CAMBRIDGE
International Education

Cambridge IGCSE™

COMBINED SCIENCE **0653/52**

Paper 5 Practical Test **February/March 2026**

CONFIDENTIAL INSTRUCTIONS

3363304284

This document gives details of how to prepare for and administer the practical exam.

The information in this document and the identity of any materials supplied by Cambridge International are confidential and must NOT reach candidates either directly or indirectly.

The supervisor must complete the report at the end of this document and return it with the scripts.

INSTRUCTIONS

- If you have any queries regarding these confidential instructions, contact Cambridge International stating the centre number, the syllabus and component number and the nature of the query.
  email info@cambridgeinternational.org
  phone +44 1223 553554

This document has **8** pages.

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General information about practical exams

Centres must follow the guidance on science practical exams given in the *Cambridge Handbook*.

Safety

Supervisors must follow national and local regulations relating to safety and first aid.

Only those procedures described in the question paper should be attempted.

Supervisors must inform candidates that materials and apparatus used in the exam should be treated with caution. Suitable eye protection should be used where necessary.

The following hazard codes are used in these confidential instructions, where relevant:

C	corrosive	**MH**	moderate hazard
HH	health hazard	**T**	acutely toxic
F	flammable	**O**	oxidising
N	hazardous to the aquatic environment		

Hazard data sheets relating to substances used in this exam should be available from your chemical supplier.

Before the exam

- The packets containing the question papers must **not** be opened before the exam.
- It is assumed that standard school laboratory facilities, as indicated in the *Guide to Planning Practical Science*, will be available.
- Spare materials and apparatus for the tasks set must be available for candidates, if required.

During the exam

- It must be made clear to candidates at the start of the exam that they may request spare materials and apparatus for the tasks set.
- Where specified, the supervisor **must** perform the experiments and record the results as instructed. This must be done **out of sight** of the candidates, using the same materials and apparatus as the candidates.
- Any assistance provided to candidates must be recorded in the supervisor's report.
- If any materials or apparatus need to be replaced, for example, in the event of breakage or loss, this must be recorded in the supervisor's report.

After the exam

- The supervisor must complete a report for each practical session held and each laboratory used.
- Each packet of scripts returned to Cambridge International must contain the following items:
  - the scripts of the candidates specified on the bar code label provided
  - the supervisor's results relevant to these candidates
  - the supervisor's reports relevant to these candidates
  - seating plans for each practical session, referring to each candidate by candidate number
  - the attendance register.

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Specific information for this practical exam

During the exam, the supervisor (**not** the invigilator) must do the experiments in Questions 1, 2 and 3 and record the results on a spare copy of the question paper, clearly labelled 'supervisor's results'.

Question 1

Each candidate will require the following materials and apparatus.

hazard	materials and apparatus	quantity per candidate
	beetroot cylinders (see note 1.1)	5
	scalpel or knife	1
	boiling tubes (150 mm × 25 mm)	4
	small test-tubes (125 mm × 16 mm)	4
	rack/container to hold 4 boiling tubes and 4 small test-tubes	1
	means of writing on glassware	1
	white tile	1
	distilled water	100 cm^3
	10 cm^3 syringe	1
	stop-watch	1
	ruler, 30 cm, graduated in mm	1
	glass rod	1
	supply of paper towels	

Note

1.1 The beetroot cylinders should be prepared using a cork borer of diameter 10 mm to 15 mm. The cylinders presented to each candidate should be prepared using the same cork borer. The cylinders should be cut to a length of approximately 6 cm. They should be freshly prepared on the morning of the exam and presented to candidates in a small dish.

Action at changeover

Replace all materials and apparatus.

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Question 2

Each candidate will require the following materials and apparatus. Labels do **not** need to include concentrations.

hazard	materials and apparatus	quantity per candidate
[C][MH][N]	anhydrous copper(II) sulfate labelled **G** (see note 2.1)	4 spatula loads
[C]	1.0 mol / dm^3 dilute nitric acid labelled **dilute nitric acid** (see note 2.2)	5 cm^3
	0.1 mol / dm^3 aqueous barium nitrate labelled **aqueous barium nitrate** (see note 2.2)	5 cm^3
	250 cm^3 glass beaker	1
	polystyrene cup (see note 2.3)	1
	25 cm^3 measuring cylinder	1
	stirring thermometer, –10 °C to +110 °C, with 1 °C graduations	1
	test-tube (125 mm × 16 mm)	1
	test-tube rack	1
	teat pipette	2
	supply of paper towels	
	access to distilled or deionised water	

Notes

2.1 Provided in a sealed container so that the anhydrous copper(II) sulfate cannot gain water. If anhydrous copper(II) sulfate is not available it can be made by heating powdered copper(II) sulfate hydrate in a hot oven (about 150 °C) until all the blue solid turns white or off-white.

2.2 Provided in a dropper bottle or test-tubes with teat pipettes. Bottles can be shared by no more than four candidates, and care must be taken to avoid contamination of the solutions. Aqueous barium nitrate may be replaced with aqueous barium chloride labelled as **aqueous barium nitrate**.

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2.3 The cup must fit into the glass beaker as shown in Figure 2.1. If necessary, the bottom of the cup can touch the bottom of the beaker. The cup can be made from two paper cups (one inside the other) if polystyrene is not available.

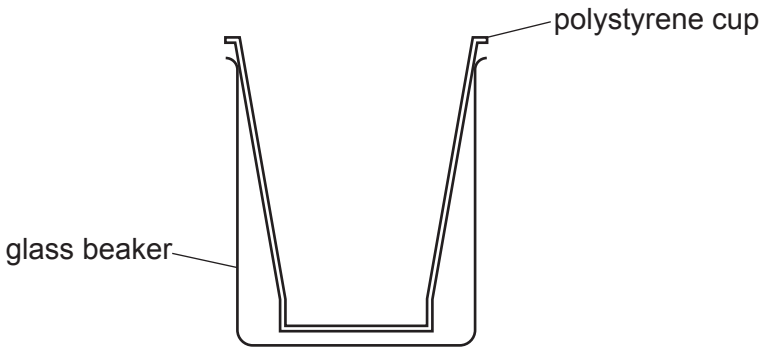

Figure 2.1

Action at changeover

Replace all apparatus with clean and dry apparatus.

Question 3

Each candidate will require the following materials and apparatus.

hazard	materials and apparatus	quantity per candidate
	metal object (see note 3.1)	1
	small container (see note 3.2)	1
	large container (see note 3.3)	1
	100 cm^3 measuring cylinder	1
	supply of paper towels	
	access to a balance that can measure up to 500 g, with a precision of at least 0.1 g (see note 3.4)	
	access to cold water	

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Notes

3.1 The metal object should be made from 3 × 100 g slotted masses, taped together.

3.2 The small container should be a small plastic pot or small tin can (not glass) with height at least 5 cm and capacity at least 100 cm^3. The metal object **must** fit fully inside the small container, as shown in Figure 3.1.

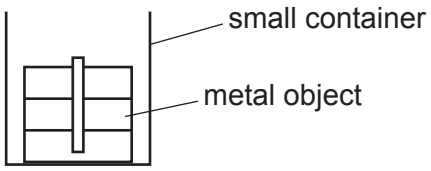

Figure 3.1

3.3 The large container should be a plastic or metal pot (not glass) with capacity at least 400 cm^3. The small container **must** fit inside the large container, as shown in Figure 3.2. The large container should be big enough that the small container can be removed from the large container easily.

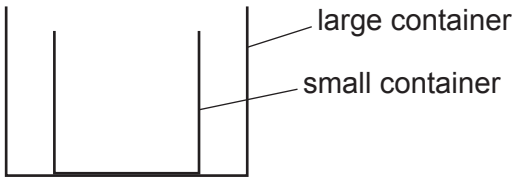

Figure 3.2

3.4 Each candidate will take one mass reading using the balance.

Action at changeover

If the apparatus is to be used by another candidate, it should be restored to its original state. The metal object and the containers should be dried.

Question 4

No materials or apparatus are needed for this question.

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Supervisor's report

Syllabus and component number | | | | | / | | |

Centre number | | | | | |

Centre name .....

Time of the practical session .....

Laboratory name/number .....

Give details of any difficulties experienced by the centre or by candidates (include the relevant candidate names and candidate numbers).

You must include:
- any difficulties experienced by the centre in the preparation of materials
- any difficulties experienced by candidates, e.g. due to faulty materials or apparatus
- any specific assistance given to candidates.

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Declaration

1 Each packet that I am returning to Cambridge International contains all of the following items:
- the scripts of the candidates specified on the bar code label provided
- the supervisor's results relevant to these candidates
- the supervisor's reports relevant to these candidates
- seating plans for each practical session, referring to each candidate by candidate number
- the attendance register.

2 Where the practical exam has taken place in more than one practical session, I have clearly labelled the supervisor's results, supervisor's reports and seating plans with the time and laboratory name/number for each practical session.

3 I have included details of difficulties relating to each practical session experienced by the centre or by candidates.

4 I have reported any other adverse circumstances affecting candidates, e.g. illness, bereavement or temporary injury, directly to Cambridge International on a *special consideration form*.

Signed ..... (supervisor)

Name (in block capitals) .....

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