

Centre Number	Candidate Number	Name
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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education Ordinary Level

**AGRICULTURE**

**5038/03**

Paper 3 Practical Test

May/June 2005

**1 hour 15 minutes**

Candidates answer on the Question Paper.  
Additional Materials: As listed in Instructions to Supervisors.

**READ THESE INSTRUCTIONS FIRST**

Write your name, Centre number and candidate number in the spaces provided at the top of this page.  
Write in dark blue or black pen in the spaces provided on the Question Paper.  
You may use a soft pencil for any diagrams, graphs or rough working.  
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.  
The number of marks is given in brackets [ ] at the end of each question or part question.

If you have been given a label, look at the details. If any details are incorrect or missing, please fill in your correct details in the space given at the top of this page.

Stick your personal label here, if provided.

For Examiner's Use	
1	
2	
3	
<b>Total</b>	

This document consists of **6** printed pages, a Supervisor's Report and **1** blank page.



Answer **all** the questions.

Write your answers in the spaces provided.

- 1 **AS1** is a solution of an enzyme found in the digestive system of a farm animal. It digests protein so that the products can be absorbed by the animal.

You are going to investigate the conditions in which the enzyme works best.

**AS2** is a cloudy suspension of protein which becomes colourless when it has been digested.

- Label the five clean test-tubes and place them in the test-tube rack.
- Into each test-tube pour 2 cm depth of **AS2**.
- Using separate pipettes for each chemical, add drops to the test-tubes as described in Table 1.1.

**Table 1.1**

test-tube	dilute hydrochloric acid/drops	dilute sodium hydroxide/drops	deionised water/drops
1	0	10	0
2	0	3	7
3	0	0	10
4	3	0	7
5	10	0	0

- (a) (i) How many drops in total were added to each test-tube of **AS2**?

.....

[1]

- (ii) Suggest **two** reasons why deionised water was added to some of the tubes.

1.....

.....

2.....

.....[2]

- Add 1 cm depth of **AS1** to each test-tube.
- Shake each test-tube gently.
- Leave the test-tubes for approximately 30 minutes.

**You are advised to answer question 2 or 3 while this experiment is working.**

- After 30 minutes examine the contents of each test-tube.

(b) Draw a table to describe these results.

[6]

- Using a pipette add three drops of universal indicator solution only to the test-tubes in which **AS2** has been digested to become clear.

(c) (i) State the colour in these test-tubes after adding universal indicator solution.

.....  
.....[1]

(ii) Suggest the condition in which the enzyme works best.

.....  
.....[1]

(iii) State the part of the digestive system of the animal that has the best conditions for this enzyme.

.....[1]

[Total : 12]

2 **AS3** and **AS4** are weeds.

(a) (i) Make a clear line drawing of a leaf from **AS3**.

[2]

(ii) Make a clear line drawing of a leaf from **AS4**.

[2]

(b) Describe **three** differences that you can see between the leaves of **AS3** and **AS4**.

.....  
.....  
.....  
.....  
.....[3]

(c) (i) Suggest how **AS3** is pollinated.

.....

(ii) Give a reason for your answer.

.....  
.....[2]

(d) (i) Suggest how **AS3** is dispersed.

.....

(ii) Give a reason for your answer.

.....  
.....[2]

[Total : 11]

3 You are going to perform handling tests on two soil samples **AS5** and **AS6**.

(a) Describe the appearance of the soils.

**AS5** .....

.....

**AS6** .....

.....[1]

- (b) (i) • Moisten your hand and rub a sample of **AS5** between your fingers.
- Repeat with **AS6**.

Describe your results.

**AS5** .....

.....

**AS6** .....

.....[2]

- (ii) • Moisten your hand and roll a sample of **AS5** into a ball.
- Repeat with **AS6**.

Describe your results.

**AS5** .....

.....

**AS6** .....

.....[2]

(c) Suggest how the texture of these soils will affect the growth of plants.

.....

.....

.....[2]

[Total : 7]

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**SUPERVISOR'S REPORT**

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

- 1 Was any difficulty experienced in providing the necessary materials? Give brief details.
  
- 2 Did the candidate experience any difficulty during the course of the examination? If so, give brief details. Reference should be made to
  - (a) difficulties arising from faulty specimens;
  - (b) accidents to apparatus or materials;
  - (c) any information that is likely to assist the Examiner, especially if this cannot be discovered from the scripts.

3 Identity of dicotyledonous weed, **AS3** .....

Identity of grass plant, **AS4** .....

*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.**