



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

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**BIOLOGY**

**0610/52**

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.**

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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, 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 ascorbic acid (vitamin C), **S1**, **S2** and **S3**

It is important that the ascorbic acid solutions are prepared within one hour of the start of Question 1.

Prepare the ascorbic acid (vitamin C) solutions as follows:

**S1**, at least 30 cm<sup>3</sup> of a 0.2% solution of ascorbic acid in a covered beaker or container, labelled **S1**.

This solution is prepared by dissolving 0.2 g of ascorbic acid in 80 cm<sup>3</sup> of distilled water in a beaker and making up to 100 cm<sup>3</sup> with distilled water.

**S3**, at least 30 cm<sup>3</sup> of a 0.1% solution of ascorbic acid in a covered beaker or container, labelled **S3**.

This solution is prepared by taking 50 cm<sup>3</sup> of the 0.2% solution of ascorbic acid in a beaker and making up to 100 cm<sup>3</sup> with distilled water.

**S2**, at least 30 cm<sup>3</sup> of a 0.05% solution of ascorbic acid in a covered beaker or container, labelled **S2**.

This solution is prepared by taking 50 cm<sup>3</sup> of the 0.1% solution of ascorbic acid in a beaker and making up to 100 cm<sup>3</sup> with distilled water.

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

- (iii) **iodine solution**, at least 30 cm<sup>3</sup> iodine in potassium iodide solution in a bottle or container with a pipette (teat), labelled **iodine solution**

The potassium iodide solution (1%) is prepared by dissolving 1 g of potassium iodide in 80 cm<sup>3</sup> of distilled water in a beaker and making up to 100 cm<sup>3</sup> with distilled water. Then dissolve 0.5 g of iodine in 100 cm<sup>3</sup> of 1% potassium iodide solution.

The iodine needs to be mixed well to ensure it dissolves.

The iodine solution needs to be freshly made up.

**NB This is not the same concentration of iodine solution which is used for the starch test.**

- (iv) **starch**, at least 20 cm<sup>3</sup> of 0.1% starch suspension in a small beaker or container labelled **starch**

This is prepared by making a stock solution of 1% starch solution by dissolving 1g of starch into a small volume of distilled water and mixing to a paste. Make up to 100 cm<sup>3</sup> with hot distilled water. It will be necessary to heat the solution to dissolve the starch.

To make up the 0.1% starch solution add 10 cm<sup>3</sup> of this stock solution to a beaker, make up to 100 cm<sup>3</sup> with distilled water and mix well. The starch solution must be at room temperature for the examination.

- (v) two 5 cm<sup>3</sup> syringes with the means to wash them out
- (vi) container with tap water, labelled **for washing**
- (vii) container labelled **for waste**
- (viii) paper towels
- (ix) three test-tubes
- (x) test-tube rack or container to hold three test-tubes
- (xi) glass marker pen
- (xii) safety goggles/glasses
- (xiii) ruler

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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. 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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