



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

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**BIOLOGY**

**0610/51**

Paper 5 Practical Test

**October/November 2011**

CONFIDENTIAL INSTRUCTIONS

**1 hour 15 minutes**

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

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**READ THESE INSTRUCTIONS FIRST**

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

by email    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.

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This document consists of **6** printed pages and **2** blank pages.



**READ THESE INSTRUCTIONS FIRST**

These instructions give details of the apparatus 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 Biology teacher to test the apparatus appropriately. **Testing must be done out of sight of all candidates. No access to the question paper is permitted in advance of the examination.** Centres are reminded that candidates are expected to follow the instructions on the question paper and record all their results. They will not be penalised if these results are not what they expect.

The Supervisor should make sure the Supervisor's Report is fully completed and a copy is enclosed with each packet of scripts.

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

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.**

**All specimens should carry only the code letters and numbers as indicated and their identity should not be revealed to the candidates.**

Supervisors should ensure that all specimens have the correct identity attached to the specimen and that these are **not** removed during the examination.

If a candidate breaks any of the apparatus, or loses any of the material supplied, the matter should be rectified and a note made in the Supervisor's Report.

Supervisors are advised to remind candidates that **all** substances in the examination should be treated with caution. Pipette fillers and safety goggles should be used where necessary.

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.

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

**N** = harmful to the environment

Centres are reminded that they are **not** permitted to open the question paper envelopes before the examination.

If there are any difficulties with any aspect of setting up this practical examination that the Centre is not able to resolve, it is essential for Centres to contact the Product Manager as soon as possible by e-mail to [international@cie.org.uk](mailto:international@cie.org.uk), by fax to +44 1223 553558 or by phone to +44 1223 553554.

### Question 1

Each candidate should be provided with:

- (i) one large test-tube with bung and glass tube inserted through the bung (rubber not cork – as it needs to be gas proof), as labelled **A** on Fig. 1.1;
- (ii) glass tubing (preferably capillary tube) connected by two short lengths of plastic tubing;
- (iii) one large test-tube containing water, as labelled **B** on Fig. 1.1;
- (iv) glass tubing (delivery tube) connected so that its end is below the water level in test-tube **B**;

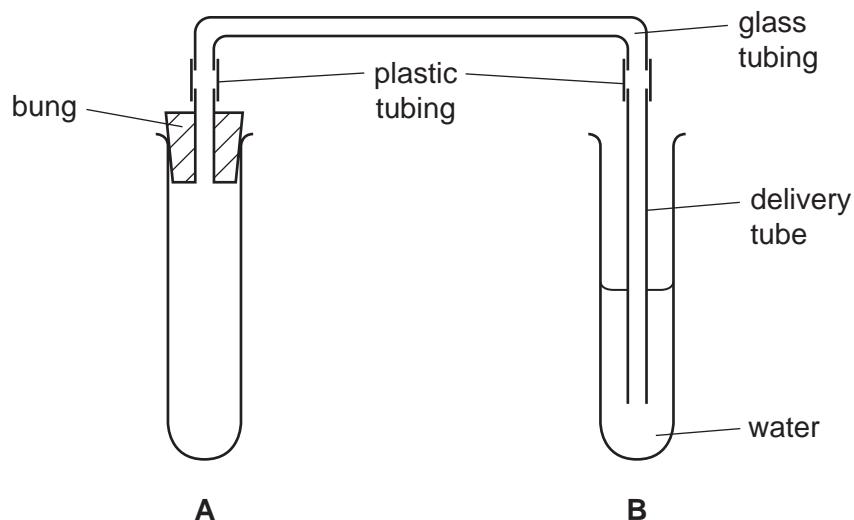


Fig. 1.1

The diagram above shows the apparatus set up. This is for **reference only**. Candidates will be setting up the apparatus themselves.

- [H] (v) three test-tubes with bungs - each containing 5 cm<sup>3</sup> 3% of 20 v/v hydrogen peroxide (freshly prepared the previous day), labelled **hydrogen peroxide solution**;

When preparing the bulk solution prior to dispensing into test-tubes, add a drop of detergent to the mixture.

- (vi) safety equipment for eye protection, such as safety glasses;
- (vii) plastic gloves;
- (viii) 1 cm thick transverse slice of sweet potato, with the outer skin intact and preferably of the yellow / orange variety. The cross section of the slice should be at least 5 cm × 3 cm and it should be freshly prepared no more than 1 hour before the examination.
- (ix) means of cutting a 1 cm<sup>3</sup> cube, e.g. scalpel or small knife;
- (x) view of a clock or timer that allows the candidate to time a minute accurately;
- (xi) paper tissues / towels;
- (xii) empty container, labelled **waste washings**;
- (xiii) supply of water to rinse tubes;
- (xiv) means to support tubes such as test-tube rack or empty tins;
- (xv) ruler with a mm scale.

**Question 2**

Each candidate should be provided with:

- (i) three large test-tubes of equal size;
- (ii) thermometer ( $-10^{\circ}\text{C}$  to  $110^{\circ}\text{C}$ , graduated in  $1^{\circ}\text{C}$  intervals);
- (iii) one paper tissue / towel approximately  $15\text{ cm} \times 10\text{ cm}$ ;
- (iv) one piece of aluminium foil approximately  $15\text{ cm} \times 10\text{ cm}$ ;
- (v) two small elastic bands;
- (vi) view of a clock or timer that allows a candidate to time 6 minutes accurately;
- (vii) means of supporting the three large test-tubes e.g. test-tube rack or three containers so the test-tubes do not touch each other;
- (viii) a supply of hot water approximately  $70^{\circ}\text{C}$  to fill the test-tubes when required;

The candidates have been instructed to raise their hands when they have reached this stage.

- (ix) two feathers: downy feather labelled **W1**, and flight feather from tail or wing labelled **W2**.





This form should be completed and sent to the Examiner with the scripts.

**SUPERVISOR'S REPORT ON PRACTICAL BIOLOGY**

**IGCSE**

**October/November Session 2011**

*The Supervisor or Teacher responsible for the subject should provide the following information.*

- 1** Was any difficulty experienced in providing necessary material? If so, give brief details.

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- 2** Give details of any difficulties experienced by particular candidates, giving names and candidate numbers. Reference should be made to:

- (a)** difficulties with specimens or materials;

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- (b)** accidents to apparatus or materials;

.....

- (c)** any other information that is likely to assist the Examiner, especially if this cannot be discovered from the scripts.

.....

Other cases of individual hardship, e.g. illness or disability, should be reported direct to CIE on the normal 'Special Consideration Form' as detailed in Part 6 of the Handbook for Centres.



- 3 A plan of work benches, giving details of the candidate numbers for the places occupied by the candidates for each session, must be enclosed with the scripts. The space below can be used for this, or it may be on separate paper.

**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.

Signed .....

Name (in block capitals) .....

Centre number .....

Centre name .....

If scripts are required to be dispatched in more than one packet it is essential that a copy of the relevant report and the appropriate seating plan(s) are inside **each packet**.



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