



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.

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.

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^3 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^3 of distilled water in a beaker and making up to 100 cm^3 with distilled water.

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

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

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

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

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

- (iii) **iodine solution**, at least 30 cm^3 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^3 of distilled water in a beaker and making up to 100 cm^3 with distilled water. Then dissolve 0.5 g of iodine in 100 cm^3 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 cm³ 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 cm³ 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 cm³ of this stock solution to a beaker, make up to 100 cm³ with distilled water and mix well. The starch solution must be at room temperature for the examination.

- (v) two 5 cm³ 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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The Supervisor or Teacher responsible for the subject should provide the following information.

- 1 Please answer question 1(a) and record your results below. Please work out of sight of the candidates.
- 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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