
BIOLOGY

0610/52

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.

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.

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 on 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:

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.

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** to +44 1223 553554.

Question 1

Each candidate should be provided with:

- (i) 30 cm³ of prepared apple juice in a beaker labelled **A**
- MH, HH, C** (ii) 10 cm³ of 5% pectinase solution in a beaker labelled **E**
- (iii) 10 cm³ distilled water in a beaker labelled **W**
- (iv) 30 cm ruler with mm scale
- (v) four test-tubes
- (vi) test-tube rack to hold four test-tubes
- (vii) one large beaker to hold four test-tubes, labelled **water-bath**
- (viii) one 5 cm³ syringe
- (ix) two 1 cm³ syringes
- (x) hot water supplied at 50 °C. Candidates will raise their hands when they are ready for hot water.
- (xi) eye protection and plastic gloves
- (xii) glassware marker pen
- (xiii) timer or view of a clock to measure minutes accurately
- (xiv) paper towels

Question 2

- (i) 30 cm ruler with a mm scale

Preparation of materials**MH, HH, C 5% pectinase**

To make 100 cm³ add 5 cm³ of pectinase stock solution to 95 cm³ of distilled water.

The pectinase enzyme should be freshly purchased and made up as close as possible to the examination and stored in a refrigerator.

Apple juice

Any variety of dessert apple, e.g. Braeburn, Gala or Cox's, will be suitable for preparing the apple juice. Cooking apples or commercially pre-prepared apple juice are not suitable substitutes. As the volume of juice contained in one apple will vary it is essential that the juice extraction process is trialled well before the examination. This will enable you to estimate how many apples will be required to provide sufficient juice for each candidate.

To prepare the apple juice, remove and discard the peel and core from each apple. Chop and crush the apple flesh to form a pulp, this may be done in a food processor or blender. The use of a 'juicer' is not recommended. Use a muslin cloth to strain the apple pulp and collect the juice in a container. Squeeze the pulp in the muslin cloth to extract as much juice as possible. The pulp can be discarded.

The apple juice can be prepared the day before the examination and can be stored in a sealed container in a refrigerator. Allow the apple juice to come to room temperature on the day of the examination and stir before distributing to candidates so that each sample contains any sediment that may be present in the juice.

A trial should be carried out before the practical to ensure that 5 cm³ of apple juice forms a precipitate within ten minutes when 1 cm³ of 5% pectinase is added to it. Adjust the pectinase concentration if necessary to achieve this.

The Supervisor (**not** the Invigilator) is expected to carry out the practical aspects of **Question 1** 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 candidates.

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This form should be completed and returned 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 necessary materials? If so, give brief details.

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.....

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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

.....

- (c) assistance provided in 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).

The Invigilator should **not** carry out any of the practical work.

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 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 packet, it is essential that a copy of the Supervisor's Report and the appropriate seating plan(s) are inside **each packet**.