



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

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**BIOLOGY**

**0610/51**

Paper 5 Practical Test

**May/June 2011**

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 should be provided with:

- (i) solutions of bacterial amylase **R1**, **R2** and **R3**

Prepare the bacterial amylase solutions as follows:

**R3**, at least 5 cm<sup>3</sup> of a 1.0 % solution of bacterial amylase in a beaker or shallow container, labelled **R3**.

This is the concentration supplied.

**R2**, at least 5 cm<sup>3</sup> of a 0.5 % solution of bacterial amylase in a beaker or shallow container, labelled **R2**.

This is prepared by starting with 50 cm<sup>3</sup> of a 1.0 % solution of bacterial amylase and making up to 100 cm<sup>3</sup> with distilled water.

This is sufficient for 20 candidates.

**R1**, at least 5 cm<sup>3</sup> of a 0.25 % solution of bacterial amylase in a beaker or shallow container, labelled **R1**.

This is prepared by starting with 50 cm<sup>3</sup> of a 0.5 % solution of bacterial amylase and making up to 50 cm<sup>3</sup> with distilled water.

This is sufficient for 20 candidates.

- (ii) Iodine solution can be prepared by dissolving 2 g of potassium iodide in 80 cm<sup>3</sup> of distilled water and making up to 100 cm<sup>3</sup> with distilled water. Then add 1 g of iodine crystals and mix thoroughly. From this stock solution prepare a 0.01 % solution by taking 1 cm<sup>3</sup> of the stock solution and adding 80 cm<sup>3</sup> distilled water and making up to 100 cm<sup>3</sup> with distilled water.

This 100 cm<sup>3</sup> of 0.01% iodine solution is sufficient for 10 candidates. This solution is made more dilute than normal iodine solution.

The iodine solution should be supplied to candidates in a bottle or container with a pipette, labelled **iodine solution**.

- (iii) **water**, at least 50 cm<sup>3</sup> of tap water in a beaker or container labelled **water**

- (iv) **paper**, a sheet of plain paper such as starch coated photocopy paper

The Centre should test with the iodine solution to ensure that it stains a light blue.

- (v) Petri dish

- (vi) 5 separated, small circles of **filter** paper, 5 mm diameter (use a standard hole punch to produce these)

Supply to the candidate in a suitable container.

- (vii) test pipette

- (viii) pair of scissors
- (ix) forceps, blunt ended
- (x) container, labelled **for waste**
- (xi) paper towels
- (xii) stop clock, stop watch or sight of a clock (second hand not needed)
- (xiii) safety goggles/glasses
- (xiv) ruler

Once the examination has started, the Supervisor should complete Question 1(a) out of sight of the candidates, using the same materials supplied to the candidates. The Supervisor should report their observations in the space provided on the Supervisor's report form.

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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 2011

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

- 1 Please state the Supervisor's results for Question 1(a).
- 2 Was any difficulty experienced in providing the necessary materials? If so, give brief details.
- 3 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.

- 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. 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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