



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

**CHEMISTRY**

**0620/52**

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 100 cm<sup>3</sup> or 50 cm<sup>3</sup> measuring cylinder
- (b) one 10 cm<sup>3</sup> measuring cylinder
- (c) one 250 cm<sup>3</sup> conical flask
- (d) 50 cm<sup>3</sup> of an aqueous solution of sodium thiosulfate, Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O, of concentration 0.05 mol/dm<sup>3</sup>, labelled **sodium thiosulfate solution**

- [MH] (e) 20 cm<sup>3</sup> of sulfuric acid of concentration 1.0 mol/dm<sup>3</sup>, labelled **sulfuric acid**
- (f) at least 100 cm<sup>3</sup> distilled water, as well as access to water and distilled water
  - (g) 10 cm<sup>3</sup> of hydrogen peroxide of concentration 2.5 vol., labelled **hydrogen peroxide solution**  
This is prepared by diluting 20 vol. hydrogen peroxide by a factor of 8. **This solution should be freshly prepared.**  
(20 vol. hydrogen peroxide is equivalent to 6% hydrogen peroxide or 1.67 mol/dm<sup>3</sup>)
  - (h) 10 cm<sup>3</sup> of aqueous potassium iodide, KI, of concentration 1.0 mol/dm<sup>3</sup>, labelled **aqueous potassium iodide**
  - (i) starch solution, labelled **starch solution**
  - (j) burette with stand and clamp
  - (k) a stop-clock or timer which can measure to the nearest second; candidates may use their own watches if they are suitable
  - (l) funnel for filling burette
  - (m) white tile

**For Question 2**

Each candidate will require

- [HH]** (a) a stoppered test-tube containing about 0.4 g of sodium sulfite,  $\text{Na}_2\text{SO}_3$ , labelled **solid E**
- (b) a stoppered test-tube containing about 0.4 g of urea,  $\text{CO}(\text{NH}_2)_2$ , labelled **solid F**
- (c) 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.*
- (d) rack of six test-tubes and stoppers to fit
- (e) two boiling tubes
- (f) filter papers
- (g) distilled water
- (h) copper(II) sulfate of concentration  $0.05 \text{ mol/dm}^3$
- (i) aqueous hydrochloric acid of concentration  $2 \text{ mol/dm}^3$
- (j) litmus papers
- (k) aqueous barium nitrate of concentration suitable to give a positive sulfate test
- [MH]** (l) aqueous nitric acid of concentration  $0.5 \text{ mol/dm}^3$
- [C]** (m) aqueous sodium hydroxide of concentration  $1 \text{ mol/dm}^3$
- (n) aqueous potassium manganate(VII) of concentration  $0.01 \text{ mol/dm}^3$
- (o) two spatulas
- (p) splints
- (q) test-tube holder
- (r) Bunsen burner and matches
- (s) teat pipettes

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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