



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

**CHEMISTRY**

**0620/51**

Paper 5 Practical Test

**October/November 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.

<b>C</b>	corrosive	<b>MH</b>	moderate hazard
<b>HH</b>	health hazard	<b>T</b>	acutely toxic
<b>F</b>	flammable	<b>O</b>	oxidising
<b>N</b>	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.

email info@cie.org.uk  
phone +44 1223 553554  
fax +44 1223 553558

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.

**Question 1**

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

- (a) 100 cm<sup>3</sup> of 3 volume hydrogen peroxide, H<sub>2</sub>O<sub>2</sub>, labelled **solution S**  
(3 volume hydrogen peroxide is equivalent to 0.25 mol/dm<sup>3</sup>.)  
**This solution must be freshly prepared from newly purchased hydrogen peroxide.**
- (b) 100 cm<sup>3</sup> of acidified potassium iodide, KI, labelled **solution T** prepared by adding 8.3g of potassium iodide to 100 cm<sup>3</sup> of 1.0 mol/dm<sup>3</sup> hydrochloric acid and diluting to 1 dm<sup>3</sup> with distilled water  
**This solution should be freshly prepared.**
- (c) 100 cm<sup>3</sup> of sodium thiosulfate, Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>·5H<sub>2</sub>O, of concentration 0.01 mol/dm<sup>3</sup> labelled **sodium thiosulfate solution**
- (d) 1% starch solution
- (e) access to water and distilled water
- (f) 10 cm<sup>3</sup> measuring cylinder labelled **A**
- (g) 25 cm<sup>3</sup> measuring cylinder labelled **B**
- (h) 10 cm<sup>3</sup> measuring cylinder labelled **C**
- (i) 100 cm<sup>3</sup> conical flask
- (j) white tile
- (k) Bunsen burner and matches
- (l) tripod and gauze
- (m) teat pipette suitable for measuring 1 cm<sup>3</sup> of liquid
- (n) stirring thermometer, –10 °C to +110 °C at 1 °C graduations
- (o) stop-clock or timer which can measure to an accuracy of 1 s

**Question 2**

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

**[MH][O] (a)** 0.4 g of anhydrous lithium nitrate,  $\text{LiNO}_3$ , in a stoppered test-tube labelled **solid P**

**[MH] (b)** 0.6 g of hydrated manganese(II) chloride,  $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$ , in a stoppered test-tube labelled **solid Q**

**(c)** aqueous barium nitrate of sufficient concentration to give a positive sulfate test

**[MH][N] (d)** aqueous silver nitrate of sufficient concentration to give a positive halide test

**[MH] (e)** aqueous nitric acid of concentration  $0.5 \text{ mol/dm}^3$

**[C] (f)** aqueous sodium hydroxide of concentration  $1 \text{ mol/dm}^3$

**(g)** small piece of aluminium foil, approximately  $1 \text{ cm} \times 1 \text{ cm}$  in size

**(h)** distilled water

**(i)** pH indicator papers and chart

**(j)** red and blue litmus paper

**(k)**  $10 \text{ cm}^3$  measuring cylinder

**(l)** apparatus for a flame test

**(m)** Bunsen burner and matches

**(n)** rack of test-tubes

**(o)** hard glass test-tube

**(p)** boiling tube

**(q)** stopper to fit test-tubes

**(r)** test-tube holder

**(s)** teat pipettes

**(t)** spatula

**N.B.** Small amounts of ammonia **[C][T][N]**, which can cause respiratory distress in some people, may be produced. **The laboratory must be well ventilated.**

**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*



- 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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