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**BIOLOGY**

**0610/51**

Paper 5 Practical Test

**October/November 2018**

CONFIDENTIAL INSTRUCTIONS

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

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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.

email info@cie.org.uk  
phone +44 1223 553554  
fax +44 1223 553558

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This document consists of **6** printed pages and **2** blank pages.

## READ THESE INSTRUCTIONS FIRST

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. **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 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 suitable eye protection 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:

<b>C</b> corrosive	<b>MH</b> moderate hazard
<b>HH</b> health hazard	<b>T</b> acutely toxic
<b>F</b> flammable	<b>O</b> oxidising
<b>N</b> hazardous to the aquatic environment	

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 Cambridge as soon as possible by **email** to [info@cie.org.uk](mailto: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) 8–10 small grapes, without stalks, in a Petri dish base
- (ii) four test-tubes
- (iii) 20 cm<sup>3</sup> of 2% glucose solution in a container labelled **S**
- (iv) one small empty beaker labelled **grape juice**
- (v) 150 cm<sup>3</sup> of distilled or deionised water in a beaker labelled **distilled water**
- (vi) 100 cm<sup>3</sup> measuring cylinder
- (vii) test-tube rack or other means of supporting test-tubes
- (viii) one large beaker able to hold four test-tubes labelled **water-bath**
- (ix) supply of hot water for the water-bath, the temperature should be approximately 80 °C  
Candidates have been asked to raise their hand when they are ready for the hot water.
- (x) four 5 cm<sup>3</sup> syringes
- (xi) one 1 cm<sup>3</sup> syringe
- (xii) one spatula
- (xiii) one glass rod
- (xiv) means of writing on glass, e.g. waterproof marker pen
- MH (xv) 25 cm<sup>3</sup> of Benedict's solution in a small beaker labelled **Benedict's solution**
- (xvi) a waterproof empty container labelled **waste**
- (xvii) paper towels
- (xviii) view of a clock or timer that allows the candidate to time seconds accurately
- (xix) suitable eye protection

## Preparation of materials

### *2% glucose solution*

Add 50 cm<sup>3</sup> of distilled water to 2 g of glucose powder and stir until dissolved. Make up to 100 cm<sup>3</sup> with distilled water.

The solution can be made 48 hours before the examination and stored in a cool place.

(Candidates will be informed that the concentration of this solution is 20% but should **only** be provided with a 2% solution.)

### *Grapes*

Grapes should be ripe and be able to fit easily into a 100 cm<sup>3</sup> measuring cylinder. Any colour and any type of grape, with or without seeds, can be used.

Before the examination the volume of juice obtained from crushed grapes should be tested. Grapes should have the skin removed and any seeds if present. These grapes should then be crushed using a spatula until as much juice as possible is obtained. The volume of juice should be at least 5 cm<sup>3</sup>. Candidates should be supplied with sufficient grapes to give 5 cm<sup>3</sup> of juice.

### *Benedict's solution MH*

The Benedict's solution that is used for food tests (qualitative) is suitable. This can be purchased from a commercial supplier. The reagent should be fresh and should be stored according to the manufacturer's instructions.

## Question 2

No laboratory equipment required

- (i) ruler marked in mm

The Supervisor (**not** the invigilator) should carry out the practical aspects of **Question 1** and record their results in the space 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 Cambridge with the scripts.**

### SUPERVISOR'S REPORT

*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

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

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**(c)** assistance provided in the case of colour blindness

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**(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 directly to Cambridge 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** 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**.

Question 1 results:

- 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 Supervisor)

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**.