



Cambridge IGCSE™

COMBINED SCIENCE

0653/05

Paper 5 Practical Test

For examination from 2025

SPECIMEN CONFIDENTIAL INSTRUCTIONS



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.

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.

Specific information for this practical exam

During the exam, the supervisor (**not** the invigilator) must do the experiments in Questions 1, 3 and 4 and record the results on a spare copy of the question paper, clearly labelled 'supervisor's results'.

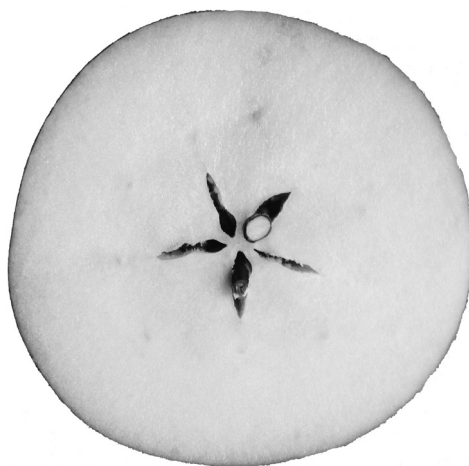
Question 1

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

hazard	materials and apparatus	quantity per candidate
	half an apple (see note 1.1)	1
	test-tubes and a means to support them (see note 1.2)	3
	dropping pipettes	2
	0.1% DCPIP solution in a small test-tube labelled DCPIP (see note 1.3)	10 cm ³
	apple juice in a small beaker, labelled apple juice (see note 1.4)	20 cm ³
	paper towels	5
	access to water to wash hands	

Notes

1.1 The apple should be freshly prepared by cutting a whole apple in half horizontally, as shown.



This should be done as close as possible to the start of the exam. The half of the apple should be covered with plastic film to prevent drying. The plastic film should be removed immediately before the start of the practical.

1.2 Test-tubes should be approximately 125 mm × 16 mm.

1.3 To make 0.1% DCPIP solution, dissolve 0.1 g DCPIP powder **[HH][MH][N]** in 100 cm³ distilled water.

1.4 To make the apple juice, dissolve 1 g vitamin C (ascorbic acid) in 100 cm³ deionised water. Before the exam, check that 4 drops of 0.1% DCPIP are decolourised by a minimum of 4 drops of apple juice and no more than 50 drops. Adjust the mass of ascorbic acid added accordingly.

Question 2

No materials or apparatus are required for this question.

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
[MH]	0.2 mol dm ⁻³ sulfuric acid labelled dilute sulfuric acid	50 cm ³
[F][N]	zinc powder labelled F	6 spatulas
	test-tubes and a means to support them (see note 3.1)	2
	10 cm ³ measuring cylinder	1
	boiling tube with a means of support (see note 3.2).	1
	stopper with delivery tube to fit boiling tube (see note 3.3)	
	25 cm ³ measuring cylinder	1
	trough (see note 3.4)	1
	retort stand, boss and clamp (see note 3.2)	1 or 2
	dropping pipette	1
	stop-watch or stop-clock	1
	access to paper towels	
	access to wooden splints and a means to light them	
	spatula	1
	red and blue litmus papers	2
[MH]	limewater and apparatus to test for carbon dioxide	
	access to water to fill the 25 cm ³ measuring cylinder and trough (see note 3.5)	

Notes

- 3.1** Test-tubes should be approximately 125 mm × 16 mm. They may be supported in a test-tube rack or appropriately sized beaker.
- 3.2** The boiling tube should be approximately 150 mm × 25 mm. It may be supported in a test-tube rack or with a retort stand and clamp. If a retort stand is used here, a second retort stand and clamp will be needed to support the 25 cm³ measuring cylinder.

3.3 The delivery tube is best made using flexible plastic tubing rather than glass. The length of the plastic tubing should be sufficient that when assembled there is no stress on the apparatus.

The apparatus should be assembled as shown in Fig. 3.1.

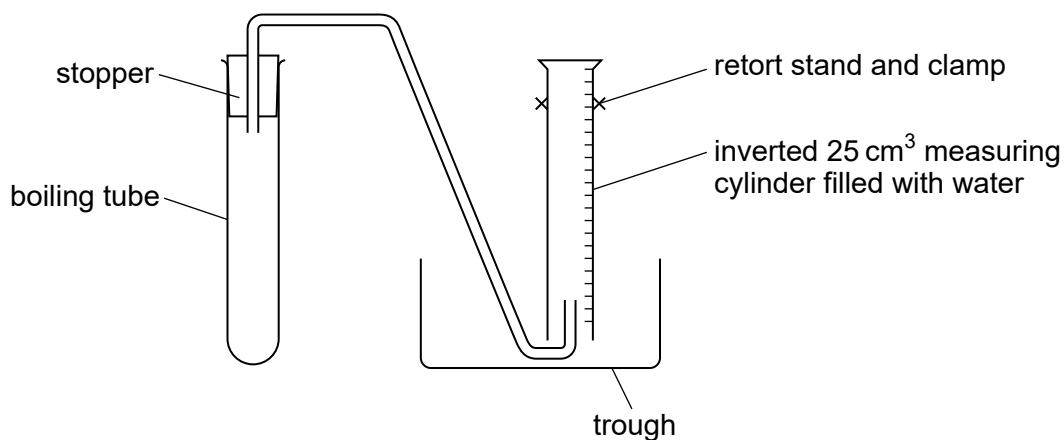


Fig. 3.1

3.4 The trough can be a large beaker or a bowl of sufficient size.

3.5 The supervisor may need to explain to a candidate how to fill and invert the 25 cm³ measuring cylinder to assemble the apparatus shown in the question paper. If this is done, the supervisor should make a note on the supervisor's report sheet.

Action at changeover

When candidates have finished with the zinc and dilute sulfuric acid mixtures, remove them from the bench and leave in a working fume hood.

Replace all the solutions and apparatus except that shown in Fig. 3.1.

Change the boiling tube and empty all the water from the trough and the inverted measuring cylinder. Assemble the apparatus as shown in Fig. 3.1.

Question 4

Each candidate will require the following materials and apparatus.

hazard	materials and apparatus	quantity per candidate
	wooden metre rule with a millimetre scale (see note 4.1)	1
	pivot – a prism or triangular wooden block placed on the bench	1
	30 cm or 50 cm ruler with a millimetre scale	1
	150 g load, labelled load (see note 4.2)	1

Notes

4.1 It is assumed that all candidates will use similar metre rules, unless stated otherwise in the supervisor's report. The approximate mass of a metre rule must be determined by the supervisor and recorded in the supervisor's report.

4.2 The load can be made from a combination of masses stuck together with tape.

Action at changeover

Disassemble the apparatus. Place the metre rule, ruler, pivot and load on the bench, within easy reach of each other.

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Supervisor's report

Syllabus and component number

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Centre number

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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.

Space for supervisor to record results, if relevant, e.g. temperature of the laboratory; results for Question 1.

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 that practical session.
- 3 I have included details of difficulties relating to this 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)