



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

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**BIOLOGY**

**0610/53**

Paper 5 Practical Test

**October/November 2012**

CONFIDENTIAL INSTRUCTIONS

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

\* 3 2 5 6 9 5 7 8 7 9 \*

If you have any problems or queries regarding these Instructions, please contact Cambridge  
by email [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 **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 **email** 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) 25 cm<sup>3</sup> fresh milk in a container, labelled **milk** [milk can be milk from cows / goats / sheep, whichever type is available]
- (ii) 10 cm<sup>3</sup> rennet essence / vegerennin / fromase / rennin prepared as per the instruction on product and provided in a container such as a beaker or cup, labelled **enzyme**

This enzyme can be purchased from some food stores, science providers or dairy industry providers. It needs to be kept cool but not frozen prior to use. **It is important that the times** for clotting are tried out before the examination using 5 cm<sup>3</sup> fresh milk mixed with 1 cm<sup>3</sup> enzyme in a Petri dish kept at 40 °C. When gently rocked, small clots will appear. Clotting time should be no longer than 2 minutes. If longer, adjust enzyme concentration by making more concentrated.

- (iii) five test-tubes
- (iv) means of supporting five test-tubes, e.g. test-tube rack
- (v) means of measuring 5 cm<sup>3</sup>, e.g. syringe
- (vi) means of measuring 1 cm<sup>3</sup>, e.g. syringe
- (vii) container of water at 40 °C to support tubes and act as a water bath, such as a beaker which will not easily tip over
- (viii) means of rinsing tubes, and supply of water
- (ix) paper towels
- (x) timing device or view of clock with second hand
- (xi) means of labelling test-tubes
- (xii) means of filtering the clotted milk such as a filter paper and funnel  
It is important that the means of filtering will fit in and allow filtering into a test-tube.
- (xiii) wooden spill / splint or plastic spoon to lift the clots of milk
- [H] (xiv) biuret reagent to be supplied in usual dispenser, labelled **biuret solution**
- (xv) Benedict's solution to be supplied in usual dispenser, labelled **Benedict's solution**

The Supervisor (**not** the Invigilator) is expected to carry out the practical aspects of **Question 1** and record their results in the space provided in the Supervisor's Report. This must be done during the examination, using the same apparatus and reagents as the candidates but out of sight of candidates.

**Question 2**

- (i) half an onion cut vertically, wrapped in cling film and labelled **Y**  
This should be presented on a white tile. It is important that it is freshly cut and has not dried out.
- (ii) dilute iodine solution to be supplied in usual dispenser, labelled **iodine solution**, with means of dropping onto specimen **Y**
- (iii) hand lens (at least  $\times 6$ )
- (iv) small pair of scissors or small knife

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

**SUPERVISOR'S REPORT ON PRACTICAL BIOLOGY**

**IGCSE**

**October/November Session 2012**

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

- 1** Was any difficulty experienced in providing necessary materials? 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;

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- (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 Cambridge on the normal 'Special Consideration Form' as detailed in the Handbook for Centres.

- 3** During the examination, the Supervisor should, **out of sight of the candidates**, carry out **Question 1**, using the same solutions and reagents as the candidates. Results should be recorded in the space on page **8** (**not** on a spare Question Paper). The invigilator should **not** carry out **Question 1**.



Please record the range of the room temperature in the laboratory during the examination.

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- 4 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.

**Declaration** (to be signed by the Principal or the Examinations Officer)

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 despatched in more than one packet, it is essential that a copy of the Supervisor's Report and the appropriate seating plan(s) are inside **each packet**.



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