

Candidate's Name:

Signature:

Random No.						Personal No.		

(Do not write your School/Centre Name or Number anywhere on this booklet.)

527/2
AGRICULTURE
Paper 2
2024
2 hours



ALLIANCE JOINT EXAMINATIONS BOARD (AJEB)

Uganda Certificate of Education

Agriculture

Paper two

MOCK

2 Hours

INSTRUCTIONS TO CANDIDATES:

This paper consists of two compulsory examination items.

*Write your answers in the space provided using **blue** or **black** ink.*

Item 1.

A farmer in Luwero District established two poultry houses **house K**, Built on sandy soil and water in drinkers drains quickly. **House L**: Built on clay soil; water pools around drinkers, causing dampness.

The farmer collected soil samples **M** (from House K) and **N** (from House L).

Task:

(a) Conduct tests to compare **water retention** in samples **M** and **N**. Record your methods and observations.

(b) Explain how the soil type in **House L** could lead to poultry health problems.

(c) Advise the farmer on how to improve soil conditions in **both** houses.

Item 2:

A farmer in Iganga grew cassava, soybeans, and groundnuts in three plots for two seasons. After harvest, she noticed:

- **Plot 1 (Cassava):** Stunted growth; yellow leaves.
- **Plot 2 (Soybeans):** Healthy plants but invaded by creeping weed **W**.
- **Plot 3 (Groundnuts):** Fewer weeds but low pod yield.

Specimens **P** (cassava leaves), **Q** (soybean roots), and **W** (weed) were collected.

Task:

(a) (i) Observe **P** and **Q** for signs of nutrient deficiency/pest damage. Record findings.

(ii) Identify **W** and explain why slashing failed to control it.

(b) Recommend a **2-season crop rotation plan** to improve soil fertility and reduce weeds.

CONFIDENTIAL EXAMINER'S MATERIALS LIST

Alliance Joint Examinations Board (AJEB)

Agriculture Paper 2 (Practical)

2024 MOCK Examination

Item 1: Poultry Housing Soil Investigation

Specimens:

1. **Soil Sample M** (Sandy soil from House K) – 500g, dried and sieved.
2. **Soil Sample N** (Clay soil from House L) – 500g, dried and sieved.

Reagents:

1. **Distilled water** (for saturation tests).
2. **Universal indicator solution/pH strips** (optional, for pH testing).

Apparatus:

1. **Funnels** (2) + Filter paper.
2. **Measuring cylinders** (100mL) – to measure drained water.
3. **Beakers** (250mL) – for soil saturation.
4. **Stopwatch** – to record drainage time.
5. **Weighing scale** (0.1g precision).
6. **Rulers** (to measure water pooling depth in clay soil).

Safety Notes:

- Provide gloves for handling soil samples.
- Ensure clear labeling of samples to avoid mix-ups.

Item 2: Crop and Weed Analysis

Specimens:

1. **Specimen P** (Cassava leaves with chlorosis) – Fresh/pressed.
2. **Specimen Q** (Soybean roots with nodules) – Preserved in 70% ethanol.
3. **Specimen W** (Creeping weed, e.g., *Commelina benghalensis*) – Fresh/pressed.

Reagents:

1. **Magnifying lenses/hand lenses** (10x magnification).
2. **Iodine solution** (to test starch in cassava leaves if needed).
3. **Herbicide samples** (e.g., Glyphosate – for demonstration only).

Apparatus:

1. **Dissecting kits** (needles, forceps, scalpels).
2. **Microscopes** (for root nodule observation, if available).
3. **Petri dishes** (for temporary mounting of weed specimens).
4. **White tiles** (for nutrient deficiency spot tests).

Safety Notes:

- Ensure proper ventilation if demonstrating herbicides.
- Preserved roots (ethanol) must be handled with gloves.

General Notes for Examiners:

1. **Item 1:**
 - Pre-test soil samples to confirm water retention rates (sandy soil should drain 3x faster than clay).
 - Provide towels/sponges for accidental spills.
2. **Item 2:**

- Cassava leaves should show clear chlorosis (nitrogen deficiency).
- Weed **W** must exhibit creeping stems/runners to justify slashing resistance.

3. Storage:

- Store soil samples in airtight containers.
- Keep plant specimens refrigerated until 1 hour before the exam.

Confidentiality: This document is strictly for examiners and must not be shared with candidates.