EXAMINATION NO.: _____

SOUTH EAST EDUCATION DIVISION

2024 MALAWI SCHOOL CERTIFICATE OF EDUCATION MOCK EXAMINATION

CHEMISTRY

Subject Number: M038/II

Thursday, 14 March

Time Allowed: 2 hour sessions

10:00 am onwards

PAPER II

Practical

(40 marks)

Instructions:

1. **This paper contains 6 printed pages. Please check.**
2. Before beginning, fill in your full name at the top of the question paper.
3. Write your answers in the spaces provided on the question paper.
4. This paper has **two** sections, **A** and **B**.
5. Section **A** contains two descriptive questions on practical work to be answered in 1 hour. Marks will be given for accurate and orderly presentation of facts supported by relevant diagrams.
6. In Section **B**, there are two practical questions to be answered in 1 hour.
7. 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 supervisor.
8. Marks for section **B** will be given for observation, accuracy and interpretation of results.

Question number	Tick if answered	Do not write in this column	
1			
2			
3			
4			

SECTION A (20 Marks)

1. With the aid of a well labelled diagram, describe how you could determine that during the reaction between sodium metal and water, the gas produced is hydrogen.

(10 marks)

continued/..

2. Describe an experiment which could be carried out to arrange metals namely **X**, **Y** and **Z** in order of their reactivity.

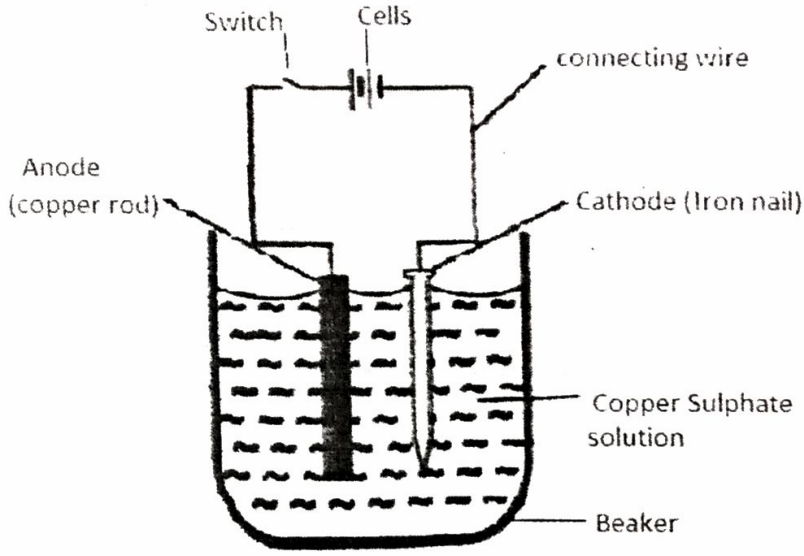
(10 marks)

continued/..

SECTION B (20 Marks)

3. You are provided with 2 cells, collecting wires, switch, copper metal, iron nail, copper sulphate solution and beaker.

a. Arrange the apparatus as shown in the diagram below,



b. Put 60cm^3 of copper sulphate solution into the beaker.

c. Close the switch.

d. Leave the set up to stand for 5 minutes.

e. Open the switch and remove the copper metal and the iron nail from the solutio

f. What has happened to the copper metal and the iron metal?

Copper metal:

_____

(1 mark)

Iron nail:

_____

(1 mark)

g. With the aid of an equation, describe the process which was taking place at the cathode.

_____

_____

_____

_____

(4 marks)

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h. Write the half equation for the reaction which was taking place at the anode.

_____

(1 mark)

i. Name the process demonstrated in this experiment.

_____

(1 mark)

j. State any **two** uses of the process taking place in the experiment.

_____

(1 mark)

4. You are provided with 3 test tubes in a rack, unknown organic substances labelled **A**, **B** and **C** which are ethanol, ethanoic acid and cyclohexane but not in that order. You are also provided with a measuring cylinder, droppers, dilute sodium hydroxide (NaOH), phenolphthalein indicator and distilled water in a wash bottle.

a. On each unknown compound, perform the tests shown in **Table 1** and record your observations in the appropriate spaces. Remember to wash the test tubes after each test.

Table 1

Test	Substance A	Substance B	Substance C
To $3cm^3$ of distilled water, add $2cm^3$ of unknown substance			
To 15 drops of dilute NaOH in a test tube add 3 drops of phenolphthalein indicator. Now add $3cm^3$ of unknown substance.			

(6 marks)

b. Identify the organic compounds labelled **A, B** and **C**.

A. _____ (1 mark)

B. _____ (1 mark)

C. _____ (1 mark)

c. What name is given to the test where substances **A, B** and **C** are mixed with distilled water?

_____

(1 mark)

END OF QUESTION PAPER

NB: This paper contains 6 pages.

SOUTH EAST EDUCATION DIVISION

2024 MALAWI SCHOOL CERTIFICATE OF EDUCATION MOCK EXAMINATION

CHEMISTRY

To be given to the subject teacher on Thursday, 14th March, 2024 by 7:00am.

CONFIDENTIAL INSTRUCTION

Subject Number: M038/II

Question 3

Each candidate must be provide with the following;

- 10 ml Copper sulphate solution.
- 3 connecting wires
- 2 cells (1.5V each)
- 1 Iron nail (3 inches)
- a piece of copper foil
- a switch
- 1 beaker (100ml) / improvised beaker
- distilled water
- 100ml measuring cylinder
- Cardboard / small piece of carton

Question 4

Each candidate must be provide with the following

- 3 test tubes in a rack
- 10ml measuring cylinder
- 20ml of 2M sodium hydroxide (NaOH) solution
- phenolphthalein indicator in a dropper bottle
- distilled water in a wash bottle
- 20ml of ethanol in a beaker labelled **A**
- 20ml of cyclohexane in a beaker labelled **B**
- 20ml of ethanoic acid in a beaker labelled **C**
- 1 dropper

Note: Do not reveal the contents of the confidential instruction to any unauthorized person(s).

END OF CONFIDENTIAL INSTRUCTION