

**CANDIDATE NUMBER:** \_\_\_\_\_



## **CENTRAL EAST EDUCATION DIVISION**

### **2023 MALAWI SCHOOL CERTIFICATE OF EDUCATION MOCK EXAMINATION**

## **CHEMISTRY**

**Thursday, 16<sup>th</sup> March**

**Subject Number: M036/II**

**Time allowed: 2 hour sessions**

**8:00 a.m. onwards**

### **PAPER II**

**(40 marks)**

#### **Instructions**

1. This paper contains 5 pages. Please check.
2. Before beginning, fill in your **Examination Number** at the top of each page of the question paper.
3. Write your answers on the question paper.
4. This paper consists of **two** sessions, **A** and **B**.
5. Section **A** consists of **two** descriptive questions on practical work to be answered in **1 hour**. Marks will be given for accurate and orderly presentation of facts supported relevant diagrams.
6. In section **B**, there **two** practical questions to be answered in **1 hour**.
7. Marks for section **B** will be given for observation, accuracy and interpretation of results.
8. You should spend 30 minutes on each question. The 30 minute period allowed for each question includes 3 minutes to tidy up the apparatus and have it checked by the supervision.
9. In the table provided on this page, tick against the question number you have answered.

<b>Question Number</b>	<b>Tick if answered</b>	<b>Do not write in these columns</b>	
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>			

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**SECTION A (20 Marks)**

1. With the aid of a well labeled diagram, describe an experiment that could be carried out to electroplate a spoon with silver, the description should include relevant half equations at the electrodes.

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(10 marks)

2. Construct **a flow diagram** to identify the following unknown organic compounds: Alkanes, Alkenes, Alkanols and alkanoic acids.

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**(10 marks)**

**SECTION B (20 Marks)**

3. You are provided with measuring cylinder, thermometer, sodium hydroxide pellets, beaker, distilled water and stirring rod.

- a. Add 20 ml of distilled water in a small beaker.
- b. Dip a thermometer in a beaker and record the temperature of the distilled water.
- c. Add **5** pellets of sodium hydroxide in the beaker containing distilled water and stir well.
- d. Measure and record the temperature of the solution in the table below:

**Table 2**

Temperature of distilled water (°C)	
Temperature of the solution (°C)	

**2 marks)**

e. Calculate temperature change

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\_\_\_\_\_ (2 marks)

f. What type of reaction is depicted above?

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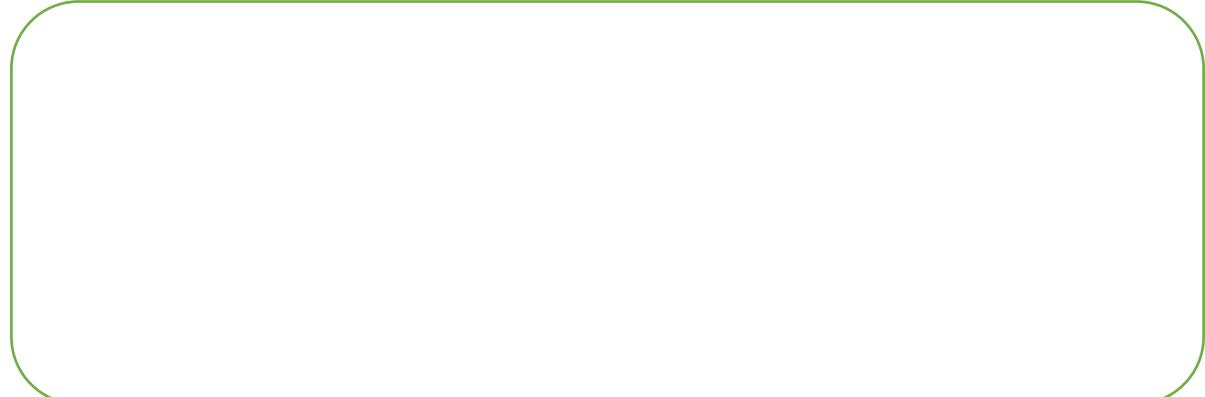
\_\_\_\_\_ (1 mark)

g. Give a reason for your answer.

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\_\_\_\_\_ (1 mark)

h. Draw the energy level diagram to illustrate the type of reaction above.



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**(4 marks)**

4. You are provided with solutions **X**, **Y**, and **Z** in beakers and universal indicator solution in a dropper bottle.

- To each of the three beakers add two drops of universal indicator.
- Note the colour change of the solutions and record in the table of results.
- Use the pH scale chart below to complete the table of results.

Colour	red	orange	Light orange	yellow	green	Green blue	Light blue	Dark blue	violet	purple
pH	1 - 2	3 - 4	5	6	7	8	9	10	11 - 12	13 – 14

**Table 1**

Substance being tested	Colour obtained on adding universal indicator	pH value
<b>X</b>		
<b>Y</b>		
<b>Z</b>		

**(6 marks)**

- Classify the tested acids and bases as weak or strong.

**X** \_\_\_\_\_

**Y** \_\_\_\_\_

**Z** \_\_\_\_\_ **(3 marks)**

- Mention any **one** variable that should be kept constant.

\_\_\_\_\_ **(1 mark)**

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**END OF QUESTION PAPER!**