

# NORTHERN EDUCATION DIVISION

## 2020 MSCE MOCK EXAMINATIONS

### CHEMISTRY

#### PAPER II

#### (40 Marks)

**THURSDAY, 19<sup>th</sup> March 2019**

**Subject number: M038/II**

**Time Allowed: 2 hours/session  
08:00hrs onwards**

#### **INSTRUCTIONS:**

- a) Write your official name and class on top of every page.
- b) This paper consists of two sections, **A** and **B** on six pages.
- c) Section **A** consists of two descriptive questions on practical work to be answered in **1 hour**.
- d) Marks for section **A** will be given for accurate and orderly presentation of facts supported by relevant diagrams.
- e) In Section **B** there are two practical questions to be answered in **1 hour**.
- f) 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.
- g) Marks for section **B** will be given for accurate observations and interpretation of the results.
- h) 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		

**STUDENT NAME:** \_\_\_\_\_ **FORM 4** \_\_\_\_\_

FORM 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.

**10marks**

**STUDENT NAME:** \_\_\_\_\_ **FORM 4** \_\_\_\_\_

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

10marks

**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; teat pipette (dropper) and distilled water in wash bottle.
- Place **5ml** of aqueous solution labelled **A** into one of the test tube.
  - Using the teat 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**

**1mark**

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

- i. Cations in solution **A**.

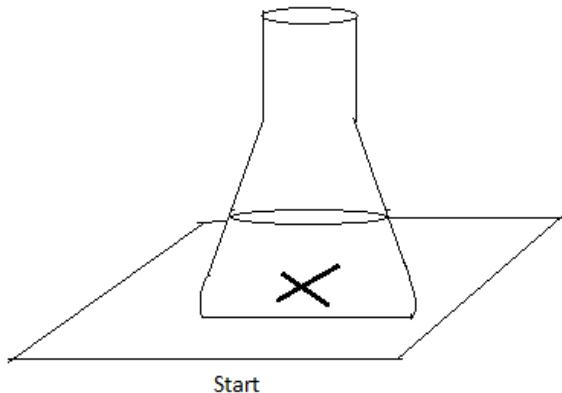
**2marks**

- ii. Cations in solution **C**.

**2marks**

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.

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



- Using the other measuring cylinder, add **10ml** of hydrochloric acid into conical flask containing sodium thiosulphate solution and switch on the stop watch.
- Using stop watch, record time taken for the cross on the white paper to disappear.
- Rinse conical flask and measuring cylinders with distilled water at least 3 times.
- Using measuring cylinder, measure **7.5ml** of **0.8M** sodium thiosulphate solution.
- 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.
- Place **10ml** of **0.6M** sodium thiosulphate into the rinsed conical flask.
- Repeat steps b.to e. using **0.6M** sodium thiosulphate solution.
- Using measuring cylinder, measure **5ml** of **0.8M** sodium thiosulphate solution.
- 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.
- Place **10ml** of **0.4M** sodium thiosulphate into the rinsed conical flask.
- Repeat steps b.to e. using **0.4M** sodium thiosulphate solution.
- Using measuring cylinder, measure **2.5ml** of **0.8M** sodium thiosulphate solution.
- 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.
- Place **10ml** of **0.2M** sodium thiosulphate into the rinsed conical flask.
- Repeat steps b.to e. using **0.2M** sodium thiosulphate solution.

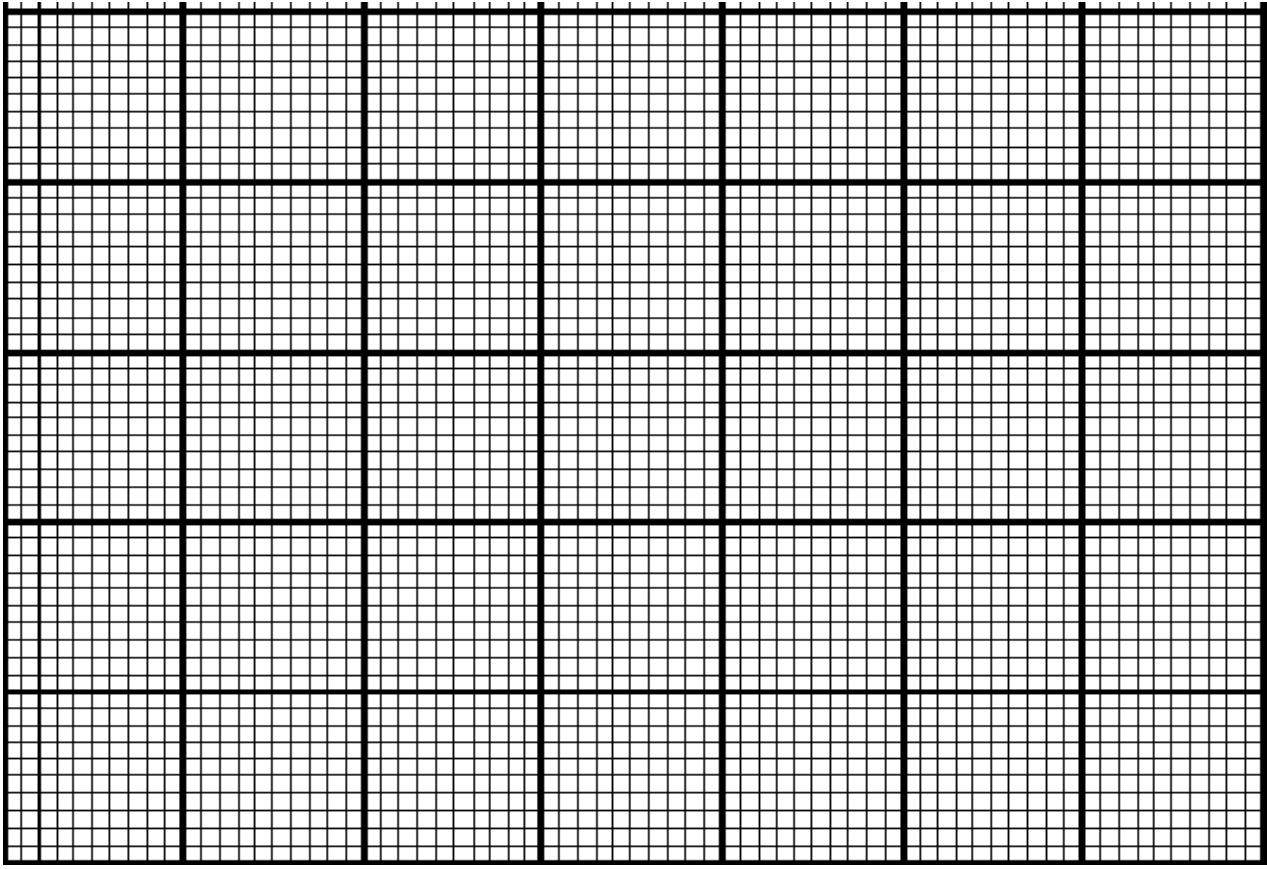
#### Table of Results:

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**