Candidate's Name:.....

Signature:.....

Random No.						Personal No.		

(Do not write your Centre Name or Number anywhere on this Booklet.)

545/2

CHEMISTRY

Paper2

July 2024

2Hours

ERETA EDUCATION CONSULTS LTD

JOINT MOCK EXAMINATIONS 2024

Uganda Certificate of Education

CHEMISTRY

Paper 2 (Practical)

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. textbooks, 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.*

Turn Over

Item1.

In the chemical processing industry, a group of factory workers manufacture sodium sulphate that is used as filler in soaps and detergents to increase the quality of the soap by increasing their bulk density, making them more convenient for packaging, transportation and use.
The manufacture of sodium sulphate involves the addition of dilute sulphuric acid to a solution of sodium hydroxide. However, during the production process, one of the factory workers noticed that the reaction vessel becomes continuously warmer with increase in the volume of the acid added.
Dilute sulphuric acid reacts with sodium hydroxide according to the following equation

$$H_2SO_4(aq) + 2NaOH(aq) \rightarrow Na_2SO_4(aq) + 2H_2O(aq) + Heat\ Energy$$

You are provided with

***BA1** which is a solution of sodium hydroxide*

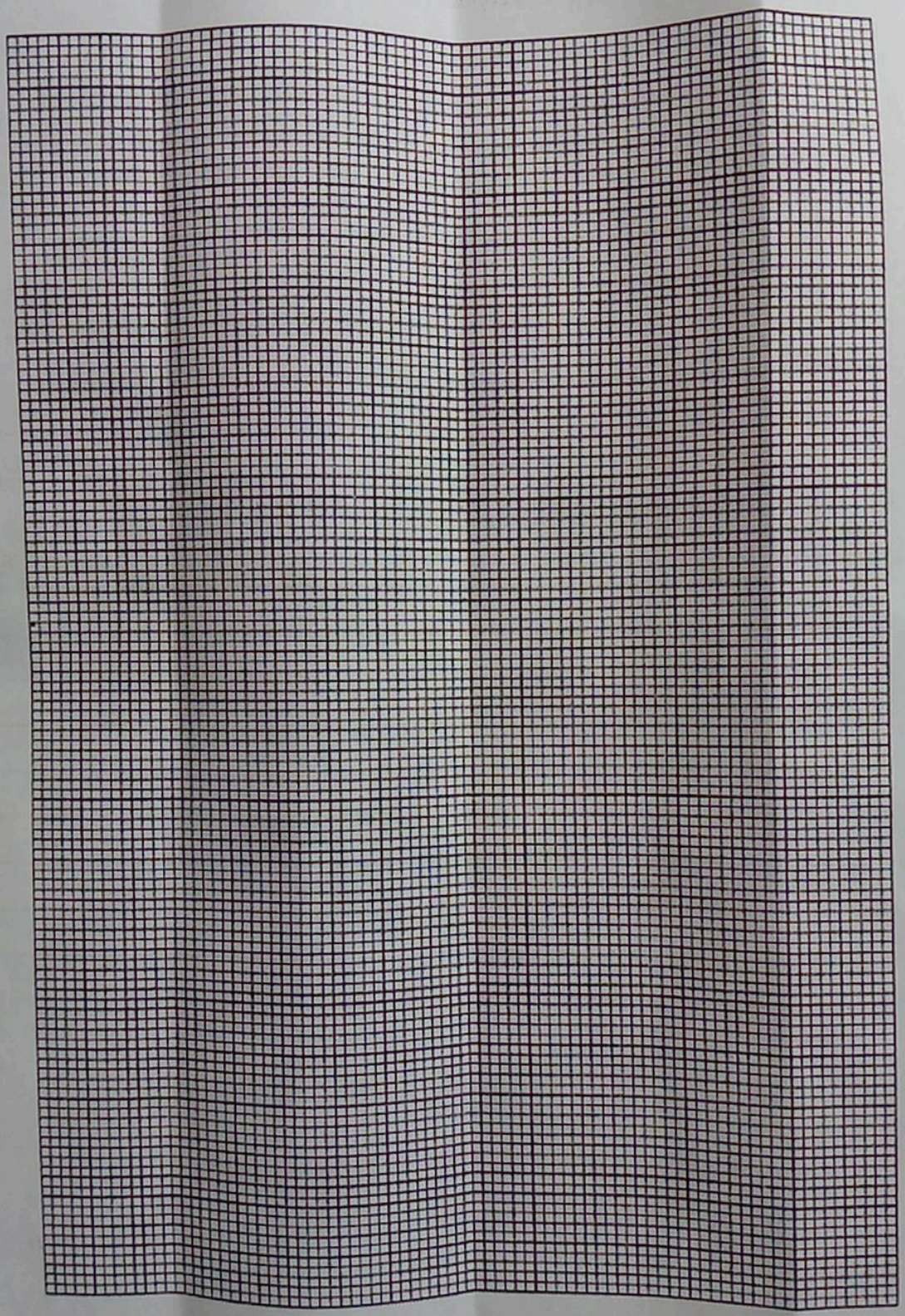
***BA2** which is dilute sulphuric acid?*

Task:

(a) As a learner of chemistry;

(i) design and carryout an experiment you will conduct to determine the amount of heat produced during reaction between **BA1** and **BA2**

(ii) record the data of your finding



(iii) Calculate the maximum heat produced during the reaction. (*Assume: Density of all solutions=1gcm^{-3}; specific heat capacity of solutions = 4.2Jg^{-1}°C^{-1}*)

(b) What deduction can the factory workers make from your findings?

END