

**CHEMISTRY**

**0620/52**

Paper 5 Practical Test

**May/June 2017**

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.

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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 apparatus and chemicals. The labels of **solution B** and **solution C** must **not** include concentrations.

- (a) 1 × 25 cm<sup>3</sup> measuring cylinder
- (b) 1 × 50 cm<sup>3</sup> burette with stand and clamp
- (c) 1 × 250 cm<sup>3</sup> conical flask
- (d) 150 cm<sup>3</sup> of aqueous potassium manganate(VII), KMnO<sub>4</sub>, of concentration 3.2 g/dm<sup>3</sup> labelled **solution A**
- (e) 50 cm<sup>3</sup> of aqueous ammonium iron(II) sulfate, (NH<sub>4</sub>)<sub>2</sub>Fe(SO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O, of concentration 20 g/dm<sup>3</sup> made by dissolving 20 g of the salt in 100 cm<sup>3</sup> of sulfuric acid of concentration 1 mol/dm<sup>3</sup>, and diluting to 1000 cm<sup>3</sup>, labelled **solution B**
- (f) 50 cm<sup>3</sup> of aqueous ammonium iron(II) sulfate of concentration 60 g/dm<sup>3</sup> made by dissolving 60 g of the salt in 100 cm<sup>3</sup> of sulfuric acid of concentration 1 mol/dm<sup>3</sup>, and diluting to 1000 cm<sup>3</sup>, labelled **solution C**
- (g) access to water and distilled water
- (h) white tile
- (i) funnel for filling burette

Note: Ammonium iron(II) sulfate is used because it is more stable than iron(II) sulfate. The Question Paper will refer to **solution B** and **solution C** as iron(II) sulfate.

**Question 2**

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

(a) 1 g of hydrated sodium thiosulfate,  $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ , in a stoppered test-tube, labelled **solid E**

**[HH]** (b) 0.5 g of lithium chloride,  $\text{LiCl}$ , in a stoppered test-tube, labelled **solid F**

(c) 1 × thermometer,  $-10^\circ\text{C}$  to  $+110^\circ\text{C}$  at  $1^\circ\text{C}$  graduations

(d) apparatus for a flame test

(e) distilled water

(f) rack of six test-tubes

(g) stopper to fit test-tubes

(h) 1 × boiling tube

**[MH]** (i) acidified aqueous potassium manganate(VII) of concentration  $0.002 \text{ mol/dm}^3$

(j) aqueous potassium iodide of concentration  $0.1 \text{ mol/dm}^3$

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

(l) aqueous copper(II) sulfate of concentration  $0.02 \text{ mol/dm}^3$

(m) starch solution

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

(o) strip of filter paper

**[C]** (p) dilute nitric acid of concentration  $1 \text{ mol/dm}^3$

(q) dilute hydrochloric acid of concentration  $1 \text{ mol/dm}^3$

(r) 1 ×  $10 \text{ cm}^3$  measuring cylinder

(s) stopclock or timer which can measure to an accuracy of 1 s

(t) teat pipettes

(u) 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*



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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