www.dynamicpapers.com

Cambridge Assessment International Education

Cambridge IGCSE™

COMBINED SCIENCE **0653/52**

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

CONFIDENTIAL INSTRUCTIONS

1453525027

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

DC (CE/AR) 316015/1
© UCLES 2023

[Turn over

www.dynamicpapers.com

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.

© UCLES 2023

www.dynamicpapers.com

Specific information for this practical exam

During the exam, the supervisor (**not** the invigilator) must do the experiments in Questions 1, 3 and 4 and record the results on a spare copy of the question paper, clearly labelled 'supervisor's results'.

Apparatus and chemicals for Question 1

Each candidate will require the following materials and apparatus.

- slice of okra on a white tile (see note 1)
- 30 cm ruler graduated in mm

Notes

1. Preparation of materials – okra slice

   A 1 cm slice of okra (lady's fingers, edible seed pod of the plant *Abelmoschus esculentus*) should be prepared immediately before the examination and presented to candidates on a white tile. Each slice should be cut in the orientation indicated in Fig. 1.1 and contain at least one visible seed.

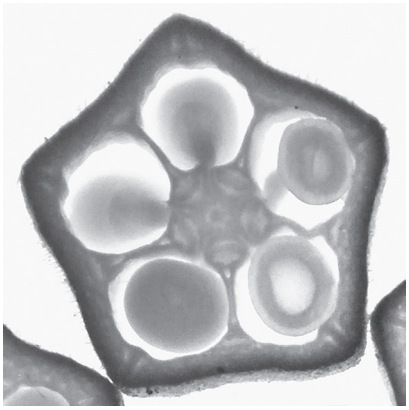

Fig. 1.1

Apparatus and chemicals for Question 2

No apparatus or chemicals are required for this question.

www.dynamicpapers.com

During the exam, the supervisor (**not** the invigilator) must do the experiments in Questions 1, 3 and 4 and record the results on a spare copy of the question paper, clearly labelled 'supervisor's results'.

Apparatus and chemicals for Question 3

Each candidate will require the following materials and apparatus. Labels do **not** need to include concentrations.

low hazard

- 5 g of zinc carbonate powder labelled **H**
- 10 cm^3 of 1.0 mol / dm^3 hydrochloric acid labelled **dilute hydrochloric acid**
- small hard glass or Pyrex test-tube (approximately 125 mm × 16 mm) labelled **H** and a means to support it
- small glass test-tube (approximately 125 mm × 16 mm) and a means to support it
- balance that measures to at least 2 decimal places (see note 1)
- cement laboratory mat
- test-tube holder to fit hard glass test-tube
- Bunsen burner
- spatula
- a means to light the Bunsen burner

Notes

1. The candidates will need to make three mass readings using the balance. A balance can be shared by the candidates.

© UCLES 2023

www.dynamicpapers.com

During the exam, the supervisor (**not** the invigilator) must do the experiments in Questions 1, 3 and 4 and record the results on a spare copy of the question paper, clearly labelled 'supervisor's results'.

Apparatus and chemicals for Question 4

Each candidate will require the following materials and apparatus.

- converging lens, focal length between 14 cm and 16 cm, with a suitable holder
- illuminated object with a triangular hole of height 1.5 cm (see Fig. 4.1 and Fig. 4.2). The hole is to be covered with thin, translucent paper (e.g. tracing paper) (see notes 1 and 2)
- metre rule graduated in mm
- screen. A white sheet of stiff card, approximately 15 cm × 15 cm, fixed to a wooden support is suitable. See Fig. 4.3
- spare lamps should be available

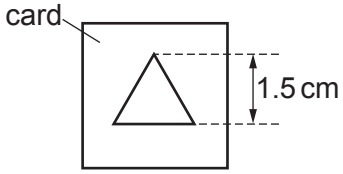

Fig. 4.1

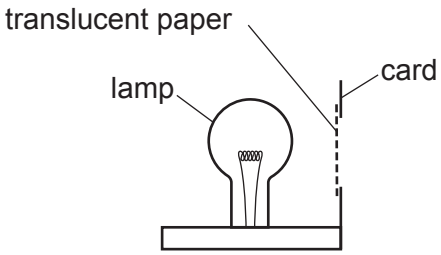

Fig. 4.2

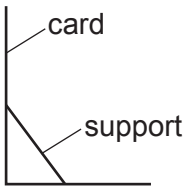

Fig. 4.3

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. A fully darkened room is not required.

Action at changeover

Rearrange the apparatus and check that the apparatus is ready for the next candidate.

© UCLES 2023

[Turn over

www.dynamicpapers.com

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.

© UCLES 2023

www.dynamicpapers.com

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.

© UCLES 2023

[Turn over

www.dynamicpapers.com

Space for supervisor to record results, if relevant, e.g. temperature of the laboratory; results for Question 1.

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) .....

© UCLES 2023