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Cambridge Assessment International Education

Cambridge IGCSE™

PHYSICS **0625/51**

Paper 5 Practical Test **October/November 2023**

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

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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.

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.

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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) Metre ruler with a mm scale. See note 1.

(ii) Triangular block to act as a pivot for the metre ruler. This block is to stand on the bench.

(iii) A 200 g mass, labelled ‘P’. See notes 2 and 3.

Notes

1. If the metre ruler has two scales in opposite directions, one scale must be taped over.

2. Any suitable mass that can rest on the metre ruler can be used.

3. The value of the mass or weight of P must not be visible to the candidates.

Action at changeover

Remove the mass from the ruler.

Remove the ruler from the pivot.

Check that the apparatus is ready for the next candidate.

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Question 2

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

(i) Power supply of approximately 1.5–3 V. Where candidates are provided with a power supply with a variable output voltage, the voltage must be set by the supervisor and fixed (e.g. taped). See note 2.

(ii) Switch. The switch may be an integral part of the power supply.

(iii) Ammeter capable of reading up to 1.00 A with a resolution of at least 0.05 A. See note 3.

(iv) Voltmeter capable of measuring the supply p.d. with a resolution of at least 0.1 V. See note 3.

(v) Approximately 105 cm of straight, bare constantan (eureka) wire, diameter 0.28 mm (32 swg) or similar resistance wire with resistance of approximately 8 Ω / m. The wire must be taped to a metre ruler only between the 3 cm and 7 cm marks and between the 93 cm and 97 cm marks. The end of the wire at the zero end of the ruler is to be labelled 'B'. See note 4.

(vi) Two suitable terminals (e.g. crocodile clips) attached to the constantan wire at the ends of the metre ruler so that connections can be made to the circuit shown in Fig. 2.1.

(vii) Sliding contact, labelled 'C'. This may be a jockey or a small screwdriver connected to a lead by means of a crocodile clip.

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

Notes

1. The circuit is to be set up for the candidates as shown in Fig. 2.1.

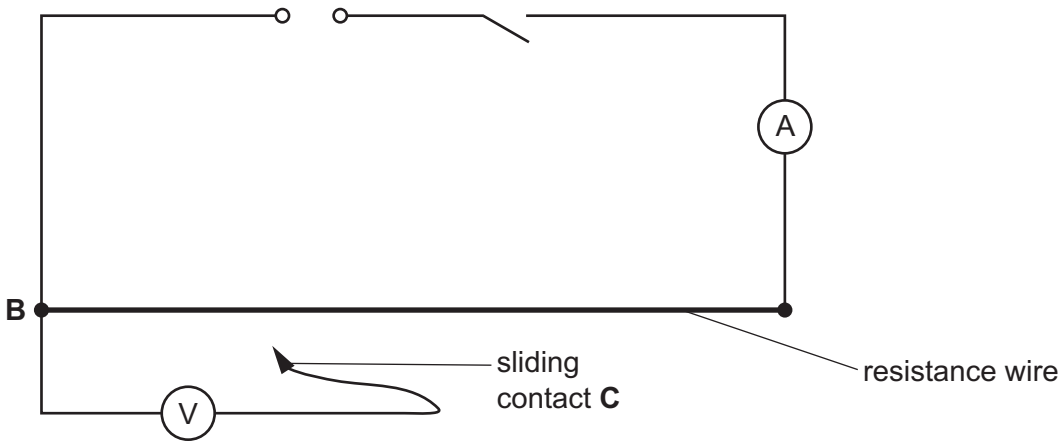


Fig. 2.1

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2. If cells are to be used, they must remain adequately charged throughout the examination. Spare cells must be available.

3. Either analogue or digital meters are suitable. Any variable settings should be set by the supervisor and fixed (e.g. taped). Spare meters must be available.

4. The wire must be attached to the metre ruler as shown in Fig. 2.2.

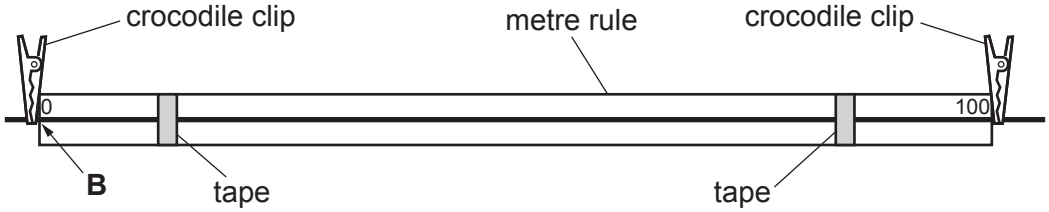


Fig. 2.2

Action at changeover

Check that the circuit is arranged as shown in Fig. 2.1.

Check that the circuit works. Open the switch.

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Question 3

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

(i) Converging lens, focal length between 14 cm and 16 cm, with a suitable holder.

(ii) Illuminated object with a triangular hole of height 1.5 cm (see Fig. 3.1 and Fig. 3.2). The hole is to be covered with thin translucent paper (e.g. tracing paper). See note 2.

(iii) Metre ruler, graduated in mm.

(iv) Screen. A white sheet of stiff card, approximately 15 cm × 15 cm and fixed to a wooden support, is suitable. See Fig. 3.3.

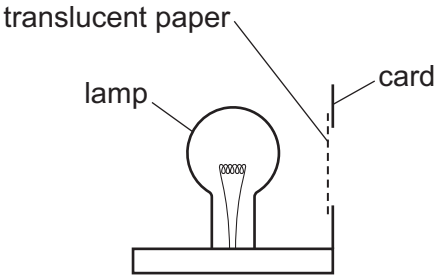


Fig. 3.1

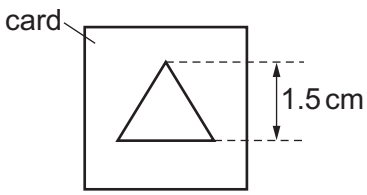


Fig. 3.2

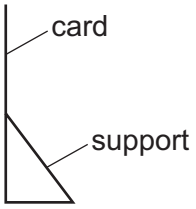


Fig. 3.3

Notes

1. The lamp for the illuminated object should be a low voltage lamp, approximately 24 W or higher, with a suitable power supply.

2. The centre of the triangular hole which forms the object, the lamp filament and the centre of the lens in its holder are all to be at the same height above the bench.

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

4. Spare lamps must be available.

Action at changeover

Check that the apparatus is ready for the next candidate.

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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