NAME: _____ CLASS: _____

MZUZU DIOCESE

2020 MALAWI SCHOOL CERTIFICATE OF EDUCATION MOCK EXAMINATION

CHEMISTRY

PAPER II
(40 marks)

Practical

Subject Number: M162/I

Thursday, 20th March

Time Allowed: 2hrs

Instructions:

1. **This paper contains 6 pages. Please check.**
2. Fill in your **Name** at the top of each page.
3. Answer **all** the **four** questions in the spaces provided.
4. The maximum number of marks for each answer is indicated against each question.
5. In the table provided on this page, **tick** against the question number you have answered.
6. Hand in your paper to the invigilator when time is called to stop writing.

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

Turn over

NAME: _____ CLASS: _____

Section A (20 marks)

1. With the aid of a well labelled diagram describe an experiment that could be conducted to test the purity of water.

(10 marks)

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2. Describe how you would prepare 0.4 M NaOH solution whose volume is 250 ml from the provided sodium hydroxide pellets.
   (RAM: Na = 23, O = 16, H = 1)

(10 marks)

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Section B (20 marks)

3. You are provided with test tubes in a rack, measuring cylinder, 2M Sodium hydroxide (NaOH) and solutions A, B and C which are copper (II) sulphate, iron(II) sulphate, and aluminium nitrate but not necessarily in that order.

   b) Place 5cm^3 of solution A into a test tube

   b) Add 3 drops of sodium hydroxide solution into the test tube containing Solution A.

   b) Observe and record the colour of the precipitate formed in the table of results.

   b) Add more sodium hydroxide solution to A until in excess.

   b) Record whether the precipitate is soluble or insoluble in the table 1 given below.

   b) Repeat steps **a** to **e** using solutions B and C.

Table 1

solution	3 drops of sodium hydroxide solution	Excess sodium hydroxide solution
A		
B		
C		

(6 marks)

   b) Identify the cations present in the solutions using the results in the table

   A. _____

   B. _____

   C. _____

(3 mark)

b) Write the equation for the reaction between copper sulphate and sodium hydroxide solution

_____

(1 mark)

4. You are provided with 3 beakers labelled X, Y and Z containing dilute hydrochloric acid, sodium hydroxide and acetic acid but not necessarily in that order.

   You are also provided with universal indicator solution in a dropper or universal litmus paper.

   a) To each of the three beakers add two drops of universal indicator or universal litmus paper

   b) Note the colour change of the solution or the universal litmus paper. Use the pH scale chart given to complete the table of results below:

RED	ORANGE	LIGHT ORANGE	YELLOW	GREEN	GREEN BLUE	LIGHT BLUE	DARK BLUE	VIOLET	PURPLE
1	3	5	6	7	8	9	10	12	14

(a) Record the colour of the solution and its pH in the table of results

Table 2

	X	Y	Z
Colour observed			
pH			

(6 marks)

(b) Using the table above identify X, Y and Z as strong base, strong acid or weak acid

X: _____

Y: _____

Z: _____

(3 marks)

(c) Give any one variable that needs to be kept constant when comparing strengths of acids or bases

_____

(1 mark)

END OF QUESTION PAPER

NB: This paper contains 6 pages.