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233/3  
**CHEMISTRY**  
**PRACTICAL**  
**FORM THREE**  
**END OF TERM 1 EXAMS -2023**  
**TIME: 2 HOURS**

You are provided with the following:

- 3.3g metal carbonate,  $\text{MCO}_3$ , labeled solution Q
- 2M hydrochloric acid, labeled solution P
- Sodium hydroxide, labeled solution R containing 40g/L of solution

You are required to determine the relative atomic mass of metal M

**Procedure**

- Measure accurately  $100\text{cm}^3$  of solution P into clean  $250\text{cm}^3$  conical flask and add all the 3.3g of solid Q,  $\text{MCO}_3$
- Shake the mixture well and wait for effervescence to stop. Label the resulting solution as S
- Pipette  $25\text{cm}^3$  of solution R into a conical flask and add 2-3 drops of phenolphthalein indicator.
- Fill the burette with solution S and titrate against the solution R until the end point.
- Record your results in the table below. Repeat the procedure at least two times to complete the table.  
(4 mks)

	i	ii	iii
Final burette reading ( $\text{cm}^3$ )			
Initial burette reading ( $\text{cm}^3$ )			
Volume of solution S used ( $\text{cm}^3$ )			

- What is the average volume of solution S used? (1mk)
- Calculate the moles of sodium hydroxide, solution R used. (2mks)
- Calculate the moles of hydrochloric acid in the average volume of solution S used. (2mks)

# Form 3 National Exams Past Papers Chemistry

**J Rink**



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