

**NGULUDI CLUSTER EXAMINATIONS BOARD****2021 MALAWI SCHOOL CERTIFICATE MOCK EXAMINATION****CHEMISTRY****Thursday, 29 July****Time allowed: 2 hour sessions  
(10: 00am – onwards)****PAPER II  
(40 MARKS)  
PRACTICAL****Instructions**

- This paper contains 5 printed pages. Please check.**
- Before beginning fill your Name and Examination Number at the top of each page.**
- Write your answers in the spaces provided on the question paper**
- This paper contains two sections A and B.**
- Section A consist 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 by relevant diagrams**
- In Section B there are two practical questions to be done in 1 hour. Marks will be given for observation, accuracy and interpretation of results.**
- You should spend 30 minutes on each question.**
- In the table provided on this page, tick against the number of the question 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>			

NAME: \_\_\_\_\_ EXAMINATION NO.: \_\_\_\_\_

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1. With an aid of a well labeled diagram, describe the conditions necessary for rusting.

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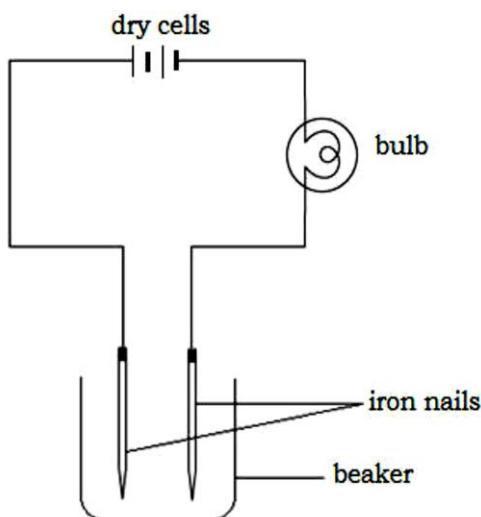
(10 marks)

2. Describe an experiment that can be done to determine the percentage of water in hydrous copper II sulphate ( $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ ). In your description include: materials, procedure, conclusion, relevant chemical equation(s) and mathematical expressions.

(10 marks)

3. You are provided with 2 cells, a bulb, a 100 ml beaker, 3 connecting wires fitted with crocodile clips, iron nails or graphite rods, distilled water and 40 ml of each of the solution labeled; W, X, Y and Z

- a. Set up the apparatus as shown below



- b. Pour 40 ml of W solution into the beaker  
 c. Dip the nails into the solution  
 d. Observe the bulb and record “light” or “no light” in the table 1.  
 e. Remove the nails from the beaker.  
 f. Rinse the beaker and the nails with distilled water.  
 g. Repeat steps b to f using X, Y and Z solutions.

Solution	Observation
W	
X	
Y	
Z	

**Table 1****(6 marks)**

- h. Classify the solutions as ionic or covalent.

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**(4 marks)**

4. You are provided with a set of test tubes and unknown organic substances labeled A, B, and C. You are also given the following reagents: Bromine solution, dilute sodium hydroxide, distilled water and phenolphthalein indicator. One each unknown compound perform the tests shown in the table 2 and record your observations in the appropriate spaces. Remember to wash the test tube after each test.

Test	Substance A	Substance B	Substance C
Add 2 drops of unknown substance in 15 drops of distilled water in a test tube			
Add 2 drops of unknown substance in 15 drops of bromine solution in a test tube.			
To 15 drops of dilute NaOH in a test tube, add 2 drops of phenolphthalein indicator. Now add 2 drops unknown substance.			

**Table 2****(7 marks)**

On the basis of observation made, state the family of organic compounds to which each of the substance belongs:

A \_\_\_\_\_

B \_\_\_\_\_

C \_\_\_\_\_

**(3 marks)****END OF QUESTION PAPER****NB: This paper contains 5 printed papers**