



# Cambridge IGCSE™

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**PHYSICS**

**0625/52**

Paper 5 Practical Test

**October/November 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.**

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## 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](mailto:info@cambridgeinternational.org)  
phone +44 1223 553554

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This document has **8** 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.

The following hazard codes are used in these confidential instructions, where relevant:

<b>C</b>	corrosive	<b>MH</b>	moderate hazard
<b>HH</b>	health hazard	<b>T</b>	acutely toxic
<b>F</b>	flammable	<b>O</b>	oxidising
<b>N</b>	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 experiment in Question 1 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) A block of wood with dimensions approximately 5 cm × 4.5 cm × 3 cm. The wood must be able to float on water. See note 1.
- (ii) A dish of water at room temperature large enough for the block of wood to float on the water. See note 2.
- (iii) 30 cm or 50 cm ruler, graduated in mm.
- (iv) Electronic balance capable of measuring masses up to 100 g to the nearest gram. See note 3.
- (v) Paper towels to mop up any spilt water and to dry the block.

#### Notes

1. The block of wood must be dry and outside of the dish of water.
2. The dish can be of any shape or material.
3. It is not necessary to provide a balance for each candidate but candidates must have convenient access to a balance without delay.

#### Action at changeover

Remove the block of wood from the dish. Dry the block of wood. Check that there is sufficient water in the dish. Replace the block if it has been marked.

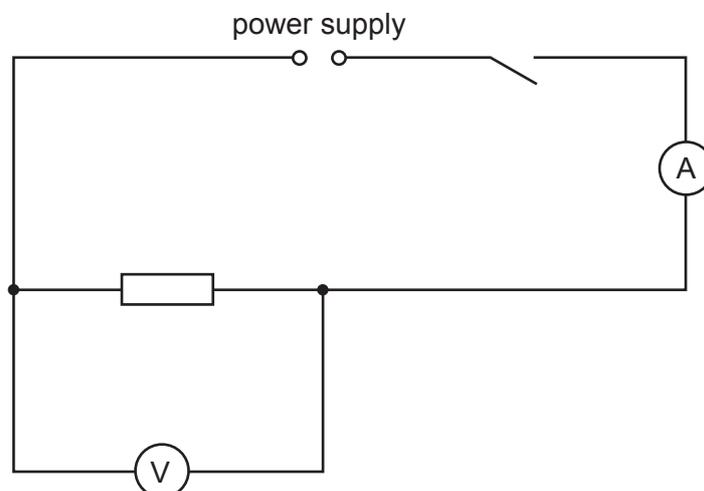
## Question 2

### 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 setting should be set by the supervisor and fixed (e.g. taped). See note 2.
- (ii) Resistor of nominal value  $4.7\ \Omega$  with a power rating of at least 2 W. See note 3.
- (iii) A lamp in a suitable holder. Any low-voltage lamp will suffice, provided that it glows when connected in place of the resistor as shown in Fig. 2.1. See note 3.
- (iv) Switch. The switch may be an integral part of the power supply.
- (v) Ammeter capable of reading up to 1.00 A with a minimum precision of 0.05 A. See note 4.
- (vi) Voltmeter capable of measuring the supply p.d. with a minimum precision of 0.1 V. See note 4.
- (vii) Sufficient connecting leads to construct the circuit shown in Fig. 2.1, with two additional leads. See note 3.
- (viii) Spare lamps should be available.

### Notes

1. The components are to be connected by the supervisor as shown in Fig. 2.1. The lamp is not to be connected into the circuit.



**Fig. 2.1**

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 and lamp must have suitable terminals so that candidates are able easily and quickly to 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). Spare meters should be available.

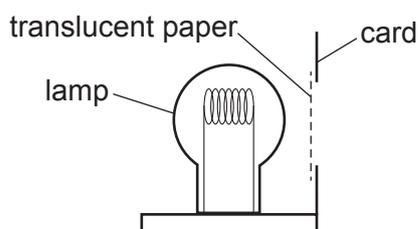
**Action at changeover**

Set up the circuit so that it is arranged as shown in Fig. 2.1.

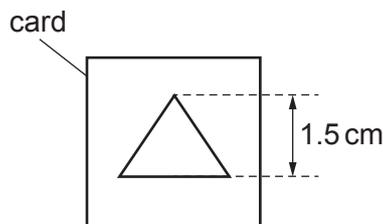
Check the power supply.

**Question 3****Items to be supplied by the centre (per set of apparatus unless otherwise specified)**

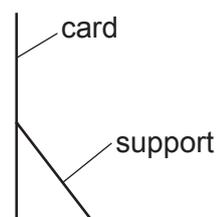
- (i) Converging lens, focal length between 14 cm and 16 cm, with a suitable holder.
- (ii) Illuminated object with a triangular hole of height 1.5 cm (see Fig. 3.1 and Fig. 3.2). The hole is to be covered with thin, translucent paper (e.g. tracing paper). See note 2.
- (iii) Metre rule, graduated in 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 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

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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) .....