Laboratory Report Guideline – Titration of a Weak Acid

1. **Cover Page** – Title of the Report, Name, Partner's Name, Date, TA Name, Section #. [1 pt each]

2. **Data**

   Table of the mass of KHP and NaOH volume and final molarity for each titration for at least three Trials, include initial and final volumes. Differences should be within 5%. [5]
   Two titration curves from part II - properly labeled. [5]
   Two titration curves from part III - properly labeled. [5]

3. **Calculation**

   Part I - An example calculation for the determination of the NaOH molarity (standardization). [5].
   A calculation of the average and % difference between values. [5].

   Part II - Example calculations showing the three methods of calculating the molarity of H_3PO_4 (from the first equivalence point, the second equivalence point, and the difference between the first and second equivalence points). [12]
   Show the calculations for determining the K_{a1} and K_{a2} values. [8]
   Determine the % error for both K_a values. [4]

   Part III - Example calculations to determine the molarity of HCl and H_3PO_4. [8]

4. **Results and Discussion**

   Part I - Explain possible errors during the titration of KHP with NaOH (how accurate is your molarity concentration). [5]

   Part II - Explain the % error of both K_a values and the accuracy of H_3PO_4 molarity. This can be represented using an uncertainty such as 0.08605 ± 0.0002 M. [5]
   Discuss how the uncertainty was obtained. [5]
   Discuss the difference between the experimental K_a values and the literature values. [5]

   Part III - **There are no K_a values for part III.**
   Discuss the accuracy of H_3PO_4 and HCl results. [5]

5. **Conclusion**

   Summerize your results**.** [10]

6. **References** [5 pts]

7. **Blue sheet** - neatly written [5 pts]

Be sure to not use pronouns (-1 for every two pronouns) and that all the data and calculations have the correct units and the appropriate significant figures.