TDC Part III

Practical (Lab Work)

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TOPIC:- BASIC TECHNIQUES AND PROCEDURES

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Titration

A titration is a technique where a solution of known concentration is used to determine the concentration of an unknown solution. Typically, the titrant (the know solution) is added from a burette to a known quantity of the analyte (the unknown solution) until the reaction is complete, which is often indicated by a colour change. There are four major classes of titration;

- Acid base titration (HCl v/s NaOH)
- Redox titration (FAS v/s $KMnO_4$)
- Precipitation titration (NaCl v/s $AgNO_3$)
- Complexometric titration (EDTA v/s water sample)

Filtration

Filtration is a very basic and routinely applied method in laboratories. This method is used to sieve the solutions having solid particles such as precipitates and for solutions

those are heat sensitive cannot be separated through distillation process. For the simple precipitate filtration process, we commonly use Whatman filter papers (usually come in different grades). However for sophisticated instrument such as HPLC we commonly use 0.2µm filter paper.

Calibration of glasswares

Calibration of volumetric flask

For the calibration of volumetric flask, at first the weight of cleaned and dried flask is accurately determined by using the robust balance. Now air free distilled water is filled in the flask up to the fixed mark on the neck and determine the weight of water containing flask. Finally with the help of these two weights volume of volumetric flask is obtained.

Calibration of pipettes

Calibration of pipette is carried out by weighing the delivered water from the fixed mark. For this purpose, at first

the pipette is washed and dried then after this air free distilled water is sucked up to the mark into the pipette. Now determine the weight of water delivered in the previously weighted flask. From the weight of water calculate the true volume of pipette.