



Cambridge IGCSE™

PHYSICAL SCIENCE

0652/51

Paper 5 Practical Test

October/November 2024

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. Any blank pages are indicated.

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, 2 and 3 and record the results on a spare copy of the question paper, clearly labelled 'supervisor's results'.

Apparatus and chemicals for Question 1

Each candidate will require:

- 125 cm³ 1 M hydrochloric acid labelled **1 M hydrochloric acid**
- [MH] • 50 cm³ 0.1 M sodium hydroxide labelled **0.1 M sodium hydroxide**
- [MH] • 50 cm³ 0.2 M sodium hydroxide labelled **0.2 M sodium hydroxide**
- [MH] • 50 cm³ 0.4 M sodium hydroxide labelled **0.4 M sodium hydroxide**
- [C] • 50 cm³ 0.6 M sodium hydroxide labelled **0.6 M sodium hydroxide**
- [C][F][HH]
[MH][N][T] • methyl orange indicator in a bottle with a dropper or supplied with a dropper
- 1 burette
- 1 funnel used to fill burette
- 1 white tile
- 1 clamp stand boss and clamp to hold burette or a burette stand
- one 25 cm³ measuring cylinder (see Note 1)
- 4 conical flasks (see Note 2)
- paper towels
- access to deionised water for rinsing.

Notes

- 1 A 50 cm³ measuring cylinder may be substituted.
- 2 A minimum of 1 conical flask may be used but candidates will need to be told to rinse the flask between experiments.

Apparatus and chemicals for Question 2

Each candidate will require:

- 50 cm³ 1 M hydrochloric acid labelled **1.0 M hydrochloric acid** (see Note 1)
- [C] • 25 cm³ 0.6 M sodium hydroxide labelled **1.0 M sodium hydroxide** (see Note 2)
- 2 test-tubes (approximately 125 mm × 16 mm) and a means to support them
- access to 1 M nitric acid labelled **nitric acid**
- [MH][N] • access to 0.1 mol/dm³ silver nitrate labelled **silver nitrate** supplied in a dark bottle with a dropper
- 1 wooden splint
- 1 Bunsen burner and a means to light it
- heat-proof mat for Bunsen burner
- access to paper towels.

Notes

- 1 This is the same 1 M hydrochloric acid supplied in Question 1.
- 2 This is the same 0.6 M sodium hydroxide supplied in Question 1, with a new label.

Apparatus and chemicals for Question 3

Each candidate will require:

- clamp, boss and stand (see Note 1)
- pendulum bob attached to approximately 70 cm of thin inextensible string (see Note 1)
- split cork or similar device to hold the string of the pendulum between the jaws of the clamp (see Note 1)
- metre rule, graduated in mm
- stop-watch with a minimum precision of 0.01 s.

Notes

- 1 The apparatus is to be set up for candidates with length approximately 60 cm from the bottom of the split cork to the bottom of the pendulum bob.
- 2 Candidates must be able to adjust the length of the pendulum easily.
- 3 The pendulum bobs can be standard metal pendulum bobs or spheres made from modelling clay.

Apparatus for Question 4

No apparatus is required for this question.

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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.

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)