



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education (9–1)

CHEMISTRY

0971/51

Paper 5 Practical Test

May/June 2018

CONFIDENTIAL INSTRUCTIONS

Great care should be taken to ensure that any confidential information given does not reach the candidates either directly or indirectly.

READ THESE INSTRUCTIONS FIRST

The teacher responsible for preparing the examination is **not** allowed to consult the Question Paper before the examination. Teachers should, as part of the preparation of the examination requirements, carry out any tests indicated on pages 2 and 3 in order to satisfy themselves that the supplied materials are satisfactory.

The Supervisor's Report to be included with the scripts is given on pages 7 and 8. Please detach and enclose it with the scripts. If scripts are despatched in more than one envelope, it is essential that a copy of the Supervisor's Results and of the Supervisor's Report are sent inside **each** envelope.

More material may be issued if required, without penalty, but this should **not** be necessary.

Supervisors are advised to remind candidates that **all** substances in the examination should be treated with caution. Suitable eye protection should be provided.

In accordance with COSHH (Control of Substances Hazardous to Health) Regulations, operative in the UK, a hazard appraisal of the examination has been carried out.

Attention is drawn, in particular, to certain materials used in the examination. The following codes are used 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 should be available from your suppliers.

If you have any queries regarding these Confidential Instructions, please contact Cambridge stating the Centre number, the nature of the query and the syllabus number quoted above.

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This document consists of **8** printed pages.



Question 1

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

- (a) 250 cm³ of aqueous sodium thiosulfate, Na₂S₂O₃·5H₂O, containing 40 g/dm³ labelled **aqueous sodium thiosulfate**.
The aqueous sodium thiosulfate must be freshly prepared.
- (b) 100 cm³ of hydrochloric acid of concentration 2.0 mol/dm³ labelled **dilute hydrochloric acid**
- (c) access to water and distilled water
- (d) 50 cm³ measuring cylinder
- (e) 10 cm³ measuring cylinder
- (f) 250 cm³ conical flask
- (g) teat pipette
- (h) stop-clock or timer which can measure to an accuracy of 1 s

Per five candidates

A bucket labelled **quenching bath** must be provided.

The bucket must contain 1 dm³ of approximately 5% sodium carbonate solution (made up by dissolving 50 g of Na₂CO₃ [MH] or 135 g of Na₂CO₃·10H₂O [MH] in 1 dm³ of water) and Universal Indicator.

The Supervisor must monitor the colour of the Universal Indicator in each quenching bath to check that the solution has not become acidic. If the solution becomes acidic, the Supervisor must add more 5% sodium carbonate solution to the quenching bath.

Question 2

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

[C] (a) 12 cm³ of dilute nitric acid of concentration 1 mol/dm³ in a stoppered test-tube labelled **solution A**

(b) 0.3 g of basic zinc carbonate or zinc carbonate, ZnCO₃, in a stoppered test-tube labelled **solid B**

[MH][N] (c) aqueous ammonia of concentration 1 mol/dm³

[C] (d) aqueous sodium hydroxide of concentration 1 mol/dm³

[MH][N] (e) solid copper(II) oxide

[F] (f) 2 cm strip of magnesium ribbon

(g) small piece of aluminium foil, approximately 1 cm × 1 cm in size

[MH] (h) limewater and apparatus used to test for carbon dioxide

(i) distilled water

(j) pH indicator paper and chart

(k) red and blue litmus paper

(l) splints

(m) Bunsen burner and matches

(n) rack of test-tubes

(o) hard glass test-tube

(p) 2 × boiling tubes

(q) stopper to fit test-tubes

(r) test-tube holder

(s) teat pipettes

(t) spatula

The Supervisor's Report is on pages 7 and 8.

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This form must be completed and returned in the envelope with the scripts.

Supervisor's Report

1 (a) Supervisor's Results

It is recommended that the Supervisor should be a chemistry teacher.

The Supervisor is asked to carry out the experiments in Questions 1 and 2 and to record the results on a spare copy of the Question Paper clearly labelled 'Supervisor's Results'. Failure to enclose these results and this report form may lead to candidates being unavoidably penalised.

(b) The candidate numbers of candidates in each session were:

First session

Second session

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- 2 The Supervisor is invited to report details of any difficulties experienced by candidates giving names and candidate numbers. The report should include reference to:
- (a) any general difficulties encountered in making preparations for the examination
 - (b) difficulties due to faulty apparatus or materials
 - (c) accidents to apparatus or materials.

Other cases of individual hardship, e.g. illness, temporary disability, should be reported directly to Cambridge on the Special Consideration form.

Declaration (to be signed by the Supervisor)

The preparation of this practical examination has been carried out so as to maintain fully the security of the examination.

Name of Centre

Centre number

Signed

Name (in block capitals) (Supervisor)

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