



Cambridge IGCSE™

PHYSICS

0625/52

Paper 5 Practical Test

February/March 2025

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:

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|-----------|--------------------------------------|-----------|-----------------|
| 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'.

Question 1

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

- (i) Steel spring. See note 1.
- (ii) Clamp, boss and stand. See note 2.
- (iii) 5 × 100 g masses. See note 3.
- (iv) Object of mass 330 g, labelled 'X'. See note 4.
- (v) 50 cm or 30 cm ruler, graduated in mm. Candidates may use their own.
- (vi) Set-square.

Notes

1. An expendable steel spring is suitable, for example a spring with a diameter of 16 mm and a length of 20 mm across the unextended coils. The spring must be able to support a load of at least 500 g without overstretching.
2. The clamp, boss and stand must be set up with the spring suspended from the clamp. The stand must be sufficiently tall to support the spring with a 500 g load, without the load touching the bench. Ensure that the stand, spring and mass can be arranged in a stable way so that they will not topple over.
3. The masses must include a hanger so that they can be suspended from the spring.
4. The object X must include a hanger as part of the mass. It must be made up in such a way that candidates cannot easily detect its mass. Standard masses encased in modelling clay would be suitable.
5. Spare springs must be available.

Action at changeover

Remove the load from the spring if necessary.

Check that the spring has not been deformed by overstretching and replace if necessary.

Question 2

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

- (i) Thermometer: -10°C to 110°C , graduated in 1°C intervals. See note 1.
- (ii) Clamp, boss and stand. See note 1.
- (iii) 250 cm^3 beaker labelled '**beaker A**'. See notes 2 and 3.
- (iv) 250 cm^3 beaker labelled '**beaker B**'. See note 3.
- (v) Supply of hot water. See notes 4 and 5.
- (vi) Stop-clock or stop-watch or wall-mounted clock showing seconds. Candidates will be required to take readings at 30-second intervals. The question will refer to a stop-watch.
- (vii) Paper towels to soak up any water spills.

Notes

1. The thermometer, clamp, boss and stand are to be set up for candidates as shown in Fig. 2.1. The thermometer bulb must be below the 150 cm^3 level of beaker B. Candidates must be able easily and safely to read temperatures up to 100°C and to move the thermometer into and out of the beakers.

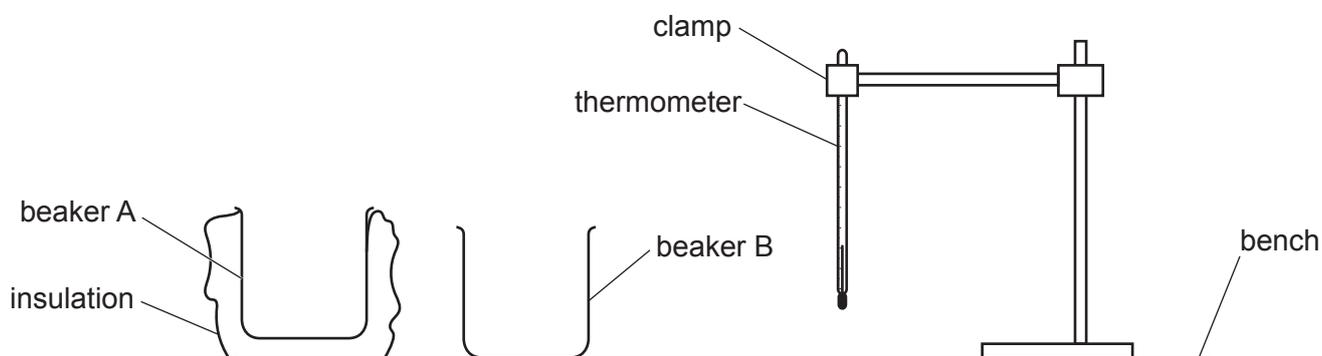


Fig. 2.1

2. The sides and base of beaker A must be covered with a thick layer of insulating material as indicated in Fig. 2.1. Cotton wool is suitable.
3. Beaker A and beaker B must have clear marks at the 200 cm³ level which can be read from inside the beaker.
4. Hot water is to be available for each candidate throughout the experiment. The hot water should be maintained at an approximately constant temperature between 80 °C and 100 °C. Each candidate will require about 450 cm³ of hot water in total. Candidates must be able to pour hot water into and out of the beaker safely.
5. Candidates must be warned of the dangers of burns or scalds when using very hot water.
6. Spare thermometers must be available.

Action at changeover

Empty water from the beakers if necessary.

Check that the apparatus is intact and is arranged as in Fig. 2.1.

Replace the insulation on beaker A if it is wet.

Question 3

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

- (i) Sheet of plain A4 paper (per candidate) with a hole in one corner so that it can be tied into the Question Paper. See note 1.
- (ii) Rectangular, transparent glass or Perspex block, 10 cm × 6 cm × 1.5 cm or similar size.
- (iii) 4 optics pins. See note 2.
- (iv) Pin board (e.g. cork mat), A4 size or larger.
- (v) 50 cm or 30 cm ruler, graduated in mm. Candidates may use their own.
- (vi) Protractor. Candidates may use their own.
- (vii) String or treasury tag (per candidate) to tie the ray-trace sheet, (i) above, into the Question Paper.

Notes

1. Spare sheets of plain paper, as in (i) above, must be available.
2. Spare pins must be available.

Action at changeover

Supply a sheet of plain A4 paper, as in (i) above, and string or treasury tag, as in (vii) above.

Information required by Examiners

In addition to a sample set of results, a completed ray-trace sheet obtained by the supervisor should be included with the supervisor's results.

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)