

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

**CHEMISTRY**

**0620/05**

Paper 5 Practical Test

May/June 2006

**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 page 2 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 to be 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. Safety spectacles may be provided if considered necessary.

Supervisors are advised to remind candidates that all substances in the examination should be treated with caution. Please also see under 'General Apparatus' on the use of pipette fillers and safety goggles.

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 substance

**F** = highly flammable substance

**H** = harmful or irritating substance

**O** = oxidising substance

**T** = toxic substance

Hazard data sheets should be available from your suppliers.

If you have any queries regarding these Instructions, please contact CIE

by e-mail: [International@cie.org.uk](mailto:International@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.

This document consists of **5** printed pages and **3** blank pages.

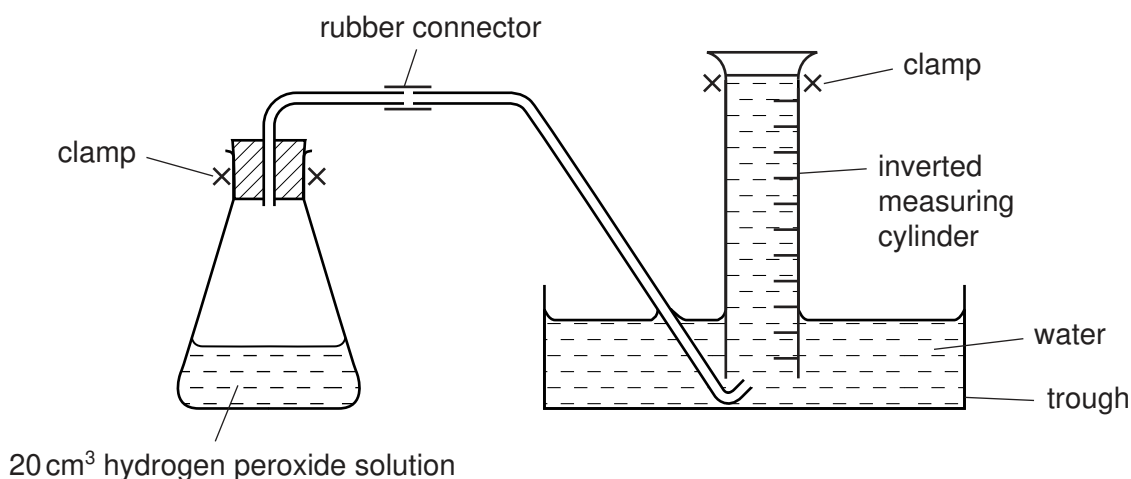


## 1 For Question 1

Each candidate will require:

- [H] (a) about 100 cm<sup>3</sup> of aqueous hydrogen peroxide of concentration 5 volume (1.5% w/v), labelled solution **A**;
- [H] (b) about 5 g of manganese(IV) oxide powder;
- (c) distilled water;
- (d) (i) two measuring cylinders, one to measure 20 cm<sup>3</sup> of liquid and one to collect 50 cm<sup>3</sup> of gas;
- (ii) one conical flask, 100 cm<sup>3</sup>, with bung, rubber connector and delivery tube;
- (iii) two clamps, one to support the conical flask and one to support the inverted measuring cylinder;
- (iv) trough, or other suitable container, of water;

The students will need to set up this apparatus as below.



- (e) a stop clock or access to a timer with a second hand;
- (f) one spatula;  
1 spatula measure of manganese(IV) oxide added to 20 cm<sup>3</sup> of 5 volume hydrogen peroxide should produce at least 20 cm<sup>3</sup> and not more than 40 cm<sup>3</sup> of gas in 20 seconds;
- (g) splints;
- (h) Bunsen burner;
- (i) a test-tube.

**2 For Question 2**

Each candidate will require:

- [H] (a) a mixture of about 0.5 g of basic zinc carbonate ( $[\text{ZnCO}_3]_2[\text{Zn}(\text{OH})_2]_3$ ) and 0.3 g of zinc sulphate crystals ( $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ ) labelled 'mixture of **B** and **C**';
- [C] (b) aqueous ammonia solution of concentration  $2 \text{ mol/dm}^3$ ;
- [C] (c) aqueous sodium hydroxide of concentration  $2 \text{ mol/dm}^3$ ;
- [T] (d) barium nitrate solution of sufficient concentration to give a positive sulphate test, or barium chloride solution labelled as 'barium nitrate';
- [C] (e) aqueous hydrochloric acid of concentration  $2 \text{ mol/dm}^3$ ;
- [C] (f) aqueous nitric acid of concentration  $1 \text{ mol/dm}^3$ ;
- [C] (g) aqueous silver nitrate of concentration  $1 \text{ mol/dm}^3$ ;
- (h) limewater, bung and delivery tube to pass gas;
- (i) dry blue cobalt chloride paper;
- (j) rack of at least six test-tubes including one hard-glass test-tube;
- (k) distilled water;
- (l) Bunsen burner, as used in Question 1;
- (m) teat pipettes;
- (n) splints;
- (o) boiling tube and cork/bung;
- (p) spatula;
- (q) one measuring cylinder to measure  $25 \text{ cm}^3$  of liquid; this can be the same as used in Question 1;
- (r) small beaker;
- (s) one filter funnel;
- (t) filter paper.

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

MAY/JUNE 2006

**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 due to apparatus or materials.

Other cases of individual hardship, e.g. illness, temporary disability, should be reported direct to UCLES 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 as to maintain fully the security of the examination.

NAME .....  
(in block capitals)

SIGNED ..... (Principal)

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