



Rewarding Learning

General Certificate of Secondary Education
2023

Centre Number

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Candidate Number

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Chemistry

Unit 3: Practical Skills

Booklet A

Higher Tier

[GCM33]



GCM33

TIME

2 hours.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.

Answer **all** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is **30**.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Follow all health and safety instructions.

You may use a ruler and calculator if required.

The apparatus and materials required to complete the task(s) are provided.

A Data Leaflet, which includes a Periodic Table of the Elements, is included in this question paper.

For Examiner's use only	
Question Number	Marks
1	
2	

Total Marks	
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1 You are provided with four solutions labelled **A**, **B**, **C** and **D**. Each solution contains a different ionic compound.

(a) (i) You will carry out the following displacement reactions for each solution using magnesium. Record your measurements and observations in the table below.

1. Using a disposable pipette, place approximately 5 cm³ of solution **A** in a test tube.
2. Place a thermometer in the test tube and record the initial temperature of the solution to the **nearest whole number**.
3. Add one 3 cm piece of magnesium ribbon to the solution and stir using the thermometer.
4. Monitor the temperature and record the highest temperature achieved to the **nearest whole number**.
5. Record any observations which occur during the reaction in the table.
6. Rinse the thermometer with deionised water.
7. Repeat steps 1 to 6 with solutions **B**, **C** and **D**.
8. Calculate the temperature change for each solution and record in the table below.

Solution	Initial temperature /°C	Highest temperature /°C	Temperature change /°C	Observations
A				
B				
C				
D				

[8]

Examiner Only

Marks Remark

(c) Using solutions **A**, **B**, **C**, **D** and sodium hydroxide solution, carry out the following procedure.

1. Place a piece of Universal Indicator paper on a white tile.
2. Dip a glass rod into solution **A** and touch on the Universal Indicator paper.
3. Record the colour of the Universal Indicator paper and the pH of the solution in the table below.
4. Repeat for solutions **B**, **C**, **D** and sodium hydroxide solution.

Solution	Colour of Universal Indicator paper	pH
A		
B		
C		
D		
Sodium hydroxide		

[5]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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