

Есеп 4

$h_1 = 30 \text{ мм}$

$h_2 = 60 \text{ мм}$

$h_3 = ?$

$\rho_k = 2700 \text{ кг/м}^3$

$\rho_{\text{ж}} = 900 \text{ кг/м}^3$

$h_3 = ?$

$h = h_1 + h_2$

$\frac{h}{\rho_k} = \frac{h_3}{\rho_{\text{ж}}}$

$h = 90 \text{ мм}$

$\frac{90 \text{ мм}}{900 \text{ кг/м}^3} = \frac{x}{2700 \text{ кг/м}^3}$

$x = \frac{90 \text{ мм} \cdot 2700 \text{ кг/м}^3}{900 \text{ кг/м}^3} = 270 \text{ мм} = 27 \text{ см}$

Есеп 3.

$R = 200 \text{ Ом}$

$\eta = 80 \%$

$U = 220 \text{ В}$

$t = 25 \text{ мин} = 1500 \text{ с}$

$t_1 = 20 \text{ }^\circ\text{C}$

$t_2 = 100 \text{ }^\circ\text{C}$

$U_1 = 0,6 \text{ А} = 0,6 \cdot 10^{-3} \text{ А}$

$\rho_{\text{ж}} = 1000 \text{ кг/м}^3$

$c = 4200 \text{ Дж/кг}^\circ\text{C}$

$\Delta m = ?$

$m = \rho V$

$m = 1000 \text{ кг/м}^3 \cdot 0,6 \cdot 10^{-3} \text{ м}^3$

$0,6 \text{ м}^3 = 600 \text{ л}$

$\eta = \frac{A_{\text{ж}}}{A_{\text{эл}}}$

$A_{\text{ж}} = \frac{U}{R} \cdot t$

$A_{\text{ж}} = \frac{248400 \text{ В}}{200 \text{ Ом}} \cdot 1500 \text{ с} = 363 \cdot 10^3 \text{ Дж}$

$\eta = A_{\text{ж}} = Q$

$Q = c m_1 \Delta t$

$\Delta t = t_2 - t_1$

$\Delta t = 80 \text{ }^\circ\text{C}$

$Q = \eta \cdot A_{\text{ж}}$

$Q = 0,8 \cdot 363 \cdot 10^3 \text{ Дж} = 290400 \text{ Дж}$

$m_1 = \frac{Q}{c \Delta t}$

$m_1 = \frac{290400 \text{ Дж}}{4200 \text{ Дж/кг}^\circ\text{C} \cdot 80 \text{ }^\circ\text{C}} = 0,87 \text{ т} = 870 \text{ л}$

$\Delta m = m_1 - m = 870 \text{ л} - 600 \text{ л} = 270 \text{ л}$

Есеп 2

$$d_1 = 3,5 \text{ см}$$

$$L = 1,5 \text{ см}$$

Form 1

Есеп 1

$$Q_1 = Q_2$$

$$R = 200 \text{ Ом}$$

$$R_x = ?$$

$$R' = \frac{R + R_1}{R \cdot R_1}$$

$$R_1 = R + R$$

$$R_1 = 400 \text{ Ом}$$

$$R' = \frac{200 \text{ Ом} + 400 \text{ Ом}}{200 \text{ Ом} \cdot 400 \text{ Ом}} = 0,08 \text{ Ом}$$