PHYSICAL SCIENCE 0652/05
Paper 5 Practical Test For Examination from 2019

SPECIMEN 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 CIE 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 CIE 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.

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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
- **HH** health hazard
- **F** flammable
- **N** hazardous to the aquatic environment
- **MH** moderate hazard
- **T** acutely toxic
- **O** oxidising

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'.

For Question 1

Each candidate will require

**[HH]**  
(i) homogeneous mixture of the solids copper carbonate, CuCO₃, zinc sulfate, ZnSO₄, and manganese(IV) oxide, MnO₂ in the approximate weight ratio 2 : 2 : 1 labelled A (allow each candidate 2.5 g)

**[C MH N]**  
(ii) approximately 20 cm³ 2.0 mol dm⁻³ aqueous ammonia, NH₃ labelled aqueous ammonia

(iii) approximately 30 cm³ 2.0 mol dm⁻³ hydrochloric acid, HCl labelled dilute hydrochloric acid

(iv) supply of distilled water

(v) 25 cm³ measuring cylinder

(vi) two small beakers (e.g. 100 cm³)

(vii) filter funnel and at least two filter papers

(viii) two test-tubes (125 mm × 15 mm)

(ix) two large test-tubes (150 mm × 25 mm)

(x) means of holding a test-tube

(xi) stirring rod

(xii) tripod and gauze

(xiii) Bunsen burner

Notes

1 Centres may provide fewer test-tubes, the minimum being one test-tube (125 mm × 15 mm) and one large test-tube (150 mm × 25 mm). If this is the case, candidates will have to rinse test-tubes with distilled water, which must be provided.
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’.

For Question 2

Each candidate will require

[MH N] (i) 1 g solid anhydrous copper(II) sulfate, CuSO₄, labelled B. This can be made by carefully heating hydrated copper(II) sulfate, CuSO₄·5H₂O, until it is white/grey but not brown or blue

[MH] (ii) 1 g solid ammonium chloride, NH₄Cl, labelled C

(iii) 1 g solid sodium chloride, NaCl, labelled D. This must be in the form of fine crystals

(iv) approximately 20 cm³ 0.1 mol dm⁻³ barium nitrate, Ba(NO₃)₂, labelled aqueous barium nitrate with a dropper

[N] (v) approximately 20 cm³ 0.05 mol dm⁻³ silver nitrate, AgNO₃, labelled aqueous silver nitrate with dropper

[MH] (vi) approximately 10 cm³ 0.1 mol dm⁻³ nitric acid, HNO₃, labelled dilute nitric acid with a dropper

(vii) supply of distilled water

(viii) 25 cm³ measuring cylinder

(ix) one small beaker (e.g. 100 cm³)

(x) −10 to +110 °C thermometer, capable of measuring to 1 °C

(xi) two test-tubes (125 mm × 15 mm)

(xii) means of holding a test-tube

(xiii) stirring rod
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’.

For Question 3

Each candidate will require

(i) power supply of approximately 1.5 to 2.0 V. Where candidates are supplied with a power supply of variable voltage output, the voltage should be set by the supervisor and taped. Where batteries are used, a supply of fully-charged batteries should be available in addition to the batteries for each candidate

(ii) a voltmeter capable of measuring to 0.1 V, up to 2.0 V

(iii) an ammeter capable of measuring to 0.05 A, up to 1.0 A

(iv) switch. This may be an integral part of the power supply

(v) approximately 105 cm of straight, bare constantan wire of diameter 0.31 mm (30 swg) or 0.27 mm (32 swg), taped to a metre rule at two places (between the 0 and 5 cm mark and between the 95 cm and 100 cm mark). The zero end of the wire must be labelled X, the other end, Y

(vi) two suitable terminals (e.g. crocodile clips) attached to the constantan wire at ends X and Y of the metre rule, so that the power supply, switch and ammeter can be connected to the resistance wire

(vii) sliding contact labelled C. This may be a crocodile clip connected to a lead and clipped to a small screwdriver (see Fig. 3.1)

![Fig. 3.1](image-url)
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’.

Notes

1 The circuit shown in Fig. 3.2 must be set up for candidates.

![Circuit Diagram](image)

**Fig. 3.2**

**Action at changeover**

Check that the circuit is still connected correctly. If batteries are used, check that they are adequately charged and replace if necessary.

**For Question 4**

No apparatus is required for this question.
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.
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 CIE 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 that practical session.

3 I have included details of difficulties relating to this 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 CIE on a special consideration form.

Signed ................................................................................................................................. (supervisor)

Name (in block capitals) .........................................................................................................................