UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

0625809296

AGRICULTURE **5038/03**

Paper 3 Practical Test **May/June 2009**

1 hour 15 minutes

Candidates answer on the Question Paper.

Additional Materials: As listed on Instructions to Supervisors.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams or graphs.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use	
1	
2	
3	
Total	

This document consists of **7** printed pages and **1** Supervisors' Report.

For Examiner's Use

1 **AS1** and **AS2** are parts of a plant grown to be eaten.

(a) (i) Make a labelled drawing of **AS1** and **AS2** to show their external features.

AS1 external features

[2]

AS2 external features

[2]

For Examiner's Use

(ii) Carefully cut **AS1 and AS2** in half, with a sharp knife or scalpel.

Make a labelled drawing to show the internal features of **AS1** and **AS2**.

AS1 internal features

[2]

AS2 internal features

[2]

For Examiner's Use

(b) You will now test the food crops, **AS1** and **AS2**, for the presence of the main food types.

- Chop up one half of the food **AS1** into small pieces in a petri dish.
- Crush and mix the pieces.
- Label the dish **AS1**.
- From one half of the food **AS2** cut off a piece 2 cm square.
- Chop it up into small pieces in a petri dish.
- Label the dish **AS2**.

(i) Follow the instructions below.

- Place a small amount of **AS1** into a clean, dry test-tube.
- Add 3 cm depth of Benedict's solution.
- Warm the mixture carefully for at least 5 minutes in a water bath.
- Record your result and conclusion in the table below.
- Repeat the procedure with **AS2**.

sample	result	conclusion
AS1		
AS2		

[2]

(ii) Follow the instructions below.

- Place a small amount of **AS1** onto a white tile.
- Use a pipette to add a few drops of iodine solution.
- Record your result and conclusion in the table below.
- Repeat the procedure using **AS2**.

sample	result	conclusion
AS1		
AS2		

[2]

For Examiner's Use

(iii) Follow the instructions below.

- Place a small amount of **AS1** into a clean, dry test-tube.
- Add 3 cm depth of copper sulfate solution and then 3 cm depth of sodium hydroxide solution.
- Record your result and conclusion in the table below.
- Repeat the procedure using **AS2**.

sample	result	conclusion
AS1		
AS2		

[2]

(c) Why were the foods chopped and broken up before carrying out food tests?

.....

.....

..... [2]

(d) What **three** precautions should be taken when carrying out these tests

1 ..... [1]

2 ..... [1]

3 ..... [1]

[Total: 19]

For Examiner's Use

2 You are provided with **two** soil samples **AS3** and **AS4**.

- Place 1 cm depth of **AS3** into a test tube, label it **AS3**.
- Add 0.5 cm of barium sulfate to the soil.
- Add 2 cm depth of deionised water or distilled water and mark the level with a marker pen.
- Add 1 cm depth of soil indicator.
- Place a cork or bung in the tube and shake the test-tube.
- Allow the contents to settle.
- Use a colour test card to identify the pH of the soil.
- Repeat the procedure using soil **AS4**.

(a) Record your results on the table below.

sample	colour after settling	pH of sample
AS3		
AS4		

[4]

(b) Which soil sample would be best for growing a lime-hating plant?
Give a reason for your answer.

soil sample .....

reason .....

..... [1]

[Total: 5]

For Examiner's Use

3 The table shows wet tests for ammonium ions and sulfate ions.

ion	test	test results
ammonium	add aqueous sodium hydroxide warm carefully	ammonia produced on warming which turns damp litmus paper blue
sulfate	acidify with dilute nitric acid add aqueous barium nitrate	white precipitate forms

AS5 and **AS6** are samples of well water.

(a) Test the well water, **AS5** and **AS6** for ammonium and sulfate ions.
Record your results in the table below.

sample	presence of ammonium ions in sample	presence of sulfate ions in sample
AS5		
AS6		

[4]

(b) Which sample is most suitable for human consumption?

sample .....

explain your answer .....

..... [2]

[Total: 6]

SUPERVISOR'S REPORT

For Examiner's Use

**The Supervisor or Teacher responsible for the subject is asked to answer the following questions.*

1 Name the type **AS1** provided.

.....

Name the type **AS2** provided.

.....

2 Please state the soil pH of

AS3 .....

AS4 .....

Please outline any problems encountered in providing the soils

.....

.....

.....

3 Please record the results for the samples **AS5** and **AS6** in the table below

sample	presence of ammonium ions in sample	presence of sulfate ions in sample
AS5		
AS6		

Please outline any problems encountered in obtaining these results.

.....

.....

Declaration to be signed by the Principal, and completed on the top script from the Centre.

The preparation of the Practical Test has been carried out so as to fully maintain the security of the examination.

Signed .....

Centre Number ..... School .....

***Information that applies to all candidates need only be given once.**