

Experimental problem

The following devices and materials are given:

1. Balance (without weights)
2. Calorimeter
3. Thermometer
4. Source of voltage
5. Switches
6. Wires
7. Electric heater
8. Stop-watch
9. Beakers
10. Water
11. Petroleum
12. Sand (for balancing)

Determine specific heat of petroleum. The specific heat of water is $1 \text{ cal}/(\text{g}\cdot^\circ\text{C})$. The specific heat of the calorimeter is $0.092 \text{ cal}/(\text{g}\cdot^\circ\text{C})$.

Discuss assumptions made in the solution.