



Cambridge International Examinations
Cambridge Ordinary Level

BIOLOGY

5090/32

Paper 3 Practical Test

October/November 2017

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 queries regarding these Confidential Instructions, please contact Cambridge 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.

INSTRUCTIONS FOR PREPARING APPARATUS

These Confidential 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.

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 suitable eye protection 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

MH = moderate hazard

HH = health hazard

T = acutely toxic

F = flammable

O = oxidising

N = hazardous to the aquatic 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 should also refer to the Cambridge Handbook.

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 Cambridge as soon as possible by email to info@cie.org.uk, by fax to +44 1223 553558 or by phone on +44 1223 553554.

Question 1

Each candidate to be provided with:

- (i) test-tube rack holding the 5 test-tubes described in (vii), (viii) and (ix)
 - (ii) small measuring cylinder / plastic syringe capable of accurately measuring 5 cm³
 - (iii) large beaker to act as a water bath for the 5 test-tubes
 - (iv) test-tube holder
 - (v) timer or view of a clock showing seconds
 - (vi) supply of hot water (at least 80°C). Candidates have been instructed to raise their hands to indicate when they need hot water, which you should pour into their water bath. **Caution: water will be hot.**
 - (vii) 5 cm³ of each of the following three solutions in labelled test-tubes:
 - 0.2% glucose labelled **A**
 - 0.4% glucose labelled **B**
 - 0.6% glucose labelled **C**
- These test-tubes, and the test-tubes in (viii) and (ix), must have waterproof labelling to withstand heating in a water bath.
- (viii) 5 cm³ of 0.3% glucose in a test-tube labelled **X**
 - (ix) 5 cm³ of distilled water in a test-tube labelled **W**
 - (x) 35 cm³ of Benedict's solution in a beaker labelled **Benedict's solution**

It is important that the glucose solutions are made up accurately.

Start by making up a 1% stock solution of glucose by dissolving 1 g of glucose in distilled water and then making this up to 100 cm³ with distilled water.

To make up a 0.6% solution, add six parts of the 1% stock solution to four parts of distilled water.

To make up a 0.4% solution, add four parts of the 1% stock solution to six parts of distilled water.

To make up a 0.2% solution, add two parts of the 1% stock solution to eight parts of distilled water.

To make up solution **X** (0.3%), add three parts of the 1% stock solution to seven parts of distilled water.

Question 2

Each candidate to be provided with:

- (i) white tile or other suitable cutting surface
- (ii) length of fresh, mature carrot approximately 5 cm long and at least 2 cm in diameter.
This can be cut from a whole carrot up to two hours before the practical. It should be wrapped in a damp paper towel, placed on the white tile and labelled **carrot**.
- (iii) knife or scalpel
- (iv) ruler (mm)

During the examination, the Supervisor (**not** the Invigilator) should, **out of sight of the candidate**, carry out **Question 1(a)** and **Question 1(e)(i)** using the same solutions and reagents as the candidates. These results should be written in the Supervisor's Report, not on a spare question paper.

SUPERVISOR'S REPORT and SEATING PLAN

The Supervisor or teacher responsible for the examination is asked to fill in the Supervisor's Report in these Confidential Instructions. For Centres where more than one script packet is used, there must be a copy of the completed Supervisor's Report and the seating plan in each script packet.

These Supervisor's Reports are essential in order to allow the Examiners to assess all candidates as fairly as possible and should always be completed by every Centre.

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

SUPERVISOR'S REPORT

Cambridge Ordinary Level

October/November 2017

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.

- 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) assistance provided in case of colour blindness;
 - (d) 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 Cambridge on the normal Special Consideration Form.

- 3 During the examination, the Supervisor should, **out of sight of the candidates**, carry out the practical parts of **Question 1**, using the same apparatus and reagents as the candidates. These results should be written in the Supervisor's Report which should be enclosed with the candidates' scripts. If the scripts are in several packets, please ensure that a copy of the Supervisor's Report is enclosed with each packet of scripts.

- 4 Enclose a seating plan of work benches with the scripts, giving details of the candidate numbers for the places occupied by the candidates for each session.

Temperature of examination room °C.

Results for **Question 1(a)**:

test-tube	glucose solution concentration (%)	observations
W	0.0 (distilled water)	
A	0.2	
B	0.4	
C	0.6	
X	unknown	

Results for **Question 1(e)(i)**:

Declaration (to be signed by the Supervisor)

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 to be dispatched in more than one envelope, it is essential that a copy of the relevant Supervisor's Report and the appropriate seating plan(s) are sent inside **each envelope**.