Analytical Chemistry

Chapter 3

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Activity 5

1. Describe the principle and operation of the analytical balance.

2. What does the TD on glassware mean? TC?

3. Explain weighing by difference.

4. Name 3 types of personal protection equipment used in the laboratory.

5. Why laboratory note books or logbooks are important in the laboratory?

Activity 5

6. What are the possible causes of error in weighing?

7. What is the purpose of doing glassware calibration?

8. Briefly explain the calibration of burettes, volumetric pipettes and volumetric flasks.

Activity 5

9. A convenient way to calibrate pipettes is to weigh water delivered from them. From the exact density of water at the given temperature, the volume delivered can then be calculated. Suppose a 20 mL pipette is to be calibrated. A stoppered flask when empty weighs 29.278 g. Water is delivered into it from the pipette and it now weighs 49.272 g. If brass weights are used, what is the weight of water delivered, corrected to weight in vacuum?

Activity 5

10. You calibrate a 25 mL volumetric flask by filling to the mark with distilled water, equilibrated at 22°C. The dry stoppered flask weighs 27.278 g and the filled flask and stopper is 52.127 g. The balance uses stainless steel weights. What is the volume of the flask? What is the volume of the flask at the standard 20°C?

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