



Rewarding Learning

General Certificate of Secondary Education

Centre Number

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Candidate Number

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# Chemistry

Unit 3: Practical Skills

Booklet A

Higher Tier

[GCM33]

Assessment



GCM33

### TIME

2 hours.

### Assessment Level of Control:

Tick the relevant box (✓)

Controlled Conditions	
Other	

### 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	

<b>Total Marks</b>	
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1 (a) Using a pipette and pipette filler, place 25.0 cm<sup>3</sup> of sodium hydroxide solution into a conical flask.

(i) Describe the appearance of the sodium hydroxide solution.

\_\_\_\_\_ [1]

(ii) For this part, you should record your results in the table below.

1. Add 3 drops of phenolphthalein indicator to the sodium hydroxide solution in the conical flask.
2. Fill the burette with hydrochloric acid (which is labelled **hydrochloric acid for use in question 1**).
3. Record the initial burette reading in the table to 1 decimal place.
4. Place the conical flask containing the sodium hydroxide solution under the burette and add the hydrochloric acid, while swirling, until the phenolphthalein just changes colour. Record the colour change of the indicator in the table.
5. Record the final burette reading in the table to 1 decimal place.
6. Calculate the volume of hydrochloric acid added from the burette and insert the value in the table.
7. **Keep the conical flask and its contents for use in part (b).**

Initial burette reading/cm <sup>3</sup>	
Final burette reading/cm <sup>3</sup>	
Volume of hydrochloric acid added/cm <sup>3</sup>	
Colour change of indicator	From _____ to _____

[6]

Examiner Only

Marks Remark

- (b) (i) Using a balance, measure out between 0.50 and 0.60 g of charcoal in a weighing boat and record the mass below.

Mass of charcoal = \_\_\_\_\_ [2]

- (ii) For this part, you should record your results in the table below.

1. Add the charcoal from the weighing boat to the conical flask from part (a). Place the conical flask on a gauze on top of a tripod.
2. Using a Bunsen burner, heat the conical flask. Stop heating when the contents begin to bubble.
3. Allow the conical flask and its contents to cool.
4. Filter and collect the filtrate in a clean conical flask.
5. Transfer the filtrate from the conical flask to a small beaker and **keep for part (c)**.
6. Complete the table below.

Appearance of residue	
Appearance of filtrate	

[4]

Examiner Only

Marks Remark

(c) Use the filtrate obtained from part (b)(ii) for the following tests.

- (i) Using a 10 cm<sup>3</sup> measuring cylinder, measure 5 cm<sup>3</sup> of the filtrate and place it in a test tube. Add 2 drops of silver nitrate solution to the test tube. Record your observations.

\_\_\_\_\_  
\_\_\_\_\_ [2]

- (ii) Dip a piece of nichrome wire into the filtrate and place the nichrome wire in a blue Bunsen burner flame. What is the colour of the flame observed?

\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark



**(b) Before starting the practical work for part (b), carefully read through the method given below to help you to draw a suitable table for your results.**

1. Using a 25 cm<sup>3</sup> measuring cylinder, place 20 cm<sup>3</sup> of hydrochloric acid (labelled **hydrochloric acid for use in question 2**) into a small beaker.
2. Using tweezers, add one piece of calcium to the beaker and immediately start the stopclock.
3. Stop the clock when the calcium has completely disappeared and record the time taken in seconds.
4. Rinse the 25 cm<sup>3</sup> measuring cylinder with deionised water and use it to place 20 cm<sup>3</sup> of ethanoic acid into a different small beaker.
5. Using tweezers, add one piece of calcium to the beaker and immediately start the stopclock.
6. Stop the clock when the calcium has completely disappeared and record the time taken in seconds.

**(i)** Draw a suitable table below and record your results.

[7]

**(ii)** Use your results to explain which reaction was faster.

\_\_\_\_\_  
\_\_\_\_\_ [1]

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**THIS IS THE END OF THE QUESTION PAPER**

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Examiner Only

Marks Remark



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