

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

4 AUGUST 2016

Candidates answer on the question paper
Additional materials
As listed in instructions to supervisors:

Time: 1 hour 15 minutes

Instructions to candidates

Write your name, centre number and candidate number in the spaces at the top of this page.

There are **three** questions in this paper.

Answer **all** the questions.

Write your answers 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 given 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	
Total	

Answer all questions

- 1 (a) You are provided with **AS1**.
AS1 is a soil sample obtained from a farm which was on sale.
- (i) Put a spatula full of **AS1** into a clean test tube. Add distilled water to one quarter ($\frac{1}{4}$) of the test tube and shake well.
Add 2cm³ dilute hydrochloric acid
Observation: [1]
- (ii) Repeat the above experiment using another clean test tube. Bring the mouth of the test tubes containing **AS1** and that containing lime water tilting gently so that their open ends touch. Observe what happens to the lime water. Do not allow the solutions to mix.
Observation: [1]
- (iii) What is the gas being tested in (a) (ii) above?
..... [1]
- (iv) What is the ion being tested?
..... [1]
- (b) (i) Place the remaining **AS1** into another clean test tube. Add aqueous sodium hydroxide..
Observation: [1]
- (ii) What ion is being tested?
..... [1]
- (c) From the results obtained in (a) and (b) above,
- (i) Name the chemical present in the soil.
..... [1]
- (ii) Give **one** reason why the chemical is used in Agriculture.
.....
..... [1]
- (d) What is the pH of the soil on the farm?
.....
.....
..... [1]

[Total: 9 marks]

2 You are provided with **AS2**.

AS2 is a part of a plant. Examine **AS2** using a hand lens.

(a) Make a large labelled diagram of **AS2**, showing all the visible parts.

[6]

(b) (i) Carry out the procedure commonly used to determine whether the swellings on **AS2** are root knots or root nodules.

Procedure:

.....

..... [1]

Result:: [1]

Identity of the swelling **AS2** [1]

(ii) From your conclusion above, state the type of organism found in the swellings on **AS2** [1]

(iii) What type of relationship exists between the organism in the swelling and **AS2**?

..... [1]

(iv) What is the importance of the organism in **AS2** to Agriculture?

.....

.....

..... [2]

[Total: 13 marks]

- 3 (a) **AS3** is used in poultry production for incubation.
- (i) Identify **AS3** [1]
- (ii) What type of incubation is **AS3** used for?
..... [1]
- (iii) What types of birds are used is the type of incubation named in (a) (ii) above?
..... [1]
- (iv) State an advantage and a disadvantage of the management where **AS3** is used.
- Advantage: [1]
- Disadvantage: [1]
- (b) (i) What equipment is used in place of **AS3** in large scale poultry production?
..... [1]
- (ii) What type of incubation in which the equipment you have mentioned in (b) (i) above is used?
..... [1]
- (iii) Give an advantage of the type of incubation you have named in (b) (i) above.
.....
..... [1]

[Total: 8 marks]