Candidates' Name:.....

Signature:.....

545/2
Chemistry
Paper 2
July 2024
2 hours

ACEITEKA JOINT MOCK EXAMINATIONS 2024

Uganda Certificate of Education

CHEMISTRY

Practical

Paper Two

Time: 2 Hours

INSTRUCTIONS TO CANDIDATES:

- *This paper consists of **one** compulsory examination item. Answers to this item are to be written in the spaces provided in this booklet. Use **blue** or **black ink.***
- *All working must be clearly shown. Graph paper will be provided.*
- *Mathematical table and silent non-programmable scientific calculators may be used.*
- *You are not allowed to use reference books (i.e. text books, booklets on qualitative analysis etc.)*
- *Candidates are advised to carefully read the item, make sure they have all the apparatus and chemicals they may need and then plan appropriately before starting.*

Item 1.

A syrup manufacturing company is exploring an alkali to act as an ant-acid in ant-acid syrup. The alkali in the syrup and excess acid in the alimentary canal shouldn't cause significant heat changes during neutralisation, above 5000J. The company wants to determine the energy change for a reaction between the alkalis (XOH) and dilute hydrochloric acid to be able to make a decision on whether to use it as a component of the syrup.

Alkalis react with hydrochloric acid according to the following equation.

$$XOH_{(aq)} + HCl_{(aq)} \rightarrow XCl_{(aq)} + H_2O_{(l)} + Heat$$

The heat produced varies with the volume of acid added to the base.

You are provided with:

- BA1 which is a sample solution of the alkali
- BA2 which is dilute hydrochloric acid

TASK:

(a) As a learner of chemistry;

(i) Design an experiment you will carry out to determine the amount of heat produced when the syrup is administered.

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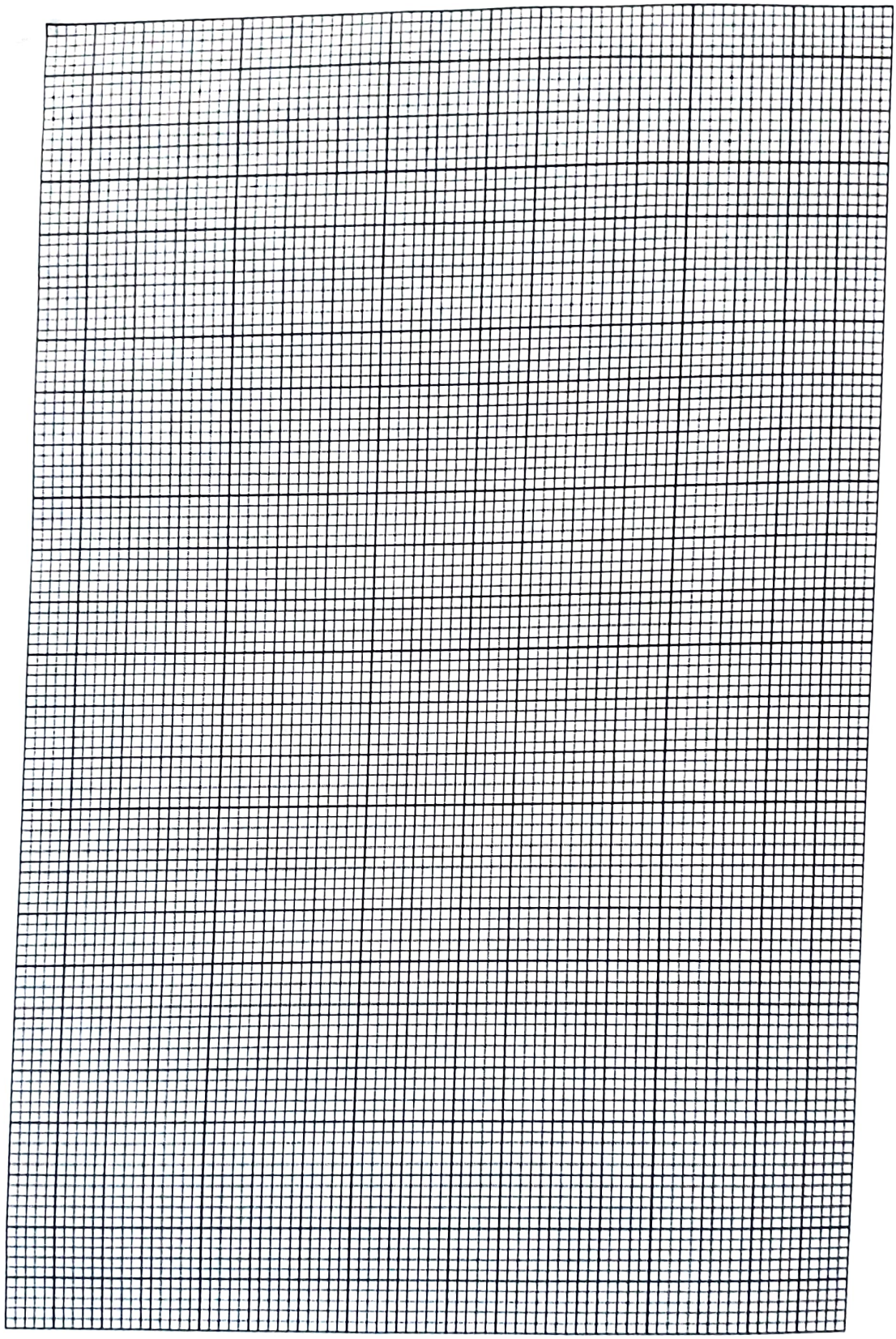
(ii) Carry out the experiment and record your results appropriately



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(b) Obtain the maximum heat produced during the reaction and deduce from your findings what the company should do.

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END

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