

**BIOLOGY**

**5090/31**

Paper 3 Practical Test

**May/June 2014**

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.**



If you have any problems or queries regarding these Instructions, please contact CIE  
by e-mail: [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.

## INSTRUCTIONS FOR PREPARING APPARATUS

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. **No access to the question paper is permitted in advance of the examination session.**

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.

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.**

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

**F** = highly flammable substance

**H** = harmful or irritating substance

**O** = oxidising substance

**T** = toxic substance

**N** = harmful to the environment

Centres are reminded that they are **not** permitted to open the question paper envelopes before the examination. There are **no** exceptions to this. Centres are also referred to the Handbook for Centres which covers Security of Question Papers and Examination Materials and Practical Examinations in Science Subjects.

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](mailto:info@cie.org.uk), by fax to +44 1223 553558 or by phone to +44 1223 553554.

## SUPERVISOR'S INSTRUCTIONS – CONFIDENTIAL

## Question 1

Each candidate should be provided with:

- (i) Thin slice of a red onion no more than 2mm in thickness as shown in Fig. 1.1. This must be freshly cut just before the start of the examination, the onion rings to be partially separated and to be presented on a white tile covered in plastic film to prevent drying. Use onions of approximately 5 cm diameter. Remove and discard the outer ring.



Fig. 1.1

- (ii) Scalpel or implement to cut a ring into two parts;
- (iii) Approximately  $25\text{cm}^3$  of distilled water in a half of a Petri dish (9cm diameter), labelled '**distilled water**';
- (iv) Approximately  $25\text{cm}^3$  of 2.0M sucrose solution in a half of a Petri dish, labelled '**sugar solution**';
- (v) Timer or view of a clock.

Supervisor should record the shape of the pieces of onion during the examination period out of sight of the candidates in the spaces provided on the Supervisor's Report.

**Question 2**

Each candidate is expected to be provided with:

- (i) Half of a ripe eating apple, approximately 5 cm to 7 cm at the widest part, cut vertically through the fruit as shown in Fig. 2.1. Wrap in plastic film and present on a white tile.



**Fig. 2.1**

- (ii) Ruler with mm;
- (iii) Scalpel or means to cut part of the apple;
- (iv) Pieces of universal indicator paper and chart;
- (v) Forceps;
- (vi) Paper towels to clear up spills.

Supervisor should record the type of apple provided for the examination.

The Supervisor (not the invigilator) should carry out and report on the colour change on the universal indicator with the cut surface of the apple. This test is expected to be carried out during the examination period out of sight of the candidates and the observation recorded in the space provided on the Supervisor's Report.

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

**SUPERVISOR'S REPORT**

**Cambridge Ordinary Level**

**May/June Session 2014**

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

- 1** Was any difficulty experienced in providing necessary material for Question 1?

.....

Please draw the shape of the pieces of red onion before and after being submerged in the distilled water and sugar solution respectively.

Was any difficulty experienced in providing necessary material for Question 2?

.....

Please identify the type of apple supplied .....

Describe the colour change observed with universal indicator after making contact with the surface of the apple.

Colour .....

- 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;
  - (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 eg. 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.



- 3 A plan of work benches, giving details of the candidate numbers of the places occupied by 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**.

