



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CHEMISTRY

0620/51

Paper 5 Practical Test

May/June 2011

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 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

N = harmful to the environment

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,

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.



For Question 1

Each candidate will require

- (a) one 50 cm³ measuring cylinder
- (b) one 50 cm³ burette
- (c) one or more 250 cm³ conical flasks
- (d) 100 cm³ of aqueous potassium manganate(VII), KMnO₄, of concentration 3.2 g/dm³, labelled **solution A**
- (e) 100 cm³ of aqueous potassium manganate(VII), KMnO₄ of concentration 6.4 g/dm³, labelled **solution B**
- (f) 100 cm³ of aqueous hydrogen peroxide, H₂O₂. This solution should be freshly made, i.e. the day before, and be of concentration 35 cm³ of 20 volume hydrogen peroxide in 1 dm³ of 0.5 mol/dm³ sulfuric acid, labelled **solution C**. (20 volume hydrogen peroxide is equivalent to 6% hydrogen peroxide or 1.667 M)
- (g) one spatula of manganese(IV) oxide in a test-tube, labelled **manganese oxide**
- (h) access to water and distilled water
- (i) one 10 cm³ measuring cylinder
- (j) a white tile
- (k) a Bunsen burner and matches
- (l) splints
- (m) a spatula
- (n) test-tube

25 cm³ of solution C should require approximately 32 cm³ of solution A for the end-point.

For Question 2

Each candidate will require

- [F][H] (a) a stoppered test-tube containing about 10 cm³ of ethanol, labelled **liquid M**
- (b) a stoppered test-tube containing about 10 cm³ of aqueous potassium iodide, labelled **liquid N**, of concentration 0.1 mol/dm³
- [N][H] (c) two stoppered, dry test-tubes, each containing one crystal of iodine, labelled **iodine**
- The Supervisor should advise candidates not to touch the crystals.**
- (d) distilled water
- (e) splints
- (f) a rack of test-tubes
- (g) cork or bung to fit test-tubes
- (h) two dry watch glasses
- (i) aqueous copper sulfate of concentration 0.1 mol/dm³
- [N][H] (j) aqueous silver nitrate of suitable concentration to give a positive halide test
- [C] (k) aqueous nitric acid of concentration 1 mol/dm³
- [N][F][H] (l) about 1 cm³ of cyclohexane, labelled **liquid T**, in a stoppered test-tube
- (m) a 10 cm³ measuring cylinder
- (n) a Bunsen burner and matches
- (o) teat pipettes

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

JUNE 2011

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 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 so as to maintain fully the security of the examination.

NAME
(in block capitals)

SIGNED (Principal)

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