



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CHEMISTRY

0620/51

Paper 5 Practical Test

May/June 2016

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 standard Report Form 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 Report Form 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. Safety glasses 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 Instructions, please contact CIE

by e-mail: info@cie.org.uk,

by phone: +44 1223 553554,

by fax: +44 1223 553558,

stating the Centre number, the nature of the query and the syllabus number quoted above.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

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

For Question 1

Each candidate will require

- (a) one 25 cm³ measuring cylinder
- (b) one 50 cm³ burette with stand and clamp
- (c) one 250 cm³ conical flask
- (d) 100 cm³ of an aqueous solution of sodium carbonate, Na₂CO₃, of concentration 0.05 mol/dm³, labelled **aqueous sodium carbonate**
(This can be made by adding 5.3 g of anhydrous sodium carbonate to 500 cm³ of distilled water. Dissolve the solid and then make the volume up to 1 dm³ with distilled water.)
- (e) 100 cm³ of hydrochloric acid of concentration 0.10 mol/dm³, labelled **solution A**
- (f) 100 cm³ of hydrochloric acid of concentration 0.20 mol/dm³, labelled **solution B**
- (g) access to water and distilled water

[F][MH][HH] (h) thymolphthalein indicator

[F][MH][HH] (i) methyl orange indicator

- (j) a white tile
- (k) funnel for filling burette
- (l) teat pipette

For Question 2

Each candidate will require

- (a) 0.5 g of sodium bromide, NaBr, labelled **solid C**
 - (b) 15 cm³ of an aqueous solution of chromium(III) chloride, CrCl₃.6H₂O, of concentration 0.1 mol/dm³, labelled **solution D**
 - (c) distilled water
 - (d) apparatus for a flame test
One method is to dip a wooden splint into dilute hydrochloric acid and then into the solid, followed by insertion into a blue flame.
 - (e) rack of six test-tubes and stopper to fit
- [N][MH] (f) aqueous silver nitrate of sufficient concentration to give a positive halide test
- [C] (g) aqueous nitric acid of concentration 1 mol/dm³
- [C] (h) aqueous sodium hydroxide of concentration 1 mol/dm³
- [N][MH] (i) aqueous ammonia of concentration 1 mol/dm³
- (j) spatula
 - (k) teat pipettes
 - (l) pH indicator paper and chart

Note: Labels do not need to include concentrations.

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.

REPORT ON PRACTICAL CHEMISTRY

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



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 direct to CIE on the normal *Application for Special Consideration* form.

NAME OF CENTRE

CENTRE NUMBER

SIGNED

Supervisor

DECLARATION (to be signed by the Principal)

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

NAME

(in block capitals)

SIGNED (Principal)

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