



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

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**BIOLOGY**

**0610/51**

Paper 5 Practical Test

**May/June 2010**

CONFIDENTIAL INSTRUCTIONS

**1 hour**

**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**

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

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

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

### Question 1

Each candidate must be provided with:

- (i) 30 cm ruler showing mm
- (ii) two lengths of adhesive tape, 10 cm
- (iii) a simple stand
- (iv) two metal paper clips approximately 45 mm in size, bent to form a double hook, as shown in Fig. 1.1

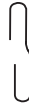


Fig. 1.1

- (v) A cross section of a large artery to be labelled **S1**. The cross-section should be approximately 5 mm in length.

The artery can be obtained from a butcher or supermarket attached to various organs, such as hearts from sheep or goats. It must be fresh, not preserved. Wash carefully and clean any extra tissue and blood. To prevent drying out, the pieces of **S1** can be wrapped in moist tissue or plastic and provided in a dish.

- (vi) 5 × 10 g metal weights  
This could be a hanger with a mass of 10 g plus four weights. If metal weights are not available, they can be made of plasticine and moulded so there is a central hole to suspend them from the paper clip.
- (viii) A supply of plastic gloves for candidates who wish to use them

Fig. 1.2 illustrates the apparatus as it will be set up by the candidates.

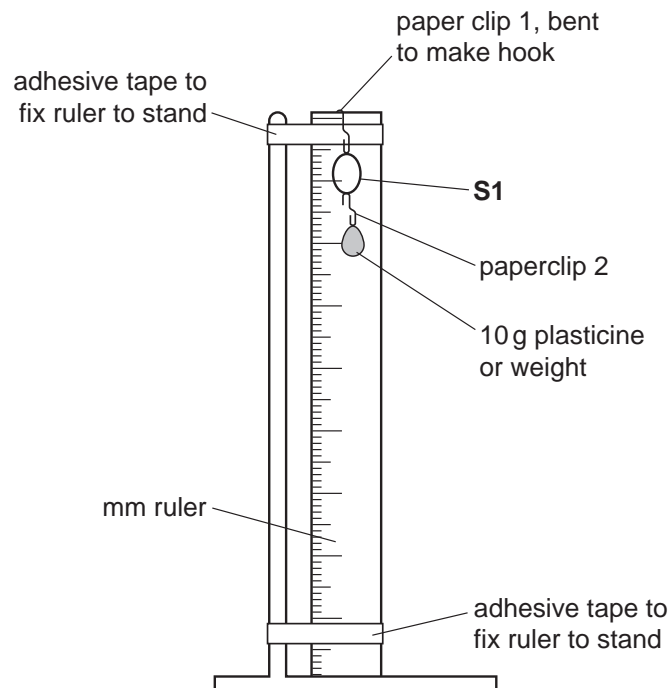


Fig. 1.2

- (vii) A medium (HB) pencil that will leave clear grey / black marks on the paper, sharpened.

**Question 2**

Each candidate will need to be provided with:

- (i) 1 cm transverse slice of sweet potato tuber with the outer skin intact, labelled **S2**.  
This should be provided on a shallow dish / watch glass / wooden board.
- (ii) 1 cm transverse slice of Irish potato tuber with the outer skin intact, labelled **S3**.  
This should be provided on a shallow dish / watch glass / wooden board.
- (iii) sharp knife or scalpel
- (iv) white tile
- (v) iodine solution in a shallow dish / watch glass
- (vi) forceps
- (vii) 4 test-tubes
- (viii) test-tube holder or rack to support the test-tubes
- (ix) water bath for hot water  
A suitable container to take a supply of hot water can be used and filled when candidates are ready.
- (x) Benedict's solution (or alternative) and means of dispensing, labelled accordingly.
- (xi) 10 cm<sup>3</sup> syringe or small measuring cylinder
- (xii) Biuret reagent(s) and means of dispensing, labelled accordingly.

The supervisor should test the material for **S2** and **S3** for reducing sugar content and protein content and include observations on the Supervisor's Report.

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

**REPORT ON PRACTICAL BIOLOGY**

**IGCSE**

**May/June Session 2010**

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

- 1** Please state the colours produced by **S2** and **S3** when tested for reducing sugar.

**S2** .....

**S3** .....

- 2** Please state the colours produced by **S2** and **S3** when tested for the presence of protein.

**S2** .....

**S3** .....

- 3** Was any difficulty experienced in providing the necessary materials? If so, give brief details.

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

**(a)** difficulties arising from faulty specimens;

**(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.

**Information that applies to all candidates need only be given once.**

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.



- 5 A plan of work benches, giving details of the candidate numbers of 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 by CIE to be despatched in more than one envelope, it is essential that a copy of the relevant Supervisor's report and the appropriate seating plan(s) are inside **each envelope**.

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