



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

BIOLOGY

0610/52

Paper 5 Practical Test

October/November 2014

CONFIDENTIAL INSTRUCTIONS

Great care should be taken to ensure that any confidential information given does not reach the candidates either directly or indirectly.

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

by e-mail info@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 required by each candidate for each experiment in this paper. A summary of the questions that will be presented to the candidates is included, where appropriate, to allow the Biology Teacher to test the apparatus appropriately. **Testing must be done out of sight of all candidates. No access to the Question Paper is permitted in advance of the examination.** Centres are reminded that candidates are expected to follow the instructions on the Question Paper and record all their results. They will not be penalised if these results are not what they expect.

The Supervisor should make sure that the Supervisor's Report is fully completed and a copy is enclosed with each packet of scripts.

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 the 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

N = harmful to environment

F = highly flammable substance

O = oxidising substance

T = toxic substance

Centres are reminded that they are **not** permitted to open the Question Paper envelopes before the examination.

If there are any difficulties with any aspect of setting up this practical examination that the Centre is not able to resolve, it is essential for Centres to contact the Product Manager as soon as possible by **e-mail** to info@cie.org.uk, by **fax** to +44 1223 553558 or by **phone** to +44 1223 553554.

Question 1

Each candidate should be provided with:

- (i) safety spectacles / goggles
- (ii) four large test-tubes each containing 25 cm^3 of hydrogen peroxide solution, supported vertically in a test-tube rack / suitable container, labelled H_2O_2

The hydrogen peroxide solution should be approximately 4 vol or 1.14% or 0.34 mol dm^{-3} . This can be produced by performing a 5-fold dilution of 20 vol solution. The solution should be freshly prepared for the examination.

- (iii) means of labelling large test-tubes
- (iv) two pieces [$1\text{ cm} \times 1\text{ cm}$] of filter paper soaked in an extract from a **fresh red** bell pepper, *Capsicum annuum*, and presented in a dish, labelled **red**
- (v) two pieces [$1\text{ cm} \times 1\text{ cm}$] of filter paper soaked in an extract from a **fresh green** bell pepper, *Capsicum annuum*, and presented in a dish, labelled **green**

50g of chopped and then crushed pepper should be mixed with 100 cm^3 of distilled water. The pieces of filter paper need to be soaked in the extract for 5 minutes, separated and allowed to dry in the air without warming. It is essential that these are completely dry before being placed in the labelled dishes. A Petri dish or a watch glass is suitable.

The extract soaked filter paper should be prepared as close to the start of the examination as possible.

- (vi) forceps
- (vii) access to paper towels (in case of spillages)
- (viii) timer device or view of a clock with a second hand

Before the examination, the Supervisor must try out this part of the investigation.

The filter paper soaked in the extract of green pepper should rise in the dilute hydrogen peroxide solution in the test-tube in a few seconds. If the process takes longer than 3 minutes, increase the concentration of the hydrogen peroxide solution to a maximum of 2%.

Question 2

Each candidate should be provided with:

- (i) half of a mature carrot, *Daucus carota*, [cut vertically from the leaf attachment area to the tip], to be presented on a white tile and wrapped in clear plastic to prevent drying

The carrot should be 10 to 15 cm in length.

- (ii) hand lens (at least $\times 6$ magnification)
- (iii) dilute iodine solution (iodine in potassium iodide solution at normal concentration supplied for food tests), in usual dispenser with dropping pipette, labelled **iodine solution**
- (iv) ruler (with mm scale)
- (v) access to paper towels (in case of spillages)

The Supervisor (**not** the Invigilator) should carry out the practical aspects of **Question 1** and **Question 2** and record their results in the space provided in the Supervisor's Report. This must be done during the examination, using the same apparatus and reagents as the candidates but **out of sight** of the candidates.

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

SUPERVISOR'S REPORT ON PRACTICAL BIOLOGY

IGCSE

October/November Series 2014

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

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

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

- (a)** difficulties with specimens or materials;

.....

- (b)** accidents to apparatus or materials;

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- (c)** any other information that is likely to assist the Examiner, especially if this cannot be discovered from the scripts.

.....

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 the Handbook for Centres.

- 3** During the examination, the Supervisor should, **out of sight of the candidates**, carry out the practical aspects of **Question 1** and **Question 2**, using the same apparatus and reagents as the candidates. Results should be recorded in the space on page 8 (**not** on a spare Question Paper). Attach extra sheets if necessary.

The Invigilator should **not** carry out **Question 1** or **Question 2**.



- 4 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.

Declaration (to be signed by the Principal or the Examinations Officer)

The preparation of this practical 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 to be dispatched in more than one packet, it is essential that a copy of the Supervisor's Report and the appropriate seating plan(s) are inside **each packet**.

