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Cambridge Assessment International Education

Cambridge IGCSE™

COMBINED SCIENCE **0653/51**

Paper 5 Practical Test **October/November 2020**

CONFIDENTIAL INSTRUCTIONS

4198058602

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. Blank pages are indicated.

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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

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'.

Question 1

Each candidate will require:

(i) half of an orange (see note 1)

(ii) 250 cm^3 beaker

(iii) 3 test-tubes (approximately 125 mm × 16 mm) and a means to support them

(iv) 2 dropping pipettes

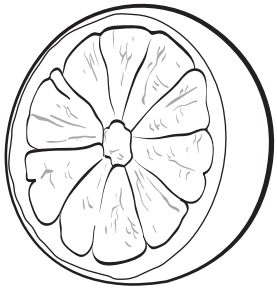
(v) 10 cm^3 0.2% DCPIP solution in a small test-tube labelled **DCPIP** (see notes 2, 3 and 4)

(vi) paper towels

(vii) access to water to rinse hands.

Notes

1. Half an orange cut as shown.



2. The test-tube of DCPIP should contain a bung or be covered with plastic film.

3. To make 0.2% DCPIP solution dissolve 0.2 g DCPIP powder **[HH][MH][N]** in 100 cm^3 distilled water.

4. Prior to the exam check that 2 drops of 0.2% DCPIP is decolourised by a minimum of 4 drops of freshly squeezed orange juice and no more than 30 drops.

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Question 2

No apparatus is required for this question.

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Question 3

Each candidate will require:

(i) 50 cm^3 2.5 mol dm^{-3} hydrochloric acid, labelled **2.5 M hydrochloric acid**

(ii) 50 cm^3 2.0 mol dm^{-3} hydrochloric acid, labelled **2.0 M hydrochloric acid**

(iii) 60 cm^3 1.5 mol dm^{-3} hydrochloric acid, labelled **1.5 M hydrochloric acid**

(iv) 50 cm^3 1.0 mol dm^{-3} hydrochloric acid, labelled **1.0 M hydrochloric acid**

[F] **(v)** 2 pieces of magnesium ribbon, each 3 cm

[F] **(vi)** 5 pieces of magnesium ribbon, each 1 cm

(vii) 1 test-tube (approximately 150 mm × 25 mm) and a means to support it

(viii) 1 conical flask

(ix) wooden splint and a means to light it

(x) stop-clock

(xi) 25 cm^3 measuring cylinder

(xii) access to red and blue litmus paper

[MH] **(xiii)** apparatus and limewater used for carbon dioxide test

(xiv) access to distilled / deionised water

(xv) access to water for washing flask

(xvi) paper towels

(xvii) dropping pipette.

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Question 4

Each candidate will require:

(i) sheet of plain A4 paper with a hole in one corner so that it can be tied into the question paper

(ii) rectangular, transparent glass block or Perspex block, approximately 11 cm × 6 cm × 2 cm

(iii) piece of string or treasury tag to tie the A4 paper in **(i)** into the question paper

(iv) pin board (e.g. cork mat) A4 size or larger

(v) 4 optics pins

(vi) protractor

(vii) 30 cm ruler.

Notes

1. Spare optics pins and spare sheets of plain A4 paper should be available to candidates.

2. At changeover:
   - remove any used paper
   - supply a clean A4 sheet of paper and a new piece of string or treasury tag
   - check that there are still 4 optics pins and replace as necessary.

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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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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 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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