



Rewarding Learning

General Certificate of Secondary Education

Centre Number

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Candidate Number

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Double Award Science Chemistry

Unit 7: Practical Skills

Booklet A

Higher Tier

[GDW75]

Assessment



GDW75

TIME

1 hour.

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 **15**.

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 Elements, is included in this question paper.

For Examiner's use only	
Question Number	Marks
1	

Total Marks	
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1 You have been provided with hydrated copper(II) sulfate.

(a) (i) Describe the appearance of the hydrated copper(II) sulfate.

_____ [1]

Carry out the following **6 step** procedure to determine the mass of water of crystallisation lost when hydrated copper(II) sulfate is heated. **Record all masses to 2 decimal places.**

Step 1. Weigh a crucible and record its mass in the results table below.

Step 2. Leave the crucible on the balance and add between 1.20 g and 1.30 g of hydrated copper(II) sulfate. Record the total mass of the crucible and hydrated copper(II) sulfate in the results table.

(ii) Results Table

Reading	Mass (g)
Mass of empty crucible	
Mass of crucible + hydrated copper(II) sulfate	
Mass after 1 st heating	
Mass after 2 nd heating	
Mass after 3 rd heating	
Mass after 4 th heating	

[2]

Step 3. Place the crucible containing the hydrated copper(II) sulfate on a pipeclay triangle and **gently** heat for **three** minutes.

Step 4. Using tongs, carefully place the crucible on a heatproof mat and leave to cool for **five** minutes.

(b) How did you make sure that you were heating the hydrated copper(II) sulfate **gently**?

_____ [1]

Examiner Only

Marks Remark

Step 5. Reweigh the cooled crucible and its contents. Record this mass in the results table.

Step 6. Repeat Steps 3, 4 and 5 three times.

(c) Describe **two** observations made during heating of the hydrated copper(II) sulfate.

1 _____

2 _____ [2]

(d) (i) From your results, calculate, to 2 decimal places, each of the following:

The mass of the hydrated solid = _____ g

The mass of the anhydrous solid = _____ g

The mass of water of crystallisation = _____ g [3]

(ii) How would you know if the hydrated copper(II) sulfate had been heated "to constant mass"?

_____ [1]

(iii) What is the formula for the compound which remains after hydrated copper(II) sulfate has been heated to a constant mass?

_____ [1]

(e) Add **five** drops of water to the cooled solid in the crucible.

(i) Describe **three** things you observe during this reaction.

1 _____

2 _____

3 _____ [3]

(ii) Place the crucible and contents on a pipeclay triangle and **gently** heat for about one minute. Describe what you observe happening.

_____ [1]

Examiner Only

Marks

Remark

THIS IS THE END OF THE QUESTION PAPER

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