CAMBRIDGE
International Education

Cambridge IGCSE™

CO-ORDINATED SCIENCES **0654/52**

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

CONFIDENTIAL INSTRUCTIONS

6110030027

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 **12** pages. Any blank pages are indicated.

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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, 3, 5 and 6 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
	slice of okra presented on a white tile (see note 1)	1
	30 cm ruler graduated in mm	1

Note 1

An okra should be sliced as shown in Figure 1.1.

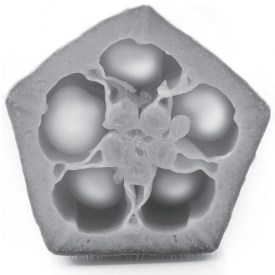


Figure 1.1

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Question 2

Each candidate will require the following materials and apparatus.

hazard	materials and apparatus	quantity per candidate
	test-tube containing yogurt to a depth of about 1 cm (see notes 2.1, 2.2 and 2.3)	2
	test-tube rack	1
	test-tube holder	1
[MH]	Benedict's solution with a dropper, labelled **Benedict's solution**	2 cm^3
[MH]	biuret solution with a dropper, labelled **biuret solution**	2 cm^3
	access to hot water-bath of approximately 80 °C (see note 2.4)	1
	paper towels	2
	glass stirring rods	2

Notes

2.1 The yogurt is required to give a positive test with Benedict's solution which is easily seen by candidates (red, orange, yellow or green). Glucose solution may be added to the yogurt to achieve this.

2.2 The yogurt is required to give a positive test with biuret solution (purple). Powdered egg, egg white or protein powder may be added to achieve this.

2.3 The yogurt needs to be plain and white in colour.

2.4 Candidates should be warned of the dangers of burns or scalds when using very hot water.

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Question 3

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

hazard	materials and apparatus	quantity per candidate
	1.0 mol dm^{-3} hydrochloric acid labelled **dilute hydrochloric acid**	40 cm^3
	powdered calcium carbonate labelled **calcium carbonate** (see note 3.3)	1 g
	250 cm^3 conical flask (see note 3.1)	1
	stopper with a delivery tube to fit conical flask (see notes 3.1 and 3.2)	1
	100 cm^3 measuring cylinder (see note 3.1)	1
	large container for water (see note 3.1)	1
	50 cm^3 measuring cylinder	1
	stop-watch	1
	paper towels	2

Notes

3.1 Figure 3.1 shows the apparatus which should be assembled for the students. The apparatus may be clamped to keep it stable.
The container needs to be large enough to collect the displaced water without overfilling.

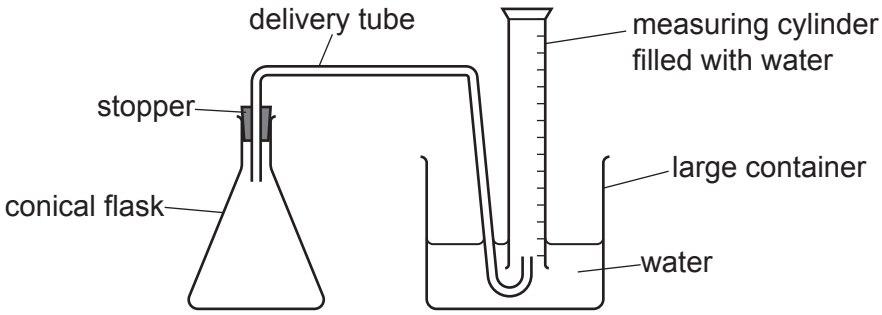


Figure 3.1

3.2 Flexible tubing or glass is suitable for the delivery tube.

3.3 The calcium carbonate needs to be supplied in a sample bottle or similar since it will be poured into the reaction vessel.

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Question 4

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

hazard	materials and apparatus	quantity per candidate
	1.5 mol dm^{-3} hydrochloric acid labelled **H**	10 cm^3
[C]	access to 1.0 mol dm^{-3} dilute nitric acid, labelled **dilute nitric acid** (see note 4.1)	4 cm^3
	access to 0.1 mol dm^{-3} barium nitrate in a bottle with a dropper or supplied with a dropping pipette, labelled **barium nitrate** (see note 4.1 and note 4.2)	2 cm^3
	access to 0.05 mol dm^{-3} silver nitrate in a bottle with a dropper or supplied with a dropping pipette, labelled **silver nitrate** (see note 4.1)	5 drops
[F]	access to universal indicator solution in a bottle with a dropper or supplied with a dropping pipette and labelled **universal indicator** (see note 4.1)	
	colour chart for the universal indicator supplied	
	test-tubes approximately 125 mm × 16 mm	3
	test-tube rack	1
	paper towels	2
	dropping pipettes	2

Notes

4.1 These reagents may be shared by not more than 4 candidates.

4.2 This may be aqueous barium chloride labelled as **barium nitrate**.

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Question 5

Each candidate will require the following materials and apparatus.

hazard	materials and apparatus	quantity per candidate
	cooking oil labelled as **oil** (see note 5.1)	75 cm^3
	water	75 cm^3
	retort stand, boss and clamp	1
	250 cm^3 beaker (see note 5.2)	2
	access to a balance to measure up to 500 g with a precision of 0.1 g (see note 5.3)	
	stirring thermometer –10 °C to +110 °C with 1 °C graduations	1
	small candle (see note 5.4)	1
	means of lighting the candle	
	stop-watch	1
	paper towel	5

Notes

5.1 Any cooking oil will be suitable e.g. sunflower oil. Please be aware of allergies to certain nut oils.

5.2 The beaker needs to be able to fit inside the jaws of the clamp. 100 cm^3 beakers are suitable if 250 cm^3 are not available.

5.3 The balance must be able to be zeroed after a beaker is placed on the balance. The centre may want to cover the balance in laboratory film to avoid it being soaked in oil.

5.4 Tealight style candles are suitable or centres may cut a standard sized candle to a height of 2 cm. The candle needs to be stable and not able to fall over.

Action at changeover

Ensure the candle is extinguished.

Replenish the liquids.

Wipe up any spillages.

Return the apparatus to its original state.

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Question 6

No apparatus is required 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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