Cambridge Assessment International Education

Cambridge IGCSE™

PHYSICS **0625/52**

Paper 5 Practical Test **May/June 2025**

CONFIDENTIAL INSTRUCTIONS

8553840323

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.

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.

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'.

Question 1

Items to be supplied by the centre (per set of apparatus, unless otherwise specified)

(i) Boiling tube. See notes 1 and 2.

(ii) Clamp, boss and stand. See note 2.

(iii) 30 cm ruler, graduated in millimetres. Candidates may use their own.

(iv) 250 cm^3 beaker containing approximately 150 cm^3 of water.

(v) 100 cm^3 measuring cylinder.

Notes

1 A boiling tube approximately 150 mm × 25 mm is suitable.

2 The boiling tube is to be set up for candidates as shown in Fig. 1.1.

The bottom of the boiling tube should rest on the base of the stand.

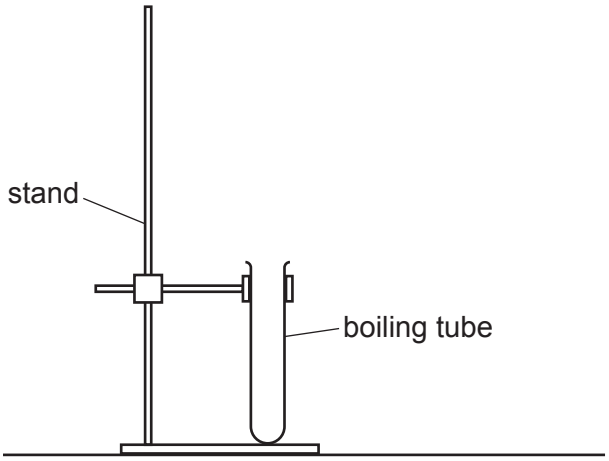

Fig. 1.1

Action at changeover

Empty the water from the boiling tube and the measuring cylinder and dry or replace them.
Top up the water in the beaker to approximately 150 cm^3.
Restore the apparatus to the set-up shown in Fig. 1.1.

Information required by examiners

A sample set of numerical results, clearly marked 'supervisor's results', obtained out of sight of the candidates.

Question 2

Items to be supplied by the centre (per set of apparatus, unless otherwise specified)

(i) 3 V power supply. See note 2.

(ii) Switch.

(iii) Voltmeter capable of measuring the supply p.d. with a precision of at least 0.1 V with two connecting leads. See note 3.

(iv) Light-dependent resistor (LDR). See notes 4 and 7.

(v) 470 Ω resistor. See notes 5 and 7.

(vi) Piece of card. See note 6.

(vii) Sufficient connecting leads to set up the circuit shown in Fig. 2.1.

Notes

1 The supervisor must set up the circuit shown in Fig. 2.1 for the candidates in advance of the examination. The experiment should take place in a well-lit area.

Terminals X, Y and Z must be labelled.

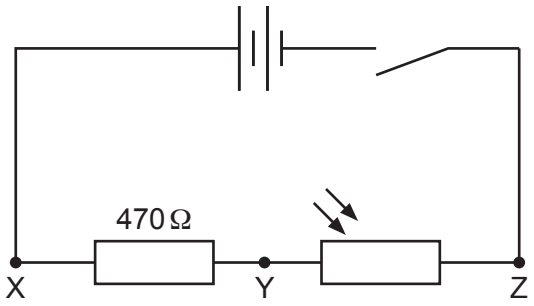

Fig. 2.1

2 The following are suitable power sources:

- two 1.5 V dry cells in suitable holders connected in series
- three 1.2 V rechargeable cells in suitable holders connected in series
- d.c. power supply of 3–4 V.

Where candidates are supplied with a power supply with a variable output voltage, the voltage setting should be set by the supervisor and fixed (e.g. taped).

The switch on the power supply should be left turned on and taped, and a separate switch should be included in the circuit so that candidates can switch the current on and off.

3 An analogue or a digital meter is suitable.

The voltmeter must have two connecting leads that can be connected between various points in the circuit. The positive (+) terminal of the voltmeter must be marked with a ‘ + ’ sign. The ends of the leads, where they are connected to the voltmeter, must be taped in place securely so that they cannot be removed. The voltmeter must be placed by the side of the circuit, not connected but switched on, if a digital meter is used.

4 A NORPS-12 LDR is suitable. The RS component code for a suitable LDR is RS 914–6714. The light-sensitive side of the LDR must be facing up.

5 The resistor must be labelled 470 Ω. The RS component code for a suitable resistor is RS 707–7647.

6 A piece of card approximately 10 cm × 10 cm is suitable. The thickness of the card should be such that the potential difference across the LDR increases significantly when the LDR is covered by the card.

7 The resistor and the LDR must have suitable terminals so that the candidate can connect the voltmeter in parallel with either of these components.

Action at changeover

The circuit must be restored to its original state, as shown in Fig. 2.1, with the switch open and the voltmeter removed and placed by the side of the circuit.

Information required by examiners

A sample set of numerical results, clearly marked ‘supervisor’s results’, obtained out of sight of the candidates.

Question 3

Items to be supplied by the centre (per set of apparatus, unless otherwise specified)

(i) A converging lens of focal length *f* between 14 cm and 16 cm, with a suitable holder.

(ii) A metre ruler with a millimetre scale.

(iii) An illuminated object consisting of a piece of white card with a triangular hole cut in it. See note 1.

(iv) A white screen. See note 2.

Notes

1 The object is made by cutting a hole in the shape of an equilateral triangle of sides 2.0 cm in the card (see Fig. 3.1). The triangular hole must be covered with translucent paper (e.g. tracing paper). The orientation of the triangle must be as shown in Fig. 3.1.

The illumination can be provided by a low voltage filament lamp, approximately 24 W, with a suitable power supply. An LED lamp of equivalent brightness can be used.

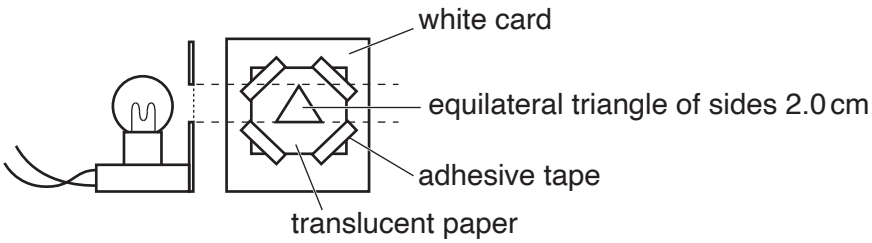

Fig. 3.1

2 The screen can be made from a sheet of white card, approximately 15 cm × 15 cm. Some means of supporting the screen vertically must be provided (e.g. fixing the white card to a small block of wood – see Fig. 3.2).

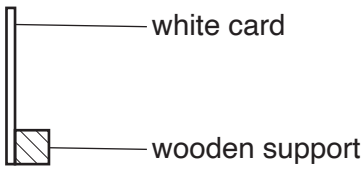

Fig. 3.2

3 The light source, the centre of the triangular hole in the object card and the centre of the lens in its holder must be arranged to be the same height above the bench.

4 The apparatus is to be situated away from direct sunlight.

Action at changeover

Check that the apparatus is intact and still working.
Replace the screen if it has been marked.
Switch off the lamp.

Information required by examiners

A sample set of numerical results, clearly marked ‘supervisor’s results’, obtained out of sight of the candidates.

Question 4

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.

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) .....