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**COMBINED SCIENCE**

**0653/52**

Paper 5 Practical Test

**May/June 2019**

**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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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.

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This document consists of **7** printed pages and **1** blank page.

## 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 experiments in Questions 1, 2 and 4 and record the results on a spare copy of the question paper, clearly labelled 'supervisor's results'.

### For Question 1

Each candidate will require:

- (i) 25 cm<sup>3</sup> 0.4 mol dm<sup>-3</sup> barium nitrate solution labelled **barium nitrate solution**
- (ii) 40 cm<sup>3</sup> 0.2 mol dm<sup>-3</sup> sodium sulfate solution labelled **sodium sulfate solution**
- (iii) two 10 cm<sup>3</sup> measuring cylinders
- (iv) six test-tubes (approximately 125 mm × 15 mm)
- (v) means to support test-tubes
- (vi) means to label test-tubes
- (vii) stirring rod
- (viii) access to distilled water
- (ix) 15 cm or 30 cm ruler graduated in mm.

**For Question 2**

Each candidate will require:

- (i) 20g of crushed apple, with 10 cm<sup>3</sup> 5% pectinase solution, in a small beaker labelled **A** (see note 1)
- (ii) 20g of crushed apple, with 10 cm<sup>3</sup> distilled water, in a small beaker labelled **B** (see note 1)
- (iii) two funnels
- (iv) four filter papers to fit funnels
- (v) two 25 cm<sup>3</sup> measuring cylinders
- (vi) sight of a clock.

**Notes**

1. The apple should be chopped into small pieces and then crushed using a pestle and mortar or a blender.

Beaker **A** must be prepared the day before the exam and kept covered in a warm place.

Beaker **B** can be prepared on the day of the examination.

**For Question 3**

No apparatus is required for this question.

**For Question 4**

Each candidate will require:

- (i) 250 cm<sup>3</sup> glass beaker
- (ii) 100 cm<sup>3</sup> or 250 cm<sup>3</sup> measuring cylinder
- (iii) approximately 150 cm<sup>3</sup> water at room temperature
- (iv) ice cube of approximately 25–30 g mass (these could be made in an ice cube tray) (see note 1)
- (v) glass stirring rod
- (vi) stop-clock
- (vii) paper towel
- (viii) access to a top-pan balance suitable for measuring to an accuracy of 0.01 g
- (ix) –10 to 110 °C thermometer with 1 °C graduations.

**Notes**

1. The ice cubes should be kept in a freezer or cool box until they are required, and then given to candidates in a small beaker/container.
2. At changeover, empty the glass beaker and dry the bench area.

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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.

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) .....