Students Name: .....

School Name:..... Index Number .....

545/2
CHEMISTRY
PAPER 2
JULY/AUGUST
2 HOURS

HES MOCK EXAMINATIONS 2025

CHEMISTRY

PRACTICAL

PAPER TWO

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 one

In Buikwe district, waste water from a manufacturing industry is discharged into River Nile. The waste water contains traces of hydrochloric acid which has threatened the lives of fresh water fish in the river.

To solve the problem, the industry is exploring the use of an alkali solution to neutralise the acid in waste water before it is discharged. However, the reaction produces heat which can pose a possible threat of explosion within the industry. The waste water treatment vessel can only withstand heat ranging from 0 - 2.52K Joules.

The alkali reacts with hydrochloric acid according to the following equation.

$X(OH)_n(aq) + nHCl(aq) \longrightarrow XCl_n(aq) + nH_2O(l) + Heat$

And the heat produced varies with volume of alkali added.

You are provided with:

BA 1 which is a sample solution of the alkali

BA 2 which is dilute hydrochloric acid TA

SK :

As a learner of chemistry;

(a) Design an experiment that can be used to determine the heat produced

(b) Carry out the experiment and record your results appropriately.

(c) Analyse your results and obtain the maximum heat produced for the volume of BA 1 used.

(d) Advise the industrial technicians accordingly.

END