

KIYALA HIGH SCHOOL

MID-TERM ASSESSMENT TEST 2025

CHEMISTRY

PRACTICAL

S.4

Time: 2 Hours

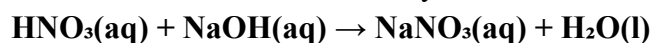
INSTRUCTIONS:

- This paper consists of ***one*** compulsory item.
- Responses to this item are to be written in the ***spaces*** provided in this booklet.
- Any work done in pencil ***except*** drawings and graph will ***not*** be scored.
- All working ***must*** be shown ***clearly***, unwanted work ***should*** be crossed.
- Candidates are advised to ***read*** the item ***carefully***, make sure they have ***all*** the necessary ***Apparatus*** and ***chemicals*** they may need and then ***plan*** accordingly before ***starting***.

Item

At the wastewater treatment plant nitric acid discharged in the wastewater is neutralized using sodium hydroxide solution. However, the effective amount of sodium hydroxide used should produce not more than **2.0kJ** of heat during the neutralization process. The management has procured a new consignment **X** of sodium hydroxide for use but its suitability has not been tested.

Nitric acid reacts with sodium hydroxide solution according to the equation;



You are provided with;

BA1 which is a solution of nitric acid (equivalent to concentration in wastewater).

BA2 which is a solution of sodium hydroxide (from recently procured batch).

Any other apparatus that can be found in a chemistry laboratory.

Task;

- a) Design an experiment you can carry out to determine the suitability of consignment X for the purpose. (***You design should include; aim, hypothesis, variables, materials, risks and mitigations, procedure***)

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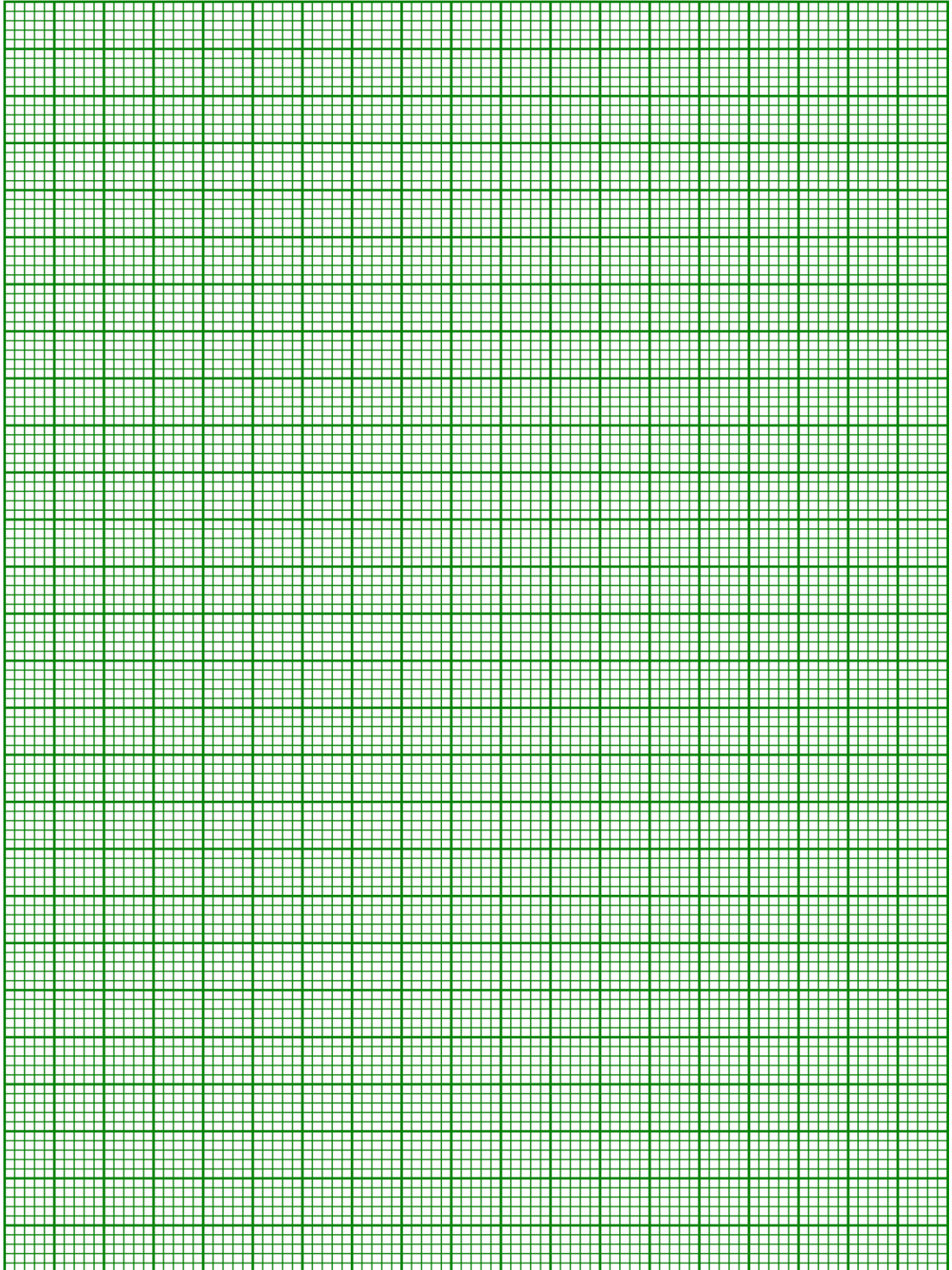
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c) Analyze your results and advise the management accordingly

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