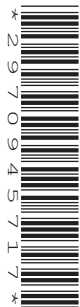

PHYSICAL SCIENCE

0652/52

Paper 5 Practical Test

October/November 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.

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:

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.

Specific information for this practical exam

During the exam, the supervisor (NOT the invigilator) must do the experiments in Questions 1, 2 and 3 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:

- (i) approximately 35 cm^3 2.0 mol dm^{-3} hydrochloric acid labelled **hydrochloric acid**
- [C] (ii) approximately 35 cm^3 2.0 mol dm^{-3} sodium hydroxide labelled **sodium hydroxide**
- (iii) 25 cm^3 measuring cylinder
- (iv) 100 cm^3 beaker
- (v) stirring thermometer, -10 to $110\text{ }^\circ\text{C}$
- (vi) stopclock
- (vii) distilled water and a means to dispose of waste water.

Apparatus and chemicals for Question 2

Each candidate will require:

- [C][MH][N]** (i) 5 g anhydrous copper sulfate in a small beaker labelled **A**
- [C]** (ii) access to approximately 1 mol dm^{-3} aqueous sodium hydroxide
- [MH][N]** (iii) 2 cm^3 aqueous ammonia, approximately 1.0 mol dm^{-3} in a test-tube labelled **B**
- [C]** (iv) access to nitric acid, approximately 2.0 mol dm^{-3} and a dropping pipette
- (v) access to aqueous barium nitrate, approximately 0.1 mol dm^{-3} and a dropping pipette
- [MH][N]** (vi) access to aqueous silver nitrate, approximately 0.05 mol dm^{-3} and a dropping pipette
- (vii) 25 cm^3 measuring cylinder
- (viii) stirring rod
- (ix) spatula
- (x) 5 test-tubes (approx $125 \text{ mm} \times 15 \text{ mm}$) and a means to support them. See Note
- (xi) wooden splint
- (xii) Bunsen burner and a means to light it
- (xiii) heatproof mat
- (xiv) distilled or deionised water.

Note

Centres may provide fewer test-tubes, the minimum being four test-tubes ($125 \text{ mm} \times 15 \text{ mm}$). If this is the case, during the experiment candidates will have to rinse test-tubes with distilled water which must be provided and with a means to dispose of the waste water.

Apparatus for Question 3

Each candidate will require:

- (i) soft modelling clay, 35g approximately
- (ii) 30 cm rule
- (iii) metre rule
- (iv) pivot
- (v) 50g mass
- (vi) two wooden blocks. See note 1
- (vii) measuring cylinder, 100 cm³. See note 2
- (viii) paper towels.

Notes

1. Wooden blocks must be cuboid and roughly equal in size. The sides of the wooden blocks must have lengths of between 5–10 cm.
2. The measuring cylinder is to contain exactly 50.0 cm³ of water.

Action at changeover

Ensure that the soft modelling clay is dry and the measuring cylinder contains exactly 50 cm³ of water. Replace the soft modelling clay if necessary.

Apparatus for 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)