

BUKEDEA COMPREHENSIVE NORTHERN CAMPUS

CHEMISTRY DAILY REVISION ITEMS

Day One: Monday 4th May, 2026

INSTRUCTIONS TO CANDIDATES

- Attempt all items.
- Any work given must be attempted the same day.
- Responses should be inboxed to the teacher who has given the activity, and the correct responses shall be shared with those who have attempted.

Item 1 : Mole Concept

At a District Chemistry Practical Seminar, a Laboratory Assistant was tasked with preparing a standard solution of Sodium Carbonate to be used by several schools. He accurately weighed **5.30 g of anhydrous Na₂CO₃**, dissolved it in distilled water, and made the solution up to **250.0 cm³** in a volumetric flask. During a demonstration, a student pipetted **25.0 cm³** of this solution into a conical flask and added a few drops of methyl orange indicator. The solution was then titrated with hydrochloric acid from a burette labelled **0.100 mol dm⁻³ HCl**.

The student obtained concordant titres, with an average volume of **24.80 cm³** required for neutralization. Another teacher questioned whether the acid was accurately prepared and asked the class to analyse the results to verify its concentration. The reliability of the labelled value was to be assessed by comparing it with the experimentally determined concentration.

Tasks:

- Calculate the **actual concentration of the hydrochloric acid** used.
- Compare your calculated value with the labelled value (**0.100 mol dm⁻³**). Hence, determine whether the acid was **accurately prepared**. (*A difference within about ±5% may be considered acceptable—show your working.*)
- Suggest **one reason** for any difference between the two values.

END

.....Alluta Continua.....