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Cambridge Assessment International Education

Cambridge IGCSE™

PHYSICS **0625/52**

Paper 5 Practical Test **May/June 2023**

CONFIDENTIAL INSTRUCTIONS

2695985843

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.
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  phone +44 1223 553554

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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.

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

Question 1

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

(i) Clamp, boss and stand.

(ii) Expendable spring, approximately 55 mm overall length (including loops) × 15 mm diameter, capable of supporting at least 600 g without overstretching (e.g. Philip Harris expendable steel spring, www.philipharris.co.uk).

(iii) A 100 g mass hanger and four 100 g slotted masses. See note 1.

(iv) Metre ruler graduated in mm. See note 3.

(v) Set square.

(vi) Spare springs should be available.

Notes

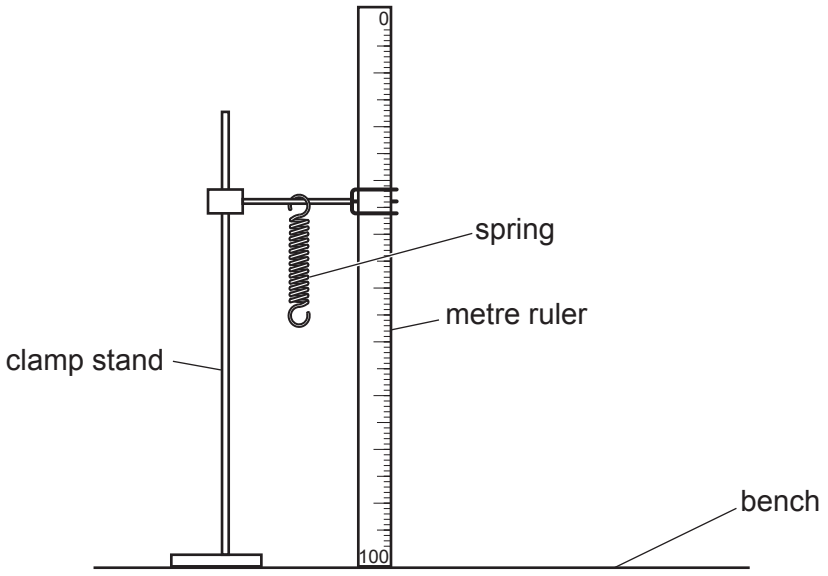


Fig. 1.1

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1. The four 100 g slotted masses and the 100 g mass hanger should each be labelled '1.0 N'. An alternative to individually labelling the masses is to provide a card with the words 'the mass hanger and masses each have a weight of 1.0 N'. If slotted masses are not available, a light hook must be provided so that up to five 100 g masses, each labelled '1.0 N', can be suspended from the spring.

2. The apparatus is to be set up for the candidates as shown in Fig. 1.1. The spring is to be suspended from the clamp, supported by a boss and stand. The spring must be sufficiently high above the laboratory bench so that when the 5.0 N load is suspended from the spring, the bottom of the load is above the surface of the bench.

3. The metre ruler (supported by the clamp, boss and stand) must be near to, but not touching, the spring. The 100 cm end of the metre ruler must be touching the bench.

Action at changeover

Check that the apparatus is set up ready for the next candidate, as shown in Fig. 1.1, with the spring near to the metre ruler.

Replace the spring if it has been overstretched.

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.

(ii) Clamp, boss and stand. See note 1.

(iii) 250 cm^3 beaker.

(iv) 100 cm^3 or 250 cm^3 measuring cylinder, graduated in 1 cm^3 or 2 cm^3 intervals.

(v) Stop-watch, stop-clock or wall-mounted clock showing seconds. The question will refer to a stop-watch.

(vi) Supply of hot water. See notes 2 and 3.

(vii) A lid for the beaker. See note 4.

(viii) Supply of paper towels to mop up any spills of water.

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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 100 cm^3 level of the beaker. Candidates must be able, easily and safely, to read temperatures up to 100 °C and to move the thermometer in and out of the beaker.

2. The hot water is to be supplied for each candidate by the supervisor. The water should be maintained at a temperature as hot as is reasonably and safely possible. Each candidate will require about 250 cm^3 of hot water.

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

4. The lid can be made from cardboard. It must have a hole at the centre to accept the thermometer. See Fig. 2.1.

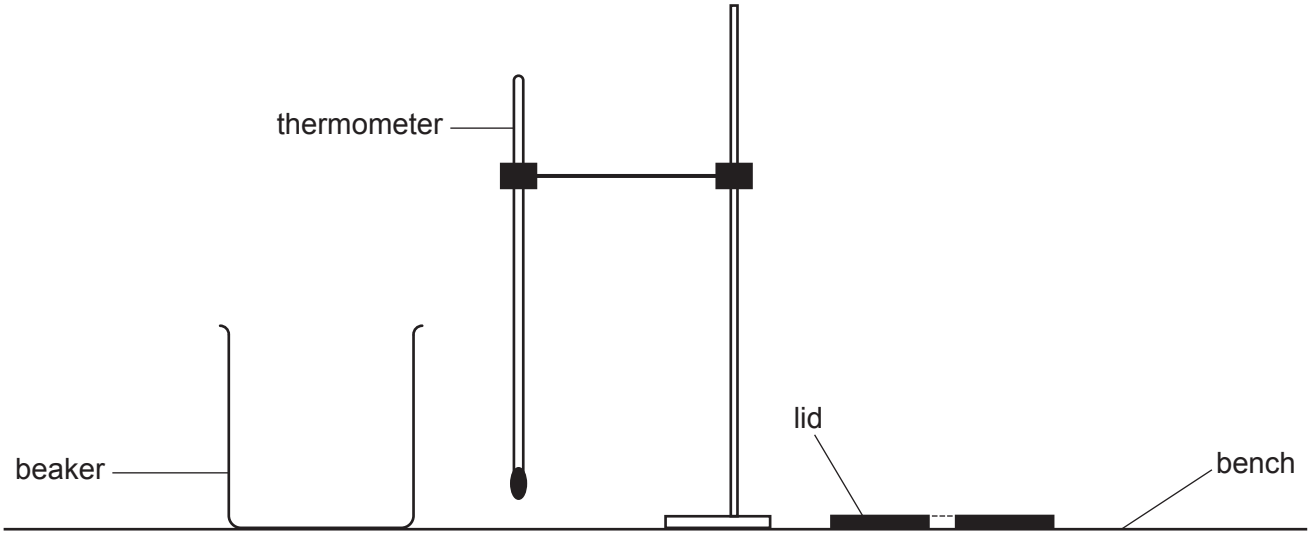


Fig. 2.1

Action at changeover

Remove the lid and thermometer from the beaker.

Empty the beaker and measuring cylinder.

Check the supply of hot water.

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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 booklet. See note 1.

(ii) Semicircular transparent glass or Perspex block, diameter approximately 8–10 cm.

(iii) 4 optics pins. See note 2.

(iv) Pin board e.g. a cork mat, A4 size or larger.

(v) Protractor (candidates may use their own).

(vi) 50 cm or 30 cm ruler, graduated in mm (candidates may use their own).

(vii) String or treasury tag (per candidate) to tie the ray-trace sheet (**(i)** above) into the question booklet.

Notes

1. Spare sheets of plain paper should be available (as in **(i)**).

2. Spare pins should be available.

Action at changeover

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

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.

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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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