac{U}{R_{\text{ukupno } 2}} = 0,001 \text{ A}$  1 bod  
 $U_{\text{voltmetar}} = I (R_A + R_B)$  1 bod  
 $U_{\text{voltmetar } 1} = 4,5 \text{ V}$  1 bod  
 $U_{\text{voltmetar } 2} = 6 \text{ V}$  1 bod
3.  $m = \rho V$  1 bod  
 $m_A = 1,6 \text{ kg}$  1 bod  
 $m_B = 3,6 \text{ kg}$  1 bod  
 $\rho_{\text{smjese}} = 1056,91 \text{ kg/m}^3$  2 boda  
 $Q_{\text{predano}} = Q_{\text{primljeno}}$  2 boda  
 $Q = mc\Delta T$  1 bod  
 $c_A = 2835 \text{ J/kgK}$  2 boda
4.  $l_2 = 2l_1$  1 bod  
 $r_2 = \frac{1}{2} r_1$  1 bod

|                         |        |
|-------------------------|--------|
| $R = \rho \frac{l}{S}$  | 1 bod  |
| $S = r^2 \pi$           | 1 bod  |
| $R_2 = 8R_1$            | 2 boda |
| $P = \frac{U^2}{R}$     | 1 bod  |
| $P_2 = \frac{1}{8} P_1$ | 2 boda |
| $P_2 = 50 \text{ W}$    | 2 boda |

5.  $E_{\text{uloženo}} = 100 \text{ mgh}$  2 boda

$E_{\text{dobiveno}} = mc\Delta T$  1 bod

$E_{\text{uloženo}} = E_{\text{dobiveno}} + E_{\text{okolina}}$  2 boda

$\eta = \frac{E_{\text{dobiveno}}}{E_{\text{uloženo}}}$  1 bod

$\eta = \frac{100mgh}{mc\Delta T} = 0,65$  2 boda

$E_{\text{okolina}} = 0,35 E_{\text{uloženo}}$  1 bod

$E_{\text{uloženo}} = 300 \text{ J}$  1 bod

$m = 0,3 \text{ kg}$  2 boda