

Candidate Name \_\_\_\_\_

Centre Number	Candidate Number

## EXAMINATIONS COUNCIL OF ZAMBIA

Examination for General Certificate of Education Ordinary Level

# Agricultural Science

## Paper 3 Practical Test

**5037/3**

**Thursday**

**20 JULY 2017**

Candidates answer on the question paper

Additional materials  
As listed in instructions to supervisors.

**Time 1 hour 30 minutes**

### Instructions to Candidates

Write your **Name, Centre Number and Candidate Number** in the spaces at the top of this page.

There are **four (4) questions** in this paper. Answer **all** questions.

You should show the essential steps in any calculation. Record all experimental results and observations in the spaces provided on the question paper.

Use sharp pencils for your drawings. Coloured pencils or crayons should not be used.

### Information for Candidates

The number of marks is shown in brackets [ ] at the end of each question or part question.

**Cell phones are not allowed in the examination room.**

FOR EXAMINER'S USE	
1	
2	
3	
4	
TOTAL	

Answer all questions

Question 1

You are provided with specimen **AS1**.

- (a) (i) Put half of **AS1** into a clean test tube. Add  $2\text{cm}^3$  of distilled water and shake well.

**Observation**

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

- (ii) Add  $2\text{cm}^3$  of diluted hydrochloric acid to the sample in the test tube and observe.

**Observation**

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

- (b) (i) Take the remaining sample of **AS1** and put it in another clean test tube. Add  $2\text{cm}^3$  of distilled water and shake. Add  $2\text{cm}^3$  of dilute sodium hydroxide.

**Observation**

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

- (ii) From the test in (b)(i) above, which metallic ion is being tested?.

..... [1]

- (c) (i) Name the chemical compound tested in (a) and (b) above.

..... [1]

- (ii) What is the chemical compound, commonly used for in agriculture?.

..... [1]

- (iii) Give **two** examples of other compounds that are used for the same purpose as **AS1**?

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

- (d) How is the metallic element in **AS1** beneficial to:

- (i) Plants

..... [1]

- (iii) Animals

..... [1]

**[Total: 10 marks]**

**Question 2**

You are provided with specimen **AS2** and **AS3** which are pieces obtained from the digestive system of a farm animal.

- (a) Name the part of the stomach from which **AS2** and **AS3** were obtained.

**AS2** ..... [1]

**AS3** ..... [1]

- (b) Examine specimens **AS2** and **AS3** carefully using a magnifying glass.

- (i) What group of animals has a stomach with such structures?

..... [1]

- (ii) Explain how the structures of **AS2** and **AS3** are adapted to their functions in the digestion of food.

**AS2:** .....  
..... [2]

**AS3:** .....  
..... [2]

(c) Why is the knowledge of the digestive system of the group of farm animals you have named in (b) (i) above, important to the farmer?

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

(d) Give **two** types of feed which farmers usually prepare for animals that have stomachs such as **AS2** and **AS3**.

(i) ..... [1]

(ii) ..... [1]

**[Total: 10 marks]**

**Question 3**

You are provided with **AS4** which has a cut. Examine the cut carefully.

(a) (i) What is the name of the cut and what is its purpose?

Name of the cut ..... [1]

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

(ii) What method of propagation is being prepared using **AS4**?

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

(iii) What is the role of **AS4** in this method?

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

(b) Draw a well labelled diagram to show how you would complete this procedure.

[5]

(c) Give **one** example of crop plants which are commonly propagated by this method in Zambia?

.....  
.....

[1]

[Total: 10 marks]

**Question 4**

**AS5** is used in livestock production for artificial inseminations.

(a) Name the instrument **AS5**.

.....

[1]

(b) (i) Describe how **AS5** is used in artificial insemination.

.....  
.....  
.....

[3]

(ii) Give **two** reasons why artificial insemination should be carried out.

.....  
.....

[2]

**(c)** When should artificial insemination be done in animals?

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

**(d) (i)** What is the name of the fluid that is being inseminated?

..... [1]

**(ii)** How is the fluid you have named in **(d) (i)** above, stored?

..... [1]

**(e)** Mention **one** disadvantage of carrying out artificial insemination.

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

**[Total: 10 marks]**

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