

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

**CO-ORDINATED SCIENCES**

**0654/05**

Paper 5 Practical Test

October/November 2006

**CONFIDENTIAL INSTRUCTIONS**

**Great care should be taken to ensure that any confidential information given does not reach the candidates either directly or indirectly.**

**The Supervisor's attention is drawn to the form on page 4 which must be completed and returned with the scripts.**

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 nature of the query and the syllabus number quoted above.

This document consists of 4 printed pages.



### Instructions for preparing apparatus

These instructions detail the apparatus, reagents and specimens required by each candidate for each experiment in this paper. A summary of the questions that will be presented to the candidates is included, where appropriate, to allow the teacher to test the apparatus appropriately. **No access is permitted to the question paper in advance of the examination session.**

It is assumed that the ordinary apparatus of a science laboratory will be available, including a supply of purified water (distilled or deionised).

It is expected that candidates will have either a watch or sight of a clock with second hand.

If arrangements are made for different sessions for different groups of candidates, care must be taken to ensure that the different groups of candidates are effectively isolated so that **no information passes between them.**

#### For Question 1

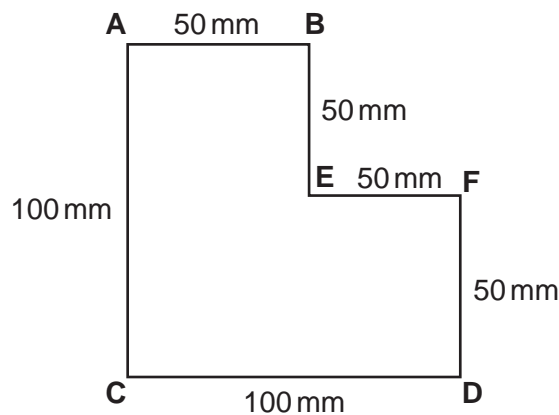
*Each candidate will require:*

- (i) 2 test-tubes of size 125 x 15 mm;
- (ii) a test-tube rack containing at least 2 positions for large test-tubes of size 150 x 25 mm. If this is not available candidates should be supplied with clamps to support their tubes;
- (iii) enough dry cotton wool to wrap around the two test-tubes to provide 0.5 cm thickness of insulation;
- (iv) 4 thin elastic bands to secure the cotton wool insulation;
- (v) 2 thermometers, 0 – 110 °C;
- (vi) access to cold water;
- (vii) a supply of boiling water. Each candidate will request the water after they have set up their apparatus. Ideally the water should be boiled in a kettle and dispensed as required;
- (viii) a stopwatch or a clear view of a clock with a second hand.

#### For Question 2

*Each candidate will require:*

- (i) A piece of card about 130 mm square. Candidates will be required to cut out an L-shaped piece from the card using the measurements specified in Fig. 2.1;



**Fig. 2.1**

- (ii) drawing pin;
- (iii) apparatus to enable the card and plumb-line to be suspended from the drawing pin. A cork held in a clamp would be suitable;
- (iv) scissors;
- (v) about 300 mm thread with weight attached to act as a plumb-line;
- (vi) set square or protractor;
- (vii) ruler graduated in mm;
- (viii) stand.

Candidates may ask without penalty for another piece of card. The supervisor could provide a prepared card, but this must be recorded and the candidate told that they will be penalised.

### For Question 3

*Each Candidate will require:*

- (i) 8 test-tubes 125 x 15 mm. If fewer are provided, candidates will need to wash out some of those used;
- (ii) filter funnel and paper;
- (iii) about 25 cm<sup>3</sup> aqueous ammonia;
- (iv) about 1.5 g ammonium chloride;
- (v) about 1 g of anhydrous sodium carbonate;
- (vi) litmus paper;
- (vii) a Bunsen burner or other source of heat;
- (viii) access to the normal reagents used for testing for chloride and sulphate;
- (ix) about 2 g of each of the following solids:
  - citric acid, labelled **solid A**
  - calcium hydroxide, labelled **solid B**
  - hydrated zinc sulphate, labelled **solid C**

Candidates may be provided with further amounts of these solids if required.

Spare materials and equipment should be made available and can be provided without penalty.

**Candidates should be made aware of this.**

*Information required from the Supervisor:*

**The Supervisor is asked to carry out the experiments and to enter the results on a spare copy of the examination paper, clearly marked 'Supervisor's Results' and showing the Centre number. This should be returned with the scripts. Failure to do so may cause the candidates to be penalised.**

**This form must be completed and returned in the envelope with the scripts together with the seating plan and the Supervisor's Results mentioned on page 3.**

**October/November 2006**

*General*

The Supervisor is invited to give details of any difficulties experienced by particular candidates giving their names and candidate numbers. These should include reference to:

- (a) difficulties due to faulty apparatus;
- (b) accidents to apparatus or materials;
- (c) physical handicaps, e.g. short sight, colour blindness;
- (d) any other information that is likely to assist the Examiner, especially if this cannot be discovered in the scripts;
- (e) any help given to a candidate.

*The Supervisor is asked to supply the following information:*

Plan of work benches, giving details by candidate numbers of the places occupied by the candidates for each session and a copy of the 'Supervisor's Results'.

NAME OF CENTRE .....

SIGNED .....  
*Supervisor*

CENTRE NUMBER .....

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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