

Friday Worksheet

Name:

Calorimetry worksheet 4

- 1) An electric current of 1.35A at a potential difference of 6.80V was passed for 4.00 minutes through a calorimeter containing 80.0 mL of water. The temperature rose from 22.00 to 26.53 °C.
- a) Calculate the calibration factor in $\text{J}/^\circ\text{C}$, for this calorimeter
- b) 40.0 mL of 1.00 mol L^{-1} lead(II) nitrate solution, $\text{Pb}(\text{NO}_3)_2$, at 20.6°C was added to 40 mL of a solution containing excess potassium iodide, KI also at 20.6°C
- i. Write a balanced chemical equation for the reaction
- ii. Calculate the ΔH for the reaction above if the temperature of the water in the calorimeter reached a maximum of 27.8°C .
- iii. Using the same calorimeter, as above, 40.0 mL of 1.00 mol L^{-1} lead(II) nitrate solution, $\text{Pb}(\text{NO}_3)_2$, at 20.6°C was added to 40 mL of 0.500 mol L^{-1} potassium iodide solution, KI, also at 20.6°C . What is the highest temperature reached by the water