Cambridge International AS & A Level

Cambridge International Examinations
Cambridge International Advanced Subsidiary and Advanced Level

BIOLOGY **9700/31**

Advanced Practical Skills 1 **October/November 2014**

CONFIDENTIAL INSTRUCTIONS

Great care should be taken to ensure that any confidential information given, including the identity of material on microscope slides where appropriate, does not reach the candidates either directly or indirectly.

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If you have any problems or queries regarding these Instructions, please contact CIE
by e-mail: info@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 **8** printed pages.

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PAPA CAMBRIDGE

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.

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.

Candidates must be provided with a microscope with:

- Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}$")
- Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}$")
- High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}$")
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

To avoid confusion, Cambridge request that only the lenses specified above are fitted in the microscopes to be used in the examination. Any lenses which are **not** ×10 or ×40 should be removed or replaced.

Each candidate must have sole, uninterrupted, use of the microscope for at least 55 minutes.

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

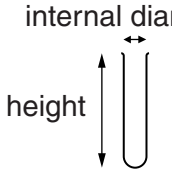
F = highly flammable substance

H = harmful or irritating substance

O = oxidising substance

T = toxic substance

N = harmful to environment



When small test-tubes are provided, it is expected that these are approximately 150 mm in height.

If other dimensions of apparatus are required, these will be specified in the Apparatus list.

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Confidential Instructions

No access to the Question Paper is permitted in advance of the examination.

Each candidate will require:

For both Questions

- mm ruler.

Question 1

- Solutions and reagents provided to the candidates should be supplied in a suitable beaker, or container, for removal of the solutions and reagents using a syringe. More of the solutions and reagents should be available if requested by candidates.
- All solutions and reagents should be provided to candidates at **room temperature**.
- Fresh test-tubes and syringes are needed for each candidate.
- Fresh **M**, **W**, **I**, **A** and **E** are needed for each candidate.
- All solutions and reagents should be disposed of according to local safety regulations.

Summary of solutions and reagents:

labelled	contents	hazard	volume / cm^3
M	milk	none	at least 40
W	distilled water	none	at least 50
I	0.1% turmeric solution	stains	30
A	0.3% sodium carbonate solution	[H] irritant	40
E	5% lipase (Lipex™) solution	[H] irritant	50

It is advisable to wear safety glasses/goggles and gloves when handling chemicals.

Preparation of solutions and reagents:

(i) **M**, at least 40 cm^3 of whole milk in a beaker or container, labelled **M**.
The milk must be full fat (no fat removed) e.g. cows' or goats' milk.

This is sufficient for 1 candidate.

(ii) **W**, at least 50 cm^3 of distilled water in a beaker or container, labelled **W**.

This is sufficient for 1 candidate.

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(iii) **I**, at least 30 cm^3 of 0.1% turmeric solution in a beaker or container, labelled **I**.

[F] This is prepared by putting 0.1 g of turmeric (ground turmeric spice as used in cooking) in 5 cm^3 of 70% ethanol (industrial methylated spirits) in a beaker or container, and stirring to dissolve for 5 minutes. Make up to 100 cm^3 with distilled water. (Ignore residue left in the bottom.)

Turmeric solution may lose its colour with time. It must be prepared **within one hour** of use by candidates, including those candidates who start with **Question 2**.

This is sufficient for 3 candidates.

[H] (iv) **A**, at least 40 cm^3 of 0.3% sodium carbonate solution in a beaker or container, labelled **A**.

This is prepared by putting 0.3 g of anhydrous sodium carbonate in 80 cm^3 of distilled water in a beaker and stirring to dissolve. Make up to 100 cm^3 with distilled water.

This is sufficient for 2 candidates.

[H] (v) **E**, at least 50 cm^3 of 5% Lipase (Lipex™) solution (supplied by Cambridge) in a beaker or container, labelled **E**.

This is prepared by putting 5 cm^3 of the Lipase (Lipex™) enzyme solution into 70 cm^3 of distilled water in a beaker while stirring. Make up to 100 cm^3 with distilled water.

It must be prepared **within one hour** of use by candidates, including those candidates who start with **Question 2**.

This is sufficient for 2 candidates.

Apparatus for each group of candidates should be clean.
Syringe needles are **not** required and must **not** be given to candidates.

Apparatus for each candidate	Quantity	✓
10 cm^3 syringe with the means to wash them out	2	
2 cm^3 or 3 cm^3 or 5 cm^3 syringe with the means to wash them out	2	
Beaker or container (approximately 400 cm^3) with tap water, labelled **For washing**	1	
Beaker or container (approximately 400 cm^3), labelled **For waste**	1	
Paper towels	8	
Beakers or containers to hold not less than 30 cm^3 volume	6	
Test-tubes, large not less than 25 cm^3 volume	6	
Test-tube rack to hold 6 large test-tubes at one time	1	
Black card or black paper approximately 100 mm × 100 mm	1	
Stop-clock or timer showing seconds If sight of a clock with a second hand is the only means of timing available to candidates, please report this in the Supervisor's Report.	1	
Glass marker pen	1	
Safety goggles/glasses	1	

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During the examination, the Supervisor (**not** the Invigilator) should, **out of the sight of the candidates**, carry out **Question 1** 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.

The Supervisor's Report and the candidates' seating plan should be enclosed with the candidates' scripts.

Please ensure that, if the scripts are in several packets, a copy of the Supervisor's Report and the candidates' seating plan are enclosed with each packet of scripts.

The Invigilator should **not** carry out **Question 1**.

Question 2

On receipt of the slides, please check that they are labelled **J1** and that none of the slides are broken. The material is **confidential** (so must **not** be disclosed to candidates) and the slides should **not** be viewed in advance of the examination.

The number of slides supplied by Cambridge will be equal to half the candidate entry.
Therefore, half the candidates should start on **Question 2** and the other half should start on **Question 1**.

For each candidate:

- the microscope must be set up on low power
- the slide must **not** be on the stage of the microscope.

Each candidate must have sole, uninterrupted use of the microscope for 55 minutes.

(i) Slide **J1** (supplied by Cambridge)

(ii) Microscope with:

- Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}$")
- High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}$")
- Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}$")
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

To avoid confusion, Cambridge request that only the lenses specified above are fitted in the microscopes to be used in the examination. Any lenses which are **not** ×10 or ×40 should be removed or replaced.

MATERIALS TO BE SUPPLIED BY CAMBRIDGE

(i) Question papers

(ii) Lipase (Lipex™) – leave sealed and refrigerate on receipt.

(iii) Slide **J1**

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RETURN OF EXAMINATION MATERIALS TO CAMBRIDGE

Immediately after the examination the microscope slides **must** be:

- returned to Cambridge in the containers in which they were received, using the self-adhesive label. The microscope slides must **not** be included in the packet of scripts.

or

- purchased using the order form enclosed with the slides, which should be completed and returned to Cambridge. The order form must **not** be included in the packet of scripts.

Slides and boxes will be charged at the rate of £3 per slide and £1 per box.
If the items are not returned or purchased by the deadline stated on the order form they will be charged at £3.50 per slide plus £1 per box.

SUPERVISOR'S REPORT and SEATING PLAN

The 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 candidates' seating plan in each script packet.

These Supervisors' 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 the Examiner with the scripts.

SUPERVISOR'S REPORT ON PRACTICAL BIOLOGY

October/November 2014

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 arising from faulty specimens or microscopes;

(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.

All other cases of individual hardship, e.g. illness or disability, should be reported direct to CIE on the normal 'Special Consideration Form' as detailed in the Handbook for Centres.

3. During the examination, the Supervisor should, **out of the sight of the candidates**, carry out **Question 1** using the same solutions 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. The Invigilator should **not** carry out **Question 1**.

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. Use separate paper for this.

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[Turn over

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Temperature of examination room ..... °C

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

Declaration (to be signed by the Principal or the Examinations Officer)

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 (of enclosed scripts) .....

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 sent inside **each envelope**.

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Advanced Practical Skills 1 **October/November 2014**

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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.

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.

Candidates must be provided with a microscope with:

- Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}$")
- Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}$")
- High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}$")
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

To avoid confusion, Cambridge request that only the lenses specified above are fitted in the microscopes to be used in the examination. Any lenses which are **not** ×10 or ×40 should be removed or replaced.

Each candidate must have sole, uninterrupted, use of the microscope for at least 55 minutes.

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

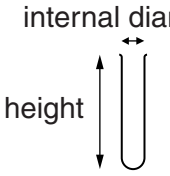
F = highly flammable substance

H = harmful or irritating substance

O = oxidising substance

T = toxic substance

N = harmful to environment



When small test-tubes are provided, it is expected that these are approximately 150 mm in height.

If other dimensions of apparatus are required, these will be specified in the Apparatus list.

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Confidential Instructions

No access to the Question Paper is permitted in advance of the examination.

Each candidate will require:

For both Questions:

- mm ruler.

Question 1

- Solutions provided to the candidates should be supplied in a suitable beaker, or container, for removal of the solution using a syringe. More of the solutions should be available if requested by candidates.
- All solutions should be provided to candidates at **room temperature**.
- Fresh test-tubes and syringes are needed for each candidate.
- Fresh **S1**, **S2**, **P** and **W** are needed for each candidate.
- All solutions should be disposed of according to local safety regulations.

Summary of solutions:

labelled	contents	hazard	volume /cm^3
S1	0.10 mol dm^{-3} sucrose solution	none	200
S2	1.00 mol dm^{-3} sucrose solution	none	200
P	0.50 mol dm^{-3} sucrose solution coloured with methylene blue	none	20
W	distilled water	none	200

It is advisable to wear safety glasses/goggles when handling chemicals.

Preparation of solutions:

Sucrose solutions may be prepared the day before but should be kept in covered containers in a refrigerator. However, they should be supplied to candidates at **room temperature** for the examination.

(i) **S1**, at least 200 cm^3 of 0.10 mol dm^{-3} sucrose solution, in a beaker or container labelled **S1**.

This is prepared by dissolving 6.8 g of sucrose in 100 cm^3 of distilled water and making up to 200 cm^3 with distilled water.

This is sufficient for 1 candidate.

(ii) **S2**, at least 200 cm^3 of 1.00 mol dm^{-3} sucrose solution, in a beaker or container labelled **S2**.

This is prepared by dissolving 68 g of sucrose in 100 cm^3 of distilled water and making up to 200 cm^3 with distilled water.

This is sufficient for 1 candidate.

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(iii) **P**, at least 20 cm^3 of 0.50 mol dm^{-3} sucrose solution coloured with methylene blue, in a beaker or container labelled **P**.

This is prepared by dissolving 34 g of sucrose in 100 cm^3 of distilled water and making up to 200 cm^3 with distilled water.

Put 1 cm^3 of 1% methylene blue solution into this 200 cm^3 of **P**, mixing well, so that it is coloured dark blue.

This is sufficient for 10 candidates.

1% methylene blue solution is prepared by dissolving 1 g of methylene blue and 6 g sodium chloride in 80 cm^3 of distilled water and making up to 100 cm^3 with distilled water.

(iv) **W**, at least 200 cm^3 of distilled water in a beaker or container, labelled **W**.

This is sufficient for 1 candidate.

Apparatus for each group of candidates should be clean.
Syringe needles are **not** required and must **not** be given to candidates.

Apparatus for each candidate	Quantity	✓
10 cm^3 syringe with the means to wash it out	2	
5 cm^3 syringe with the means to wash it out – when put into the test-tube the syringe should be supported on the rim of the test-tube	1	
Glass rod	1	
Beaker or container(s), (about 400 cm^3), with about 300 cm^3 tap water for pouring into test-tubes, labelled **For washing**	2	
Container(s), to hold about 400 cm^3, labelled **For waste**	2	
White card or white paper, approximately 100 mm by 100 mm	1	
Paper towels	8	
Test-tube – to hold a volume more than 40 cm^3 and less than 50 cm^3	1	
Beakers or containers to hold at least 120 cm^3	6	
Test-tube rack or container to hold the large test-tube	1	
Glass marker pen	1	
Safety goggles/glasses	1	

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

The Supervisor's Report and the candidates' seating plan should be enclosed with the candidates' scripts.

Please ensure that, if the scripts are in several packets, a copy of the Supervisor's Report and the candidates' seating plan are enclosed with each packet of scripts.

The Invigilator should **not** carry out **Question 1**.

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Question 2

On receipt of the slides, please check that they are labelled **K1** and that none of the slides are broken. The material is **confidential** (so **must not** be disclosed to candidates) and the slides should **not** be viewed in advance of the examination.

The number of slides supplied by Cambridge will be equal to half the candidate entry.
Therefore, half the candidates should start on **Question 2** and the other half should start on **Question 1**.

For each candidate:
- the microscope must be set up on low power
- the slide must **not** be on the stage of the microscope.

Each candidate must have sole, uninterrupted use of the microscope for 55 minutes.

(i) Slide **K1** (supplied by Cambridge).
(ii) Microscope with:
- Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}$")
- High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}$")
- Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}$")
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

To avoid confusion, Cambridge request that only the lenses specified above are fitted in the microscopes to be used in the examination. Any lenses which are **not** ×10 or ×40 should be removed or replaced.

MATERIALS TO BE SUPPLIED BY CAMBRIDGE

(i) Question papers.

(ii) Slide **K1**.

RETURN OF EXAMINATION MATERIALS TO CAMBRIDGE

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The Invigilator should **not** carry out **Question 1**.

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. Use separate paper for this.

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[Turn over

Temperature of examination room …… °C

Results for **Questions 1(a)(ii) and 1(a)(vi)**:

Declaration (to be signed by the Principal or the Examinations Officer)

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 (of enclosed scripts) .....

Centre name .....

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BIOLOGY **9700/34**

Advanced Practical Skills 2 **October/November 2014**

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Candidates must be provided with a microscope with:

- Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}''$)
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

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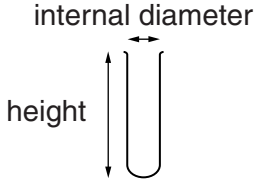
F = highly flammable substance

H = harmful or irritating substance

O = oxidising substance

T = toxic substance

N = harmful to environment



When small test-tubes are provided, it is expected that these are approximately 150 mm in height.

If other dimensions of apparatus are required, these will be specified in the Apparatus list.

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Confidential Instructions

No access to the Question Paper is permitted in advance of the examination.

Each candidate will require:

For both Questions

- mm ruler.

Question 1

- Solutions and reagents provided to the candidates should be supplied in a suitable beaker, or container, for removal of the solutions and reagents using a syringe. More of the solutions and reagents should be available if requested by candidates.
- All solutions should be provided to candidates at **room temperature**.
- Fresh test-tubes and syringes are needed for each candidate.
- Fresh **K**, **C**, **P1**, **P2**, **U** and **W** are needed for each candidate.
- All solutions and reagents should be disposed of according to local safety regulations.

Summary of solutions and reagents:

labelled	contents	hazard	volume /cm^3
K	5% potassium hydroxide solution	[H] harmful [H] irritant [C] corrosive	at least 20
C	0.3% copper sulfate solution	[H] harmful	at least 20
P1	0.8% albumen solution	none	40
P2	1.0% albumen solution	none	40
U	0.2% albumen solution	none	20
W	distilled water	none	120

It is advisable to wear safety glasses/goggles when handling chemicals.

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Preparation of solutions and reagents:

[H][C] (i) **K**, at least 20 cm^3 of 5% potassium hydroxide solution in a beaker or container, labelled, **K**.

You are advised to wear safety glasses or goggles especially when using the potassium hydroxide solution, **K**. *If potassium hydroxide solution,* **K**, *comes into contact with your skin, wash it off with plenty of cold water.*

This is prepared by dissolving 5.0 g of potassium hydroxide into 80 cm^3 distilled water and making up to 100 cm^3 with distilled water.

[H] (ii) **C**, at least 20 cm^3 of 0.3% copper sulfate solution in a beaker or container, labelled **C**.

This gives a very pale blue solution – you **must** make up this concentration.

Do **not** use anhydrous copper sulfate.

This is prepared by dissolving 0.3 g of copper sulfate pentahydrate ($CuSO_4.5H_2O$) in 80 cm^3 distilled water and making up to 100 cm^3 with distilled water.

You will need the following stock solution:

1% albumen solution – this must be prepared **on the day of the examination**.

This is prepared by dissolving 2.0 g of albumen in 20 cm^3 of distilled water and mixing well. Make up to 200 cm^3 with distilled water and stir until dissolved.

(iii) **P1**, at least 40 cm^3 of 0.8% albumen solution, in a beaker or container, labelled **P1**.

This is prepared by putting 80 cm^3 of the 1% stock solution into a beaker and making up to 100 cm^3 with distilled water.

(iv) **P2**, at least 40 cm^3 of 1% albumen solution, in a beaker or container labelled **P2**.

This is the same as the stock solution.

Note: This is intentionally **not** the same concentration as that given on the question paper.

(v) **U**, at least 20 cm^3 of 0.2% albumen solution, in a beaker or container, labelled **U**.

To prepare 0.2% albumen solution, put 20 cm^3 of the 1% stock solution into a beaker and make up to 100 cm^3 with distilled water.

To test: put **1 cm^3** of **U** into a test-tube, add **1 cm^3** of **K**, mix and add **1 cm^3** of **C**, a light blue-purple colour should be observed (**not dark** purple).

(vi) **W**, at least 120 cm^3 of distilled water in a beaker or container, labelled **W**.

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Apparatus for each group of candidates should be clean.
Syringe needles are **not** required and must **not** be given to candidates.

Apparatus for each candidate	Quantity	✓
10 cm^3 syringe with the means to wash it out	2	
1 cm^3 or 2 cm^3 or 3 cm^3 syringe with the means to wash it out	3	
Glass rod	1	
Beaker or container, (approximately 200 cm^3), with tap water for pouring into test-tubes, labelled **For washing**	1	
Beaker or container, (approximately 200 cm^3), labelled **For waste**	1	
Paper towels	8	
Test-tubes – to hold more than 15 cm^3 but no more than 30 cm^3	7	
Beakers or containers to hold at least 50 cm^3 to allow the small syringe to remove liquid	6	
Test-tube rack(s) to hold the 7 test-tubes	1	
White card or white paper or white tile	1	
Glass marker pen	1	
Safety goggles/glasses	1	

During the examination, the Supervisor (**not** the Invigilator) should, **out of the sight of the candidates**, carry out **Question 1** 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.

The Supervisor's Report and the candidates' seating plan should be enclosed with the candidates' scripts.

Please ensure that, if the scripts are in several packets, a copy of the Supervisor's Report and the candidates' seating plan are enclosed with each packet of scripts.

The Invigilator should **not** carry out **Question 1**.

Question 2

On receipt of the slides, please check that they are labelled **L1** and that none of the slides are broken. The material is **confidential** (so **must not** be disclosed to candidates) and the slides should **not** be viewed in advance of the examination.

The number of slides supplied by Cambridge will be equal to half the candidate entry.
Therefore, half the candidates should start on **Question 2** and the other half should start on **Question 1.**

For each candidate:

- the microscope must be set up on low power
- the slide must **not** be on the stage of the microscope.

Each candidate must have sole, uninterrupted use of the microscope for 55 minutes.

(i) Slide **L1** (supplied by Cambridge)

(ii) Microscope with:

- Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}''$)
- Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

To avoid confusion, Cambridge request that only the lenses specified above are fitted in the microscopes to be used in the examination. Any lenses which are **not** ×10 or ×40 should be removed or replaced.

MATERIALS TO BE SUPPLIED BY CAMBRIDGE

(i) Question papers.

(ii) Slide **L1**.

RETURN OF EXAMINATION MATERIALS TO CAMBRIDGE

Immediately after the examination the microscope slides **must** be:

- returned to Cambridge in the containers in which they were received, using the self-adhesive label. They must **not** be included in the packet of scripts.

or

- purchased using the order form enclosed with the slides, which should be completed and returned to Cambridge. The order form must **not** be included in the packet of scripts.

Slides and boxes will be charged at the rate of £3 per slide and £1 per box.

If the items are not returned or purchased by the deadline stated on the order form they will be charged at £3.50 per slide plus £1 per box.

SUPERVISOR'S REPORT and SEATING PLAN

The 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 candidates' seating plan in each script packet.
These Supervisors' 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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Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.

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

SUPERVISOR'S REPORT ON PRACTICAL BIOLOGY

A Level

October/November Session 2014

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 arising from faulty specimens or microscopes;

(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.

All other cases of individual hardship, e.g. illness or disability, should be reported direct to CIE on the normal 'Special Consideration Form' as detailed in the Handbook for Centres.

3. During the examination, the Supervisor should, **out of the sight of the candidates**, carry out **Question 1** using the same solutions 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.
The Invigilator should **not** carry out **Question 1**.

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. Use separate paper for this.

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[Turn over

Temperature of examination room ..... °C

Results for ***Question 1(a)(i) and 1(a)(v)***:

Declaration (to be signed by the Principal or the Examinations Officer)

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 (of enclosed scripts).....

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 sent inside **each envelope.**

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Cambridge International AS & A Level

Cambridge International Examinations
Cambridge International Advanced Subsidiary and Advanced Level

BIOLOGY **9700/35**

Advanced Practical Skills 1 **October/November 2014**

CONFIDENTIAL INSTRUCTIONS

Great care should be taken to ensure that any confidential information given, including the identity of material on microscope slides where appropriate, does not reach the candidates either directly or indirectly.

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If you have any problems or queries regarding these Instructions, please contact CIE
by e-mail: info@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 **11** printed pages and **1** blank page.

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[Turn over

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.

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.

Candidates must be provided with a microscope with:

- Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}''$)
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

To avoid confusion, Cambridge request that only the lenses specified above are fitted in the microscopes to be used in the examination. Any lenses which are **not** ×10 or ×40 should be removed or replaced.

Each candidate must have sole, uninterrupted, use of the microscope for at least 55 minutes.

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

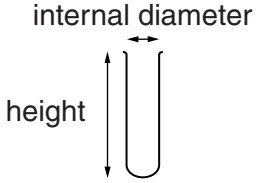
F = highly flammable substance

H = harmful or irritating substance

O = oxidising substance

T = toxic substance

N = harmful to environment



When small test-tubes are provided, it is expected that these are approximately 150 mm in height.

If other dimensions of apparatus are required, these will be specified in the Apparatus list.

Centres are reminded that they are **not** permitted to open the question paper envelopes before the examination. Centres should also refer to the Handbook for Centres.

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, by **fax** to +44 1223 553558 or by **phone** to +44 1223 553554.

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Confidential Instructions

No access to the Question Paper is permitted in advance of the examination.

Each candidate will require:

For both Questions

- mm ruler.

Question 1

- Solutions and reagents provided to the candidates should be supplied in a suitable beaker, or container, for removal of the solutions and reagents using a syringe. More of the solutions and reagents should be available if requested by candidates.
- All solutions should be provided to candidates at **room temperature**.
- Fresh test-tubes and syringes are needed for each candidate.
- Fresh **Y**, **W, G**, and **M** are needed for each candidate.
- All solutions and reagents should be disposed of according to local safety regulations.

Summary of solutions and reagents:

labelled	contents	hazard	volume/cm^3
Y	10% yeast cell suspension	none	at least 100
W	distilled water	none	at least 150
G	20% glucose solution	none	at least 80
M	0.01% methylene blue aqueous solution	stains	at least 20

It is advisable to wear safety glasses/goggles and gloves when handling chemicals.

Yeast
It is **essential** to try the yeast well **before** the examination to make sure that it **will become** active. Do not use Brewer's yeast as this does not always work actively enough in the time.
To test the activity of the yeast cell suspension put 10 cm^3 of **Y**, 1 cm^3 of **M** and 10 cm^3 of **G** into a test-tube, at a temperature of about 40 °C.
M should change colour within five minutes.
If the blue colour remains then either increase the concentration of the yeast cell suspension or try a new source of yeast.

Preparation of solutions and reagents:

(i) **Y**, at least 100 cm^3 of a 10% yeast cell suspension, in a beaker or container, labelled **Y**.

The yeast must not be active when given to the candidates so this must be prepared **within one hour** of use by candidates, including those candidates who start with **Question 2**.

This is prepared by putting 10 g of dried yeast (**for baking**) into 80 cm^3 of distilled water, stirring and making up to 100 cm^3 with distilled water.

This is sufficient for 1 candidate.

(ii) **W**, at least 150 cm^3 of distilled water in a beaker or container, labelled **W**.

This is sufficient for 1 candidate.

(iii) **G**, at least 80 cm^3 of 20% glucose solution in a beaker or container, labelled **G**.

This is prepared by sprinkling 20 g of glucose, a little at a time, onto the surface of 80 cm^3 of distilled water, stirring continuously, and making up to 100 cm^3 with distilled water.

This is sufficient for 1 candidate.

You will need the following stock solution:

1% methylene blue solution.

This is prepared by dissolving 1.0 g of methylene blue in 80 cm^3 of distilled water in a beaker or container and making up to 100 cm^3 with distilled water.

(iv) **M**, at least 20 cm^3 of 0.01% methylene blue solution in a beaker or container, labelled **M**.

This is prepared by putting 1 cm^3 of the 1% stock solution into a beaker or container and making up to 100 cm^3 with distilled water.

This is sufficient for 5 candidates.

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Apparatus for each group of candidates should be clean.

Syringe needles are **not** required and must **not** be given to candidates.

Apparatus for each candidate	Quantity	✓
10 cm^3 syringe with the means to wash it out	3	
2 cm^3 or 3 cm^3 or 5 cm^3 syringe with the means to wash it out	1	
Beaker or container, (approximately 200 cm^3) with tap water, labelled **For washing**	1	
Beaker or container, (approximately 200 cm^3) labelled **For waste**	1	
Paper towels	8	
Beakers or containers to hold at least 30 cm^3 to allow the small syringe to remove liquid	5	
Test-tubes – to hold a volume more than 25 cm^3 and less than 50 cm^3	5	
Test-tube rack or container to hold 5 large test-tubes at one time	1	
Thermometer –10 °C to 110 °C	1	
Container with hot water between 50 °C to 60 °C labelled **Hot water**. Only the Supervisor may use a thermostatically-controlled water-bath, to provide additional hot water if requested by candidates.	1	
Container with cold water below 30 °C labelled **Cold water**.	1	
400 cm^3 beaker or container, labelled **Water-bath**, to act as a water-bath to contain five large test-tubes at a time.	1	
Glass rod	1	
Stop-clock or timer showing seconds	1	
Glass marker pen	1	
Safety goggles/glasses	1	

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

The Supervisor's Report and the candidates' seating plan should be enclosed with the candidates' scripts.

Please ensure that, if the scripts are in several packets, a copy of the Supervisor's Report and the candidates' seating plan are enclosed with each packet of scripts.

The Invigilator should **not** carry out **Question 1**.

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Question 2

- Solutions provided to the candidates should be supplied in a suitable beaker, or container, for removal of the solutions using a teat pipette. More of the solutions and materials should be available if requested by candidates.
- All solutions and materials should be provided to candidates at **room temperature**.
- Clean microscope slides, coverslips and teat pipettes are needed for each candidate.
- Fresh **I**, **M**, **DW**, and **S** are needed for each candidate.
- All solutions should be disposed of according to local safety regulations.

Summary of solutions:

labelled	contents	hazard	volume/cm^3
I	iodine in potassium iodide solution	[H] irritant	at least 25
M	0.01% methylene blue solution	stains	at least 25
DW	distilled water	none	at least 25

Materials:

labelled	contents	hazard	quantity
S	onion pieces	none	at least three pieces of onion wrapped in a damp paper towel, in a dish. These can be prepared the day before. See instructions on page 7.

[H] **(i)** **I**, iodine in potassium iodide, at least 25 cm^3 in a bottle or container, with a pipette (teat), labelled **I**.

This is the same concentration as used when testing for starch.

This is sufficient for one candidate.

(ii) **M**, at least 25 cm^3 of 0.01% methylene blue solution in a bottle or container, with a pipette (teat), labelled **M**.
(See instructions for preparation in Question 1.)

This is sufficient for one candidate.

(iii) **DW**, at least 25 cm^3 of distilled water in a bottle or container, with a pipette (teat), labelled **DW**.

This is sufficient for one candidate.

(iv) 3 pieces of onion covered with damp paper towel in a dish, labelled **S**.
The three pieces are cut from an onion as shown in Fig. 2.1.

This is sufficient for one candidate.

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Preparation of pieces of onion:

- Candidates should **not** be given red onion. Onions with white flesh should be used, either with dry brown scales (yellow onion) or with dry white scales (white onion).
- The onions should be as fresh as possible to avoid the effects of storage.
    - Cut off the top and bottom of the onion.
    - Remove the outer dry scales.
    - Cut the onion into pieces as in Fig. 2.1.

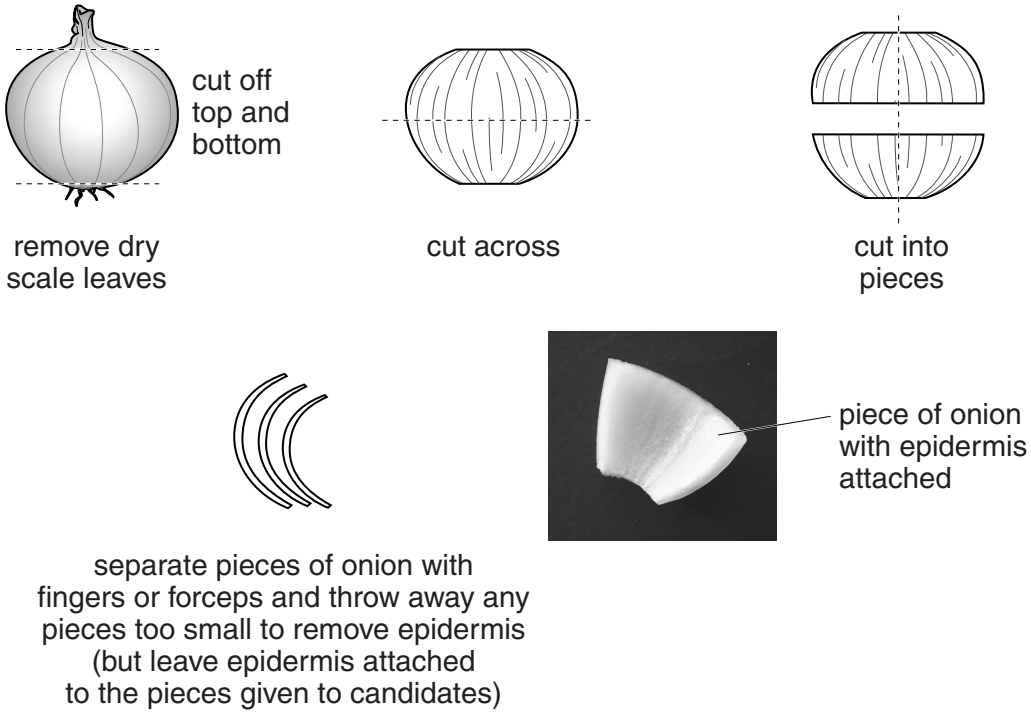


Fig. 2.1

- Put three pieces of onion into a dish, covered with a damp paper towel, labelled **S**.

  This is sufficient for one candidate.

  (You are reminded to prepare spare pieces of onion to supply to the candidates as requested.)

The pieces of onion may be prepared before the examination and left overnight, at room temperature, in large containers with enough water to submerge the onion pieces. Cover the containers.

Apparatus for each group of candidates should be clean.

Apparatus for each candidate	Quantity	✓
Clean microscope slides	3	
Glass coverslips, e.g. 2 cm × 1 cm	3	
Glass marker pen	1	
Mounted needle or seeker or other means to position coverslip on microscope slide	1	
White tile	1	
Pipette, teat	3	
Forceps	1	
Sharp blade or scalpel	1	
Container, to hold about 250 cm^3, labelled **For waste**	1	
Paper towels	8	
Microscope with: • Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}''$) • High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}''$) • Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}''$) • Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen. For each candidate the microscope must be set up on low power.	1	

Each candidate must have sole, uninterrupted use of the microscope for 55 minutes.

To avoid confusion, Cambridge request that only the lenses specified above are fitted in the microscopes to be used in the examination. Any lenses which are **not** ×10 or ×40 should be removed or replaced.

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MATERIALS TO BE SUPPLIED BY CAMBRIDGE

(i) Question papers.

Note: No slide is required.

SUPERVISOR'S REPORT and SEATING PLAN

The 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 candidates' seating plan in each script packet.

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

SUPERVISOR'S REPORT ON PRACTICAL BIOLOGY

A Level

October/November Session 2014

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 arising from faulty specimens or microscopes;

(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.

All other cases of individual hardship, e.g. illness or disability, should be reported direct to CIE on the normal 'Special Consideration Form' as detailed in the Handbook for Centres.

3. During the examination, the Supervisor should, **out of the sight of the candidates**, carry out **Question 1 and Question 2** using the same solutions 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. The Invigilator should **not** carry out **Question 1 and Question 2.**

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. Use separate paper for this.



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[Turn over

Temperature of examination room ..... °C

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

Drawings for ***Question 2(a)(i)***:

Declaration (to be signed by the Principal or the Examinations Officer)

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 (of enclosed scripts) .....

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 sent inside **each envelope**.

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Cambridge International AS & A Level

Cambridge International Examinations
Cambridge International Advanced Subsidiary and Advanced Level

BIOLOGY **9700/36**

Advanced Practical Skills 2 **October/November 2014**

CONFIDENTIAL INSTRUCTIONS

Great care should be taken to ensure that any confidential information given, including the identity of material on microscope slides where appropriate, does not reach the candidates either directly or indirectly.

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If you have any problems or queries regarding these Instructions, please contact CIE
by e-mail: info@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 **8** printed pages.

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[Turn over

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.

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.

Candidates must be provided with a microscope with:

- Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}''$)
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

To avoid confusion, Cambridge request that only the lenses specified above are fitted in the microscopes to be used in the examination. Any lenses which are **not** ×10 or ×40 should be removed or replaced.

Each candidate must have sole, uninterrupted, use of the microscope for at least 55 minutes.

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

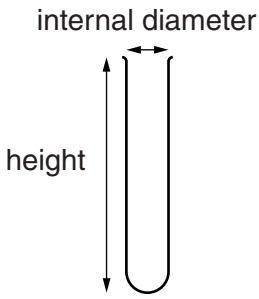
F = highly flammable substance

H = harmful or irritating substance

O = oxidising substance

T = toxic substance

N = harmful to environment



When small test-tubes are provided, it is expected that these are approximately 150 mm in height.

If other dimensions of apparatus are required, these will be specified in the Apparatus list.

Centres are reminded that they are **not** permitted to open the question paper envelopes before the examination. Centres should also refer to the Handbook for Centres.

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, by **fax** to +44 1223 553558 or by **phone** to +44 1223 553554.

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Confidential Instructions

No access to the Question Paper is permitted in advance of the examination.

Each candidate will require:

For both Questions

- mm ruler.

Question 1

- Solutions and reagents provided to the candidates should be supplied in a suitable beaker, or container, for removal of the solution using a syringe. More of the solutions and reagents should be available if requested by candidates.
- All solutions should be provided to candidates at **room temperature**.
- Fresh test-tubes and syringes are needed for each candidate.
- Fresh **E**, **W**, **B**, **M** and **A** are needed for each candidate.
- All solutions and reagents should be disposed of according to local safety regulations.

Summary of solutions and reagents:

labelled	contents	hazard	volume /cm^3
E	5% lipase (Lipex™) solution	[H] irritant	at least 40
W	distilled water	none	at least 60
B	0.04% bromothymol blue solution	stains	at least 20
M	milk	none	at least 40
A	0.3% sodium carbonate solution	none	at least 40

It is advisable to wear safety glasses/goggles and gloves when handling chemicals.

Preparation of solutions and reagents:

[H] **(i)** **E**, at least 40 cm^3 of 5% Lipase (Lipex™) solution (supplied by Cambridge) in a beaker or container, labelled **E**.

This is prepared by putting 5 cm^3 of the Lipase (Lipex™) enzyme solution into 70 cm^3 of distilled water in a beaker while stirring. Make up to 100 cm^3 with distilled water.

This must be prepared **within one hour** of use by candidates, including those candidates who start with **Question 2**.

This is sufficient for 2 candidates.

(ii) **W**, at least 60 cm^3 of distilled water in a beaker or container, labelled **W**.

This is sufficient for 1 candidate.

(iii) **B**, at least 20 cm^3 of 0.04% bromothymol blue solution, in a covered beaker or container, labelled **B**.

This is prepared by putting 0.2 g of bromothymol blue powder into 100 cm^3 of 70% ethanol in a beaker or container and stirring to dissolve.
Make up to 500 cm^3 with distilled water.

This is sufficient for 25 candidates.

Note that bromothymol blue solution is not blue at this stage.

(iv) **M**, at least 40 cm^3 of whole milk in a beaker or container, labelled **M**.

The milk must be full fat (no fat removed), e.g. cows' or goats' milk.

This is sufficient for 1 candidate.

(v) **A**, at least 40 cm^3 of 0.3% sodium carbonate solution in a beaker or container, labelled **A**.

This is prepared by putting 0.3 g of anhydrous sodium carbonate into 80 cm^3 of distilled water in a beaker or container and stirring to dissolve. Make up to 100 cm^3 with distilled water.

This is sufficient for 2 candidates.

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Apparatus for each group of candidates should be clean.
Syringe needles are **not** required and must **not** be given to candidates.

Apparatus for each candidate	Quantity	✓
10 cm^3 syringe with the means to wash it out	2	
2 cm^3 or 3 cm^3 or 5 cm^3 syringe with the means to wash it out	2	
Beaker or container (approximately 400 cm^3), with tap water for pouring into test-tubes, labelled **For washing**	1	
Beaker or container (approximately 400 cm^3), labelled **For waste**	1	
Paper towels	8	
Pipette, teat (length so that end of pipette can reach close to the bottom of large test-tubes)	2	
Beakers or containers to hold at least 40 cm^3	5	
Test-tubes – to hold no more than 30 cm^3	5	
Test-tube rack or container to hold 5 test-tubes	1	
Glass rod	1	
White tile or spotting tile	1	
Thermometer –10 °C to 110 °C	1	
Container with hot water between 50 °C to 60 °C labelled **Hot water** Only the Supervisor may use a thermostatically-controlled water-bath to provide additional hot water if requested by candidates	1	
Container with cold water below 30 °C labelled **Cold water**	1	
400 cm^3 beaker or container, labelled **Water-bath**, to act as a water-bath to contain 5 test-tubes at a time	1	
Stop-clock or timer showing seconds	1	
Glass marker pen	1	
Safety goggles/glasses	1	

During the examination, the Supervisor (**not** the Invigilator) should, **out of the sight of the candidates**, carry out **Question 1** 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.

The Supervisor's Report and the candidates' seating plan should be enclosed with the candidates' scripts. Please ensure that, if the scripts are in several packets, a copy of the Supervisor's Report and the candidates' seating plan are enclosed with each packet of scripts.

The Invigilator should **not** carry out **Question 1**.

Question 2

On receipt of the slides, please check that they are labelled **M1** and that none of the slides are broken. The material is **confidential** (so **must not** be disclosed to candidates) and the slides should **not** be viewed in advance of the examination.

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The number of slides supplied by Cambridge will be equal to half the candidate entry.
Therefore, half the candidates should start on **Question 2** and the other half should start on **Question 1.**

For each candidate:

- the microscope must be set up on low power
- the slide must **not** be on the stage of the microscope.

Each candidate must have sole, uninterrupted use of the microscope for at least 55 minutes.

(i) Slide **M1** (supplied by Cambridge)

(ii) Microscope with:

- Low-power objective lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- High-power objective lens, ×40 (equal to 4 mm or $\frac{1}{6}''$)
- Eyepiece lens, ×10 (equal to 16 mm or $\frac{2}{3}''$)
- Eyepiece graticule fitted within the eyepiece and visible in focus at the same time as the specimen.

To avoid confusion, Cambridge request that only the lenses specified above are fitted in the microscopes to be used in the examination. Any lenses which are **not** ×10 or ×40 should be removed or replaced.

MATERIALS TO BE SUPPLIED BY CAMBRIDGE

(i) Question papers.

(ii) Lipase (Lipex™) – leave sealed and refrigerate on receipt.

(iii) Slide **M1**.

RETURN OF EXAMINATION MATERIALS TO CAMBRIDGE

Immediately after the examination the microscope slides **must** be:

- returned to Cambridge in the containers in which they were received, using the self-adhesive label. These must **not** be included in the packet of scripts.

or

- purchased using the order form enclosed with the slides, which should be completed and returned to Cambridge. The order form must **not** be included in the packet of scripts.

Slides and boxes will be charged at the rate of £3 per slide and £1 per box.
If the items are not returned or purchased by the deadline stated on the order form they will be charged at £3.50 per slide plus £1 per box.

SUPERVISOR'S REPORT and SEATING PLAN

The 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 candidates' seating plan in each script packet.

These Supervisors' 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 the Examiner with the scripts

SUPERVISOR'S REPORT ON PRACTICAL BIOLOGY

October/November 2014

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 arising from faulty specimens or microscopes;

(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.

All other cases of individual hardship, e.g. illness or disability, should be reported direct to CIE on the normal 'Special Consideration Form' as detailed in the Handbook for Centres.

3. During the examination, the Supervisor should, **out of the sight of the candidates**, carry out **Question 1** using the same solutions 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. The Invigilator should **not** carry out **Question 1.**

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. Use separate paper for this.

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[Turn over

Temperature of examination room ..... °C

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

Declaration (to be signed by the Principal or the Examinations Officer)

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 (of enclosed scripts) .....

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 sent inside **each envelope**.

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