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Cambridge Assessment International Education

Cambridge O Level

BIOLOGY **5090/31**

Paper 3 Practical Test **May/June 2024**

CONFIDENTIAL INSTRUCTIONS

4135697903

This document gives details of how to prepare for and administer the practical exam.

The information in this document and the identity of any materials supplied by Cambridge International are confidential and must NOT reach candidates either directly or indirectly.

The supervisor must complete the report at the end of this document and return it with the scripts.

INSTRUCTIONS

- If you have any queries regarding these confidential instructions, contact Cambridge International stating the centre number, the syllabus and component number and the nature of the query.
  email info@cambridgeinternational.org
  phone +44 1223 553554

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General information about practical exams

Centres must follow the guidance on science practical exams given in the *Cambridge Handbook*.

Safety

Supervisors must follow national and local regulations relating to safety and first aid.

Only those procedures described in the question paper should be attempted.

Supervisors must inform candidates that materials and apparatus used in the exam should be treated with caution. Suitable eye protection should be used where necessary.

The following hazard codes are used in these confidential instructions, where relevant:

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

Hazard data sheets relating to substances used in this exam should be available from your chemical supplier.

Before the exam

- The packets containing the question papers must **not** be opened before the exam.
- It is assumed that standard school laboratory facilities, as indicated in the *Guide to Planning Practical Science*, will be available.
- Spare materials and apparatus for the tasks set must be available for candidates, if required.

During the exam

- It must be made clear to candidates at the start of the exam that they may request spare materials and apparatus for the tasks set.
- Where specified, the supervisor **must** perform the experiments and record the results as instructed. This must be done **out of sight** of the candidates, using the same materials and apparatus as the candidates.
- Any assistance provided to candidates must be recorded in the supervisor's report.
- If any materials or apparatus need to be replaced, for example, in the event of breakage or loss, this must be recorded in the supervisor's report.

After the exam

- The supervisor must complete a report for each practical session held and each laboratory used.
- Each packet of scripts returned to Cambridge International must contain the following items:
  - the scripts of the candidates specified on the bar code label provided
  - the supervisor's results relevant to these candidates
  - the supervisor's reports relevant to these candidates
  - seating plans for each practical session, referring to each candidate by candidate number
  - the attendance register.

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Specific information for this practical exam

During the exam, the supervisor (**not** the invigilator) must do the experiment in Question 1 and record the results on a spare copy of the question paper, clearly labelled 'supervisor's results'.

Apparatus and materials

Question 1

Each student will require:

(i) insect-pollinated flower of approximately 4–8 cm width, radially symmetrical with between 4 and 6 petals, and large enough to see the petals, carpel(s) and stamens easily.

(ii) white tile

(iii) forceps

(iv) hand lens

(v) 30 cm ruler graduated in mm

(vi) 20 cm^3 of a 10% glucose solution in a small beaker labelled **A**

To make 100 cm^3 of solution **A** dissolve 10 g of glucose powder in 100 cm^3 of distilled water.

(vii) 20 cm^3 of a 1% albumin solution in a beaker labelled **B**

To make 100 cm^3 of solution **B** start by dissolving 1 g of albumin in a small amount of distilled water to make a paste. Top this up to 100 cm^3 with distilled water. This should be tested to make sure that protein can be detected in it using the biuret test. If not, the concentration of albumin should be increased until it can be detected.

(viii) 6 test-tubes

(ix) at least 10 cm^3 Benedict's solution labelled **Benedict's solution** with dropper **[MH]**

(x) at least 10 cm^3 biuret reagent labelled **biuret reagent** with dropper **[C] [MH]**

(xi) iodine solution labelled **iodine solution** with dropper **[MH] [N]**

(xii) test-tube rack or similar to hold 6 test-tubes

(xiii) 2 beakers approximately 250 cm^3 in size to act as water-baths, each labelled **water-bath**

(xiv) supply of hot water at approximately 70 °C. Candidates will be instructed to raise their hand to indicate when they need hot water, which you should pour into each water-bath when asked.

(xv) thermometer, –10 °C to +110 °C, with 1 °C graduations

(xvi) stop-watch or sight of a clock

(xvii) means of labelling glassware.

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Question 2

Each student will require:

(i) 30 cm ruler graduated in mm.

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Supervisor's report

Syllabus and component number | | | | | / | | |

Centre number | | | | | |

Centre name .....

Time of the practical session .....

Laboratory name/number .....

Give details of any difficulties experienced by the centre or by candidates (include the relevant candidate names and candidate numbers).

You must include:

- any difficulties experienced by the centre in the preparation of materials
- any difficulties experienced by candidates, e.g. due to faulty materials or apparatus
- any specific assistance given to candidates.

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Declaration

1 Each packet that I am returning to Cambridge International contains all of the following items:
- the scripts of the candidates specified on the bar code label provided
- the supervisor's results relevant to these candidates
- the supervisor's reports relevant to these candidates
- seating plans for each practical session, referring to each candidate by candidate number
- the attendance register.

2 Where the practical exam has taken place in more than one practical session, I have clearly labelled the supervisor's results, supervisor's reports and seating plans with the time and laboratory name/number for each practical session.

3 I have included details of difficulties relating to each practical session experienced by the centre or by candidates.

4 I have reported any other adverse circumstances affecting candidates, e.g. illness, bereavement or temporary injury, directly to Cambridge International on a *special consideration form*.

Signed ..... (supervisor)

Name (in block capitals) .....

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