1. When a 12.8-g sample of KCl dissolves in 75.0 g of water in a calorimeter, the temperature drops from 31.0°C to 21.6°C. Calculate  $\Delta H$  for the process

 $KCl(s) \rightarrow K^{+}(aq) + Cl^{-}(aq)$ 

 $\Delta H = ?$ 

6. What is the final temperature of the solution formed when 1.52 g of NaOH is added to 35.5 g of water at 20.1 °C in a calorimeter?

 $NaOH(s) \rightarrow Na^{+}(aq) + OH^{-}(aq)$ 

 $\Delta H = -44.5 \text{ kJ/mol}$ 

2. What is the final temperature of the solution formed when 0.75 g of KMnO<sub>4</sub> is added to 85.5 g of water at 13.2 °C in a calorimeter?

 $KMnO_4(s) \rightarrow K^+(aq) + MnO_4(aq) \Delta H = +42.1 \text{ kJ/mol}$ 

7. When a 19.2-g sample of KCN dissolves in 65.0 g of water in a calorimeter, the temperature drops from 28.1°C to 15.4°C. Calculate  $\Delta H$  for the process

 $KCN(s) \rightarrow K^{+}(aq) + CN^{-}(aq)$ 

 $\Delta H = ?$ 

3. When a 25.7-g sample of NaI dissolves in 80.0 g of water in a calorimeter, the temperature rises from 20.5°C to 24.4°C. Calculate  $\Delta H$  for the process

 $NaI(s) \rightarrow Na^{+}(aq) + \Gamma(aq)$ 

 $\Delta H = ?$ 

8. What is the final temperature of the solution formed when 6.85 g of Ba(OH)<sub>2</sub> is added to 15.5 g of water at 17.1 °C in a calorimeter?

 $Ba(OH)_2(s) \rightarrow Ba^{2+}(aq) + 2OH^-(aq)$   $\Delta H =$ 

 $\Delta H = +12.9 \text{ kJ/mol}$ 

4. What is the final temperature of the solution formed when 1.45 g of KOH is added to 42.8 g of water at 17.2 °C in a calorimeter?

 $KOH(s) \rightarrow K^{+}(aq) + OH^{-}(aq) \quad \Delta H = -56.3 \text{ kJ/mol}$ 

9. When a 28.7-g sample of KI is dissolved in 60.0 g of water in a calorimeter, the temperature drops from 27.2°C to 13.2°C. Calculate  $\Delta H$  for the process

$$KI\left(s\right)\to K^{^{+}}\left(aq\right)+I^{^{-}}\left(aq\right)$$

 $\Delta H = ?$ 

5. When a 16.9-g sample of NaOH dissolves in 70.0 g of water in a calorimeter, the temperature rises from 22.4°C to 86.6°C. Calculate Δ*H* for the process

 $NaOH(s) \rightarrow Na^{+}(aq) + OH^{-}(aq)$ 

 $\Delta H = ?$ 

10. What is the final temperature of the solution formed when 1.05 g of NH<sub>4</sub>Cl is added to 18.5 g of water at 24.7 °C in a calorimeter?

 $NH_4Cl(s) \rightarrow NH_4^+(aq) + Cl^-(aq)$   $\Delta H = +14.5 \text{ kJ/mol}$