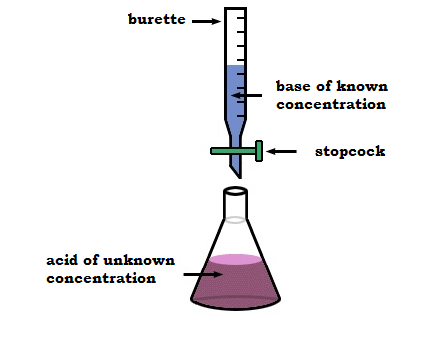
**Acid-base titration**

Titration **is a process of chemical analysis in which the quantities of constituents of a sample are determined. This is carried out by gradually adding a standard solution, of which the concentration is known, until the equivalence point is reached. The two reactants in the two solutions combine to form a new compound.**

**1.Experiment**

**The following titration aims to determine the concentration of vinegar from houseware.**

|  |  |
| --- | --- |
| **Trials** | **Amount of NaOH c=0.1 mol/l used in each step of titration** |
| **Trial 1** | **16.6 ml** |
| **Trial 2** | **16.9 ml** |
| **Trial 3** | **17.8 ml** |

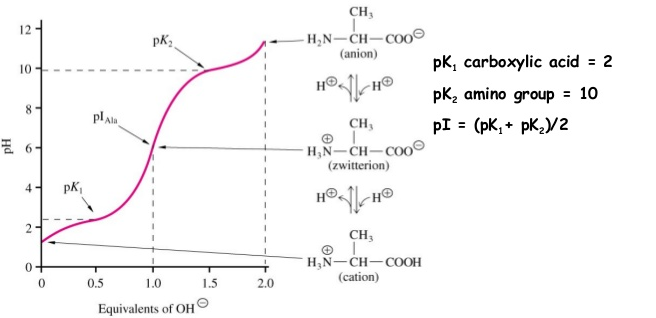


**Determined molar concentration of vinegar: c=0.88 0.2 mol/l**

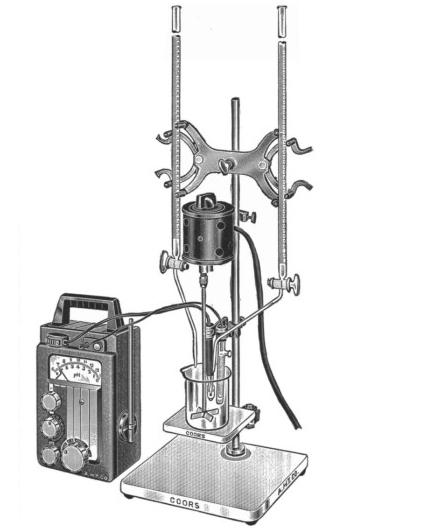
**Figure 1. The titration of an acid**

**OR**

**2. Experiment**

****

**Figure 2. Titration curve of alanine. The isoelectric point (pI-value) is the pH-value at which the number of positive and negative charges on a molecule is equal. pK1 is the value of carboxylic group and pK2 is the value of the amino group.**



**Figure 3. Old- fashioned instrumentation of an electrometric titration using a pH- meter.**

**Task: Choose one experiment and write a lab report about it. Use the vocabulary you have learnt before:**

**1. Introduction:** Explain the chemical principle of this method and what the equivalence points mean. Also, refer to the instrumentation and its advantages.

**2. Question and hypothesis:** State the scientific question that is answered in the experiment shown in the relating figures. Come up with a possible hypothesis ( you might form a conditional sentence).

**3. Materials:** List the materials and chemicals used in the experiment.

**4. Procedure:** Describe the practical steps**.**

**5. Result/Conclusion:** Evaluate the results and state if the experiment succeeded in answering the question.

**6. Discussion:**  Consider possible errors that might have occurred..

**Content :** \_\_\_\_\_\_\_\_\_ /40 P. **Language:** \_\_\_\_\_\_\_\_\_\_\_\_ /60 P.

**Total points: \_\_\_\_\_\_\_\_\_\_\_\_\_**

**GRADE: \_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Note | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| Punkte | 100-95 | 95-90 | 90-85 | 85-80 | 80-75 | 75-70 | 70-65 | 65-60 | 60-55 | 55-50 | 50-45 | 45-36 | 36-27 | 27-18 | 18-9 | 9-0 |