

NORTHERN EDUCATION DIVISION

2020 MSCE MOCK EXAMINATIONS

CHEMISTRY

PAPER II

(40 Marks)

THURSDAY, 19th March 2019

Subject number: M038/II
Time Allowed: 2 hours/session
08:00hrs onwards

INSTRUCTIONS:

- Write your official name and class on top of every page.
- This paper consists of two sections, **A** and **B** on **six** pages.
- Section **A** consists of two descriptive questions on practical work to be answered in **1 hour**.
- Marks for section **A** will be given for accurate and orderly presentation of facts supported by relevant diagrams.
- In Section **B** there are two practical questions to be answered in **1 hour**.
- You should spend **30 minutes** on each question. The 30 minutes period includes time to arrange the apparatus and have it checked by the supervisor.
- Marks for section **B** will be given for accurate observations and interpretation of the results.
- In the table provided on this page, tick against the question number you have answered.

Question Number	Tick if Answered	Do not write in these columns
1		
2		
3		
4		

Section A (20 Marks)

- 1. With aid of clear labelled diagram(s) and relevant chemical equation(s), describe any indigenous way of preparing alcohols.**

[illegible]

STUDENT NAME: _____ **FORM 4** _____

2. Describe **any 5** social and economic importance of recycling wastes.

[illegible]

Section B (20 Marks)

3. You are provided with **three** different aqueous solutions in beakers labelled **A**, **B** and **C**; **0.5M** sodium hydroxide (NaOH) solution; a measuring cylinder; **three** test tube in a test tube rack; test pipette (dropper) and distilled water in wash bottle.
- Place **5ml** of aqueous solution labelled **A** into one of the test tube.
 - Using the test pipette (dropper), add **three** drops of NaOH solution into the test tube that contains aqueous solution **A**.
 - Observe what happens in the test tube.
 - Record your observations in table of results as “**precipitates**” or “**no precipitates**”. Record colour of precipitates formed, where possible.
 - Rinse the test tube as well as measuring cylinder with distilled water.
 - Repeat steps **a.** up to **e.** using aqueous solutions labelled **B** and **C** using the remaining test tubes, with each solution at a time.

Table of Results:

MIXTURE:	A + NaOH	B + NaOH	C + NaOH
OBSERVATIONS:			

3marks

- g. Give names to cations in the following aqueous solutions:

A. _____

1mark

B. _____

1mark

C. _____

1mark

- h. Write balanced chemical equations for the reaction of sodium hydroxide with:

- i. Cations in solution A.

2marks

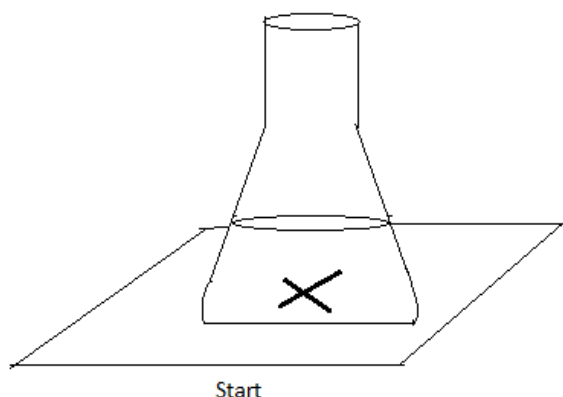
- ii. Cations in solution C.

2marks

STUDENT NAME: _____ FORM 4

4. You are provided with **0.2M** hydrochloric acid, **0.8M** sodium thiosulphate ($\text{Na}_2\text{S}_2\text{O}_3$) solution, conical flask, **two** measuring cylinders, a stop watch and a white paper with a **cross** mark.

- a. Place **10ml** of **0.8M** sodium thiosulphate into the conical flask.
- b. Place the conical flask onto a **cross** marked white paper as shown below:



- c. Using the other measuring cylinder, add **10ml** of hydrochloric acid into conical flask containing sodium thiosulphate solution and switch on the stop watch.
- d. Using stop watch, record time taken for the cross on the white paper to disappear.
- e. Rinse conical flask and measuring cylinders with distilled water at least 3 times.
- f. Using measuring cylinder, measure **7.5ml** of **0.8M** sodium thiosulphate solution.
- g. Add water onto the sodium thiosulphate solution in the measuring cylinder to make a total volume of **10ml**. This makes **0.6M** sodium thiosulphate solution.
- h. Place **10ml** of **0.6M** sodium thiosulphate into the rinsed conical flask.
- i. Repeat steps **b.to e.** using **0.6M** sodium thiosulphate solution.
- j. Using measuring cylinder, measure **5ml** of **0.8M** sodium thiosulphate solution.
- k. Add water onto the sodium thiosulphate solution in the measuring cylinder to make a total volume of **10ml**. This makes **0.4M** sodium thiosulphate solution.
- l. Place **10ml** of **0.4M** sodium thiosulphate into the rinsed conical flask.
- m. Repeat steps **b.to e.** using **0.4M** sodium thiosulphate solution.
- n. Using measuring cylinder, measure **2.5ml** of **0.8M** sodium thiosulphate solution.
- o. Add water onto the sodium thiosulphate solution in the measuring cylinder to make a total volume of **10ml**. This makes **0.2M** sodium thiosulphate solution.
- p. Place **10ml** of **0.2M** sodium thiosulphate into the rinsed conical flask.
- q. Repeat steps **b.to e.** using **0.2M** sodium thiosulphate solution.

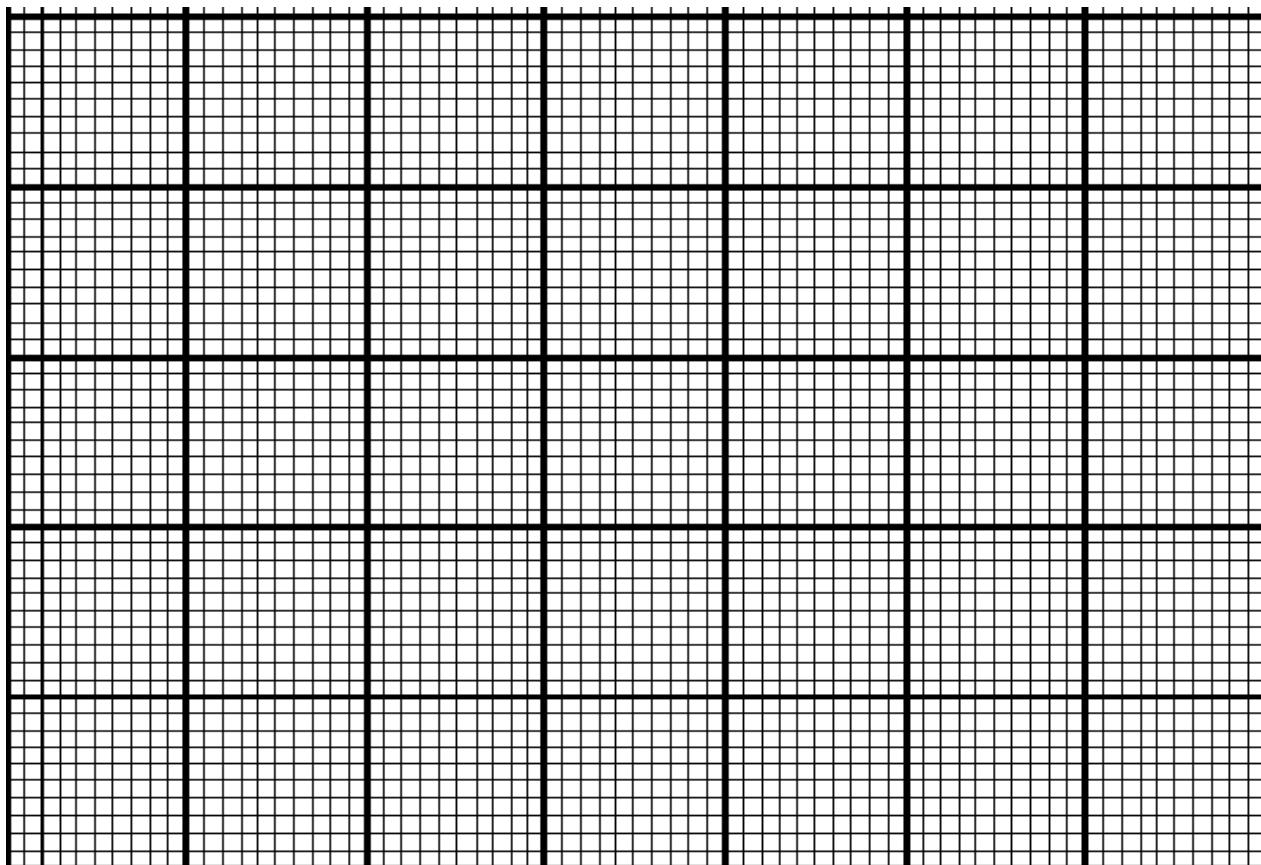
Table of Results:

SODIUM THIOSULPHATE:	0.8M	0.6M	0.4M	0.2M
TIME TAKEN:				

4marks

STUDENT NAME: _____ FORM 4 _____

- i. Plot a graph of concentration of sodium thiosulphate against time on a graph sheet below:



5marks

- j. What conclusion can be drawn from the plotted graph?

1mark

END OF QUESTION PAPER

NB: This Paper Contains 6 Printed Pages