



Cambridge IGCSE™

PHYSICS

0625/52

Paper 5 Practical Test

May/June 2021

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.

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

Question 1

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

- (i) 250 cm³ beaker, labelled A. See note 1.
- (ii) 250 cm³ beaker, labelled B, containing 100 cm³ of dry sand.
- (iii) A card displaying the mass of beaker B when empty.
- (iv) Metre rule, graduated in mm.
- (v) Approximately 1 m length of thin inextensible string (per candidate).
- (vi) 250 cm³ measuring cylinder.
- (vii) Balance capable of measuring up to 500 g to the nearest gram. It is not necessary to supply each candidate with a balance but each candidate must have quick and easy access to a balance.

Notes

1. Beaker A must have a clear mark indicating the 250 cm³ level.

Action at changeover

Check that the measuring cylinder is empty.

Check that beaker B contains 100 cm³ of dry sand.

Question 2**Items to be supplied by the centre (per set of apparatus unless otherwise specified)**

- (i) Plane mirror with a suitable holder. See note 1.
- (ii) Sheet of plain A4 paper with a hole in one corner (per candidate). Spare sheets should be available.
- (iii) Four optics pins.
- (iv) Pin board (e.g. cork mat), A4 size or larger.
- (v) Protractor. Candidates may use their own.
- (vi) 30 cm ruler, graduated in mm. Candidates may use their own.
- (vii) Treasury tag or string to be used by the candidate to tie the ray-trace sheet, (ii) above, into the question paper (per candidate).

Notes

1. The mirror should be capable of standing vertically with one edge on the sheet of paper.

Action at changeover

Supply a sheet of plain paper, as in (ii) above.

Supply a treasury tag or string, as in (vii) above.

Question 3

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

- (i) Power supply of approximately 1.5V–3V. 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) Resistor of nominal value $4.7\ \Omega$ with a power rating of at least 2W. See note 3.
- (iv) Ammeter capable of measuring currents up to 1.00A with a minimum resolution of 0.05A. See note 4.
- (v) Voltmeter capable of measuring the supply potential difference (p.d.) with a resolution of at least 0.1V. See note 4.
- (vi) Approximately 105 cm of straight, bare constantan (Eureka) wire, diameter 0.45 mm (26 swg) or 0.38 mm (28 swg) or 0.32 mm (30 swg), taped to a metre rule. Tape 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 rule is to be labelled 'C'.
- (vii) Two suitable terminals (e.g. crocodile clips) attached to the constantan wire at the ends of the metre rule so that connections can be made to the circuit shown in Fig. 3.1.
- (viii) Sliding contact, labelled 'S'. This may be a jockey or a small screwdriver connected to a lead by means of a crocodile clip.
- (ix) Sufficient connecting leads to set up the circuit shown in Fig. 3.1.

Notes

1. The circuit is to be set up for the candidates as shown in Fig. 3.1.

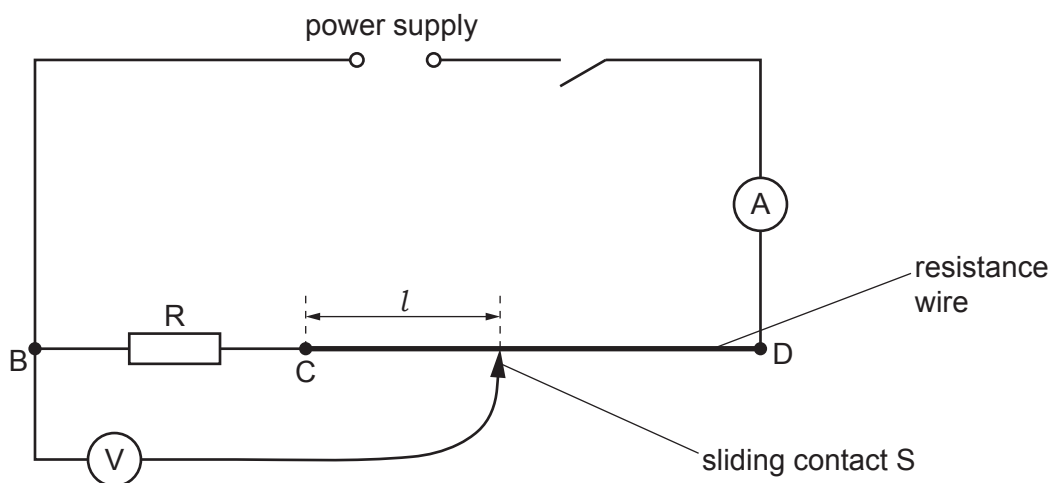


Fig. 3.1

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

3. The value of resistance must **not** be visible to the candidates. The resistor must have suitable terminals so that candidates are able to easily and quickly rearrange the circuit.
4. Either analogue or digital meters are suitable. Any variable settings should be set by the supervisor and fixed, e.g. taped.

Action at changeover

Check that the circuit is arranged as shown in Fig. 3.1.

Check that the circuit works. Open the switch.

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 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)