UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

AGRICULTURE **5038/31**

Paper 3 Practical Test **October/November 2011**

1 hour 15 minutes

Candidates answer on the Question Paper

Additional Materials: As listed in Confidential Instructions

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** Supervisor's Report.

Answer **all** the questions.

For Examiner's Use

Write your answers in the space provided.

1 (a) You are provided with **two** common weeds **AS1** and **AS2.**

- Draw a diagram of each weed.
- Label each diagram to show how the weeds are different from each other.
- Provide a scale for each diagram.

(i) AS1

[4]

(ii) AS2

[4]

(b) (i) **AS1** is very successful as a pasture weed.
Look carefully at **AS1.**

Suggest why this plant can survive in

dry conditions,

.....

.....[1]

heavily grazed pasture.

.....

.....[1]

(ii) Look carefully at **AS2.**

Suggest

how the weed reproduces asexually,

.....[1]

why it is difficult to control.

.....[1]

[Total: 12]

2 **(a)** **AS3** and **AS4** are samples of animal feed found in bags which have lost their labels. You are going to find out which nutrients they contain by carrying out glucose, starch and protein food tests on the samples.

(i) Glucose test

- Place a spatula of **AS3** into a dry, clean test tube.
- Add 3 cm depth of Benedict's solution.
- Heat the mixture for at least 5 minutes in a water bath at 90 °C.

Repeat the test with **AS4.**

Fill in your results and conclusions in the table below.

sample	result	conclusion
AS3		
AS4		

[2]

(ii) Starch test

- Place a small amount of **AS3** onto a white tile.
- Add a few drops of iodine solution.

Repeat the test using **AS4**.

Fill in your results and conclusions in the table below.

sample	result	conclusion
AS3		
AS4		

[2]

(iii) Protein test

- Place a spatula of **AS3** into a dry, clean test tube.
- Add 3 cm depth of copper sulfate solution and then 3 cm depth of sodium hydroxide solution.

Repeat the test using **AS4**.

Fill in your results and conclusions in the table below.

sample	result	conclusion
AS3		
AS4		

[2]

(b) Which animal feed would be most suitable for young livestock?

Give reasons for your answer.

.....

.....

..... [2]

[Total: 8]

3 You are investigating water content and pH of two different soils.

(a) Water content test

You are provided with two soil samples labelled **AS5** and **AS6**.
Previously, 20 g of each soil has been weighed accurately and then dried in an oven for 24 hours.

Weigh the dried samples and record your results in the table below.
Calculate the percentage of water in each sample and record in the table.

	start mass in g	mass of dried sample in g	percentage of water in the sample %
AS5	20		
AS6	20		

[4]

(b) pH test

- Place 1 cm depth of **AS5** into a test tube.
- Add about 0.5 cm depth of barium sulfate.
- Mark the top of the barium sulfate with a marker pen.
- Add distilled water to 3 cm above the marked line and make another mark.
- Add 2 cm depth of soil indicator.
- Place a cork or bung in the test tube.
- Shake well and stand in a test tube rack to settle.

Repeat the test for **AS6.**

(i) Using a pH colour chart complete the table below for the two samples.

sample	**AS5**	**AS6**
colour of solution after settling		
pH of sample		

[4]

(ii) Why is distilled water used rather than tap water when carrying out the pH test?

For Examiner's Use

.....

..... [1]

(c) If a soil has a pH of 4.0 what could be done to make the soil less acidic?

.....

.....

..... [1]

[Total: 10]

SUPERVISOR'S REPORT

For Examiner's Use

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

1 Name of weed provided for **AS1** .....

Name of weed provided for **AS2** .....

State any difficulties in providing **AS1** and **AS2** .....

.....

2 State any problems encountered in providing samples **AS3** and **AS4**

.....

.....

.....

3 pH of sample **AS5** .....

pH of sample **AS6** .....

Were any problems encountered? .....

.....

.....

.....

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.**