Pharmaceutical Calculations

Lab 1: Laboratory demonstrations.

Instruments and equipments:

It is quite important for the students and the lab workers in general to be familiar with the instruments and equipments those are utilized in different purposes in the lab. The following pictured examples could represent such tools:

1. Glassware and related tools:

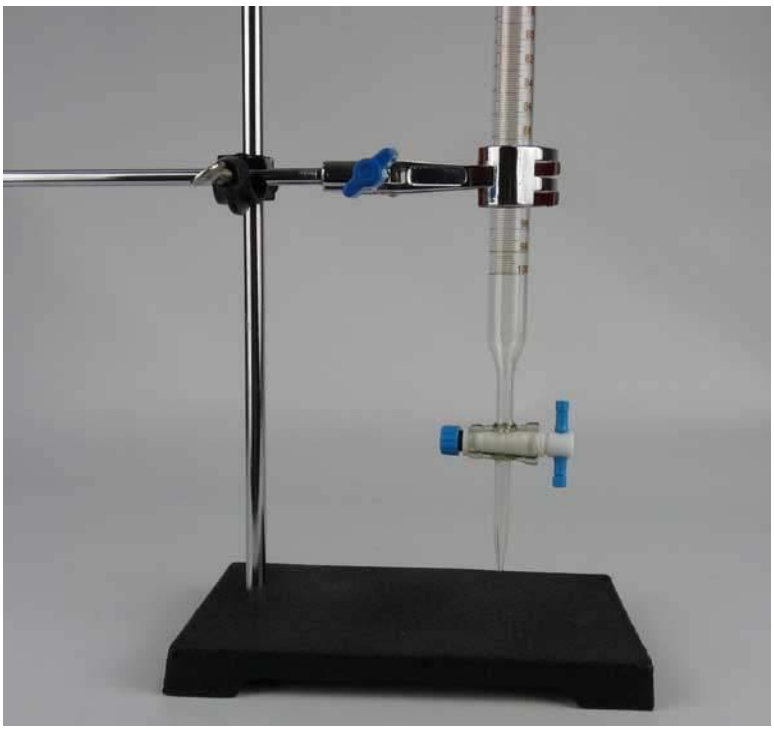
   A. Graduates: These are calibrated in metric measures and are subdivided into the following types:

      1) Cylindrical.

2) Conical.

3) Beakers.

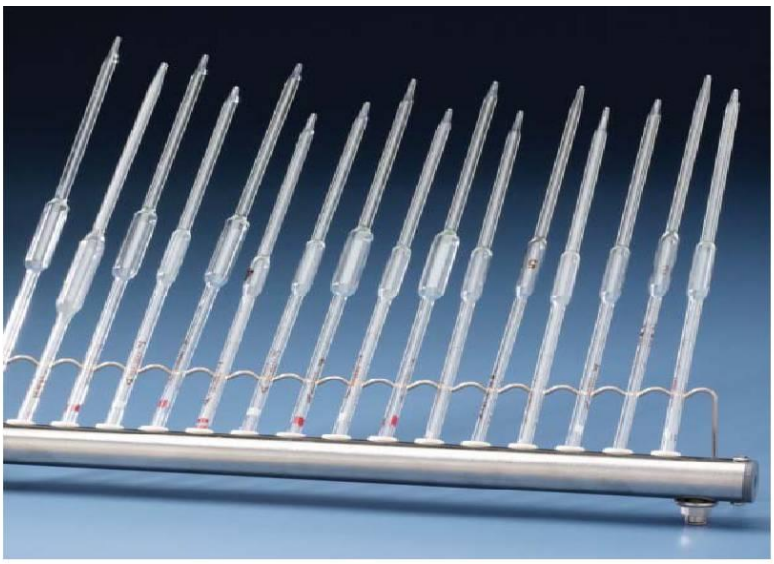
4) Burets (burettes): these are mainly utilized in titrations.



5) Pipets (pipettes): These can be filled by either rubber suction device (recommended) or by suction (not recommended; could be performed for distilled water and inert liquids, but of course not for dangerous liquids e.g. strong acids).

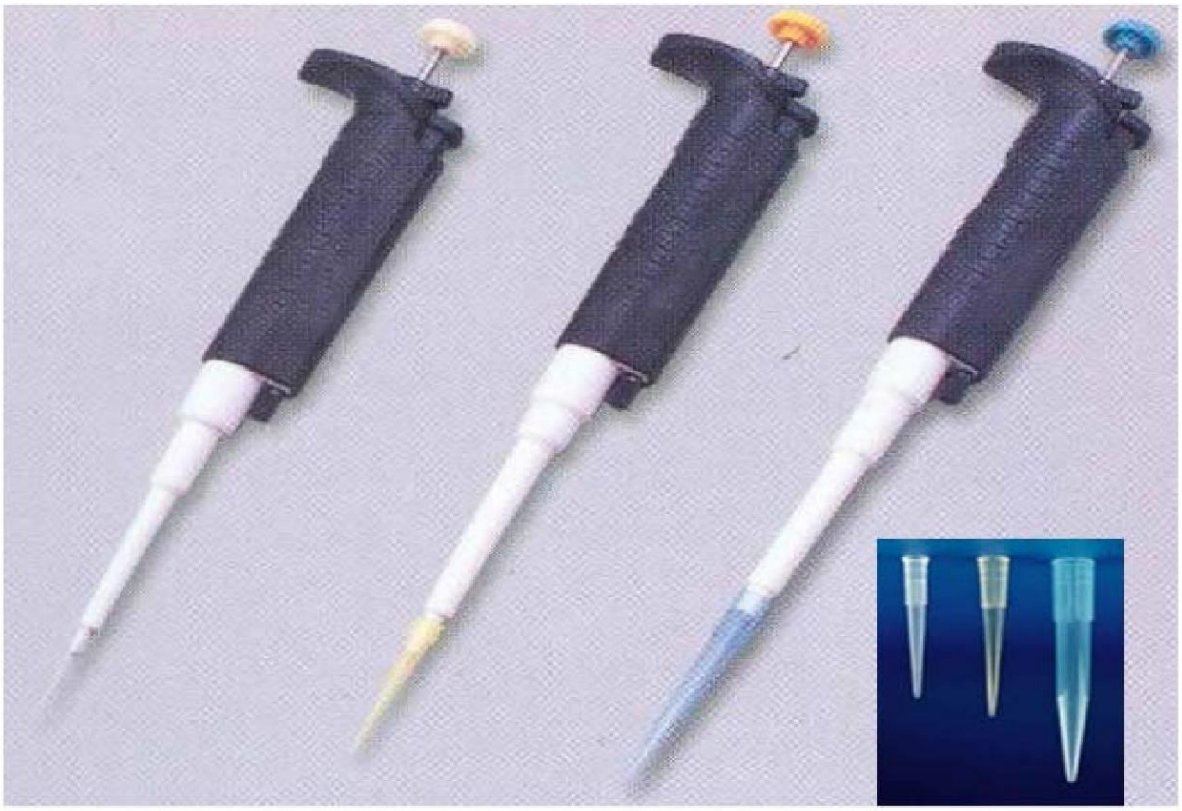
Two types of pipets are available:

i. Bulb pipets: narrow glass tube containing enlarged bulb in the middle with single accurate graduation.



ii. Calibrated pipets: tubes of uniform diameter calibrated in mls.

6) Micropipettes: This kind of pipets is very accurate and is used for very small volumes of liquids. Micropipettes are labeled with colors to indicate the volume range they can measure, so that white, yellow, and blue colors are assigned for 1-10 µL, 10-100 µL, and 100-1000 µL micropipettes respectively. Micropipettes also supplied with disposable tips commonly with the same color of the related micropipettes.



B. Volumetric flasks: these are calibrated to certain and specified volume.

C. Funnels, glass rods (stirrers), and bottles:

2. Domestic measures:

a. Teaspoonful (tsp.) = 5 mls
b. Tablespoonful (tbsp.) = 15 mls
c. Glassful = 240 mls

3. Balances:

4. Miscellaneous: washing bottle, mortar and pestle, spatula.

Thank you for your attention