



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

BIOLOGY (US)

0438/53

Paper 5 Practical Test

May/June 2012

CONFIDENTIAL INSTRUCTIONS

1 hour 15 minutes

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 Center 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. Pipet fillers and safety glasses 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

H = harmful or irritating substance

T = toxic substance

F = highly flammable substance

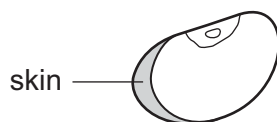
O = oxidising substance

N = harmful to the environment

Question 1

Each candidate should be provided with:

- (i) an eighth of a freshly cut ripe apple wrapped in cling film so that it changes colour as little as possible. Cut as shown below. Label this **S2**



- (ii) a small piece of the **same kind of apple** which has been left out in the air for at least an hour and that has gone brown. Present this on a piece of paper labelled **S1**

Please test in advance that the apple will go brown and leave longer if necessary.

- (iii) Petri dish with lid or two small glass containers
- (iv) glass marking pen
- (v) a slice of a lemon or lime labelled **S3** on a shallow dish
The slice should be large enough to be able to squeeze juice out of it
- (vi) two pieces of blue litmus paper
- (vii) a small container of water, labelled **water**, with a dropper
- (viii) a blunt plastic knife
- (ix) access to a clock or timer that will enable candidates to time 20 min in 5 min intervals
- (x) a white tile

Question 2

Each candidate should be provided with:

- (i) two test-tubes
- (ii) a test-tube rack
- (iii) a test-tube holder
- (iv) hot water provided in an insulated container, such as a styrofoam cup. The temperature of the water should be at least 75 °C. Candidates should be given this hot water when they request it
- (v) Benedict's solution, labelled as **Benedict's solution**
- (vi) 2 slices of banana of thickness 0.5 cm, in a Petri dish, or other shallow container
- (vii) a white tile (this could be the same tile as used for question 1)
- (viii) a knife or scalpel to chop banana slice
- (ix) iodine in potassium iodide solution, labelled as **iodine solution**
- (x) paper towel if needed to wipe tile after chopping banana

Question 3

Each candidate should be provided with:

- (i) ruler in mm

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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 2012

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

- 1 Was there any difficulty experienced in providing necessary material? If so, give brief details.

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- 2 The Supervisor or Teacher responsible for the subject is asked to carry out the experiment on the apple, **S2**, as described in Question 1 and to record any change in the colour of the apple pieces in the table below:

time / minutes	dish 1, apple without citrus juice		dish 2, apple with citrus juice	
	broken surface	cut surface	broken surface	cut surface
5
10
15
20

- 3 Please give the name of the apple variety provided as **S1** and **S2**.

.....



- 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 Centers.

- 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)

Center number

Center name

If scripts are required by CIE to be despatched in more than one packet, it is essential that a copy of the relevant Supervisor's report and the appropriate seating plan(s) are inside each packet.

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