

NAME: _____

MARANATHA ACADEMY
2023-2024 MALAWI SCHOOL CERTIFICATE OF EDUCATION MOCK
EXAMINATIONS

CHEMISTRY

Subject Number: M036/II
Time Allowed: 2 hour sessions
8:00 onwards

PAPER II
(40 marks)

Practical

Instructions

1. This paper contains 6 printed pages. Please check.
2. This paper contains **two** sections, **A** and **B**.
3. Answer **all** the **four** questions in the spaces provided.
The maximum number of marks for each answer is indicated against each question. A pencil should be used for all drawings.
4. Write your **Name** at the top of each page of your question paper in the spaces provided.
5. Do not spend more than **30 minutes** on a single question.

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

6. In the table provided on this page, **tick** against the question number you have answered



STUDENT NUMBER _____

SECTION A: (20 marks)

1. Describe how 2000ml of 0.1M Hydrochloric acid (HCl) can be prepared using a stock solution of 10M Hydrochloric acid (HCl.)

(10 marks)



STUDENT NUMBER _____

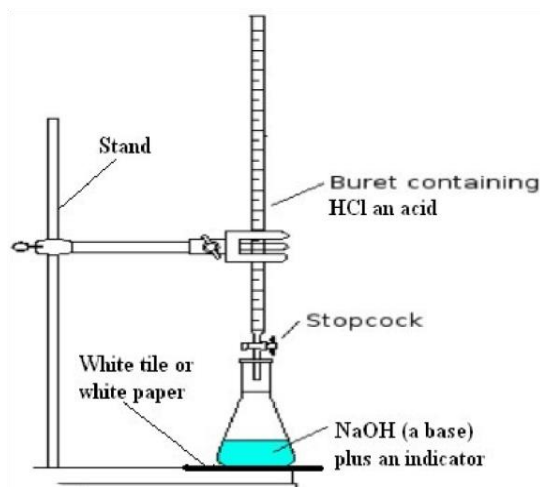
2. With the aid of a well labelled diagram and chemical equations, design an experiment that can be used to electroplate a Silver Spoon with Copper metal. Use relevant equations.

(10marks)



SECTION B (20 Marks)

3. You are provided with a burette or a syringe, a funnel, a measuring cylinder, a beaker or conical flask, a clamp stand, 0.1M Sodium hydroxide (NaOH), Hydrochloric acid (HCl) of unknown concentration, phenolphthalein indicator and a white tile or plane paper.
- a. Set up the apparatus as shown below in Figure 1



- a. Figure 1
- b. Fill the burette with hydrochloric acid (HCl) to the zero mark.
- c. Pour 10 ml of Sodium hydroxide (NaOH) into the beaker or conical flask.
- d. Add 3 drops of phenolphthalein indicator in the Sodium hydroxide.
- e. Gradually add hydrochloric acid from the burette to Sodium hydroxide, shaking the beaker all the time until pink colour disappears.
- f. Run the experiment twice or two runs by repeating steps (c) to (e)

- g. Fill in the table 1 below. (3 marks)

Number of runs	Initial volume of HCl (ml)	Final volume of HCl(ml)	Volume of HCl used(ml)
First			
Second			

- h. Calculate the volume of Hydrochloric acid used (Average titre) (2 marks)

- i. Write a balanced chemical equation for the reaction. (2 marks)

- j. Work out the concentration hydrochloric acid solution used. (2 marks)

- k. Mention one source of error in this experiment?

_____ (1 mark)

4. You are provided with 3 test tubes in a rack, distilled water, copper sulphate solution, magnesium sulphate solution, iron sulphate solution, copper foil, magnesium ribbon and iron nails

- Put 2 cm^3 of copper sulphate solution in each of the 3 test tubes
- Place a piece of copper foil, magnesium ribbon and iron nail in separate test tubes
- Observe and record the results by indicating **reaction** or **no reaction** in appropriate spaces in the table 2
- Rinse the test tubes with distilled water

STUDENT NUMBER _____

e. Repeat steps (a) to (d) using magnesium sulphate and iron sulphate solutions

Table 2

Solution \ Metal	Copper sulphate	Magnesium sulphate	Iron sulphate
Copper			
Magnesium			
Iron			

(6 marks)

f. Arrange the metals in order of decreasing reactivity

(3 marks)

g. Which metal is the most electropositive?

(1 mark)

END OF QUESTIONS