**REPORT**

**EXERCISE 11**

**Enthalpy of reaction and van't Hoff isobar**

**NAME:** **GROUP:**

**DATE OF EXERCISE:**

**I. Problem 1**

**1. Objective of the exercise  
...**

**2. Table 1 – Data and calculated values for acetic acid  
...**

**3. Table 2 – Data and calculated values for hypochlorous acid  
...**

**4. Table 3 – Data and calculated values for hypobromous acid  
...**

**5. Table 4 – Data and calculated values for hydrocyanic acid  
...**

**6. Calculations  
...**

**7. Conclusions  
...**

**II. Problem 2**

**1. Objective of the exercise  
...**

**2. Table 5 – Data and calculated values  
...**

**3. Calculations  
...**

**4. Graph of the relationship between protein solution pH and volume  
...**

**5. Graph of the relationship between the first derivative (dpH/dV) and volume  
...**

**6. Determination of protein solution concentration [mol/dm³] in the solution (Table 6 and calculations)  
...**

**7. Conclusions  
...**

**III. Problem 3**

**1. Objective of the exercise  
...**

**2. Table 7 – Titration of buffer (1:1) with NaOH solution  
...**

**3. Table 8 – Titration of buffer (1:2) with NaOH solution  
...**

**4. Table 9 – Titration of buffer (2:1) with NaOH solution  
...**

**5. Table 10 – Titration of buffer (1:1) with HCl solution  
...**

**6. Table 11 – Titration of buffer (1:2) with HCl solution  
...**

**7. Table 12 – Titration of buffer (2:1) with HCl solution  
...**

**8. Calculations  
...**

**9. Graph of buffer capacity versus added NaOH volume  
...**

**10. Graph of buffer capacity versus added HCl volume  
...**

**11. Conclusions  
...**