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AGRICULTURE  
Paper 1  
20242  
½  
HOURS

## YAAKA EXAMINATIONS

Uganda Certificate of Education  
AGRICULTURE  
Paper 1  
TIME: 2 hours 30 minutes

### INSTRUCTIONS TO CANDIDATES

- This paper consists of six examination items in all. It has two sections; **A** and **B**.
- Section **A** has two compulsory items.
- Section **B** has two parts; **I** and **II**. Answer one item from each part.
- Respond to four examination items in all. Any additional item(s) answered will not be scored. All responses must be written in the Answer booklet(s) provided.

FOR EXAMINER'S USE ONLY			
SECTION	ITEM	SCORE(S)	EXAMINER'S SIGNATURE
<b>A</b>	1		
	2		
<b>B</b>	3		
	4		
	5		
	6		
<b>TOTAL</b>			

## **Section A**

**Answer all the items in this section.**

### **Item 1**

The farmers in Buliisa district started a sunflower growing project to supply oil extraction companies. However, they are experiencing low seed oil content, early flower wilting, and frequent pest attacks. Most farmers lack access to certified seeds and rely on seeds saved from previous harvests. The soil is degraded due to continuous cropping without rotation or rest, and the farmers have no access to soil testing services.

#### **Task:**

Provide advice to these sunflower farmers on how they can improve the quality and yield of their sunflower crop to meet industry standards.

### **Item 2**

A group of sugarcane farmers in Busoga region have been facing a decline in sugarcane production due to reduced soil fertility, increased pest infestations, and water stress. They use traditional irrigation methods that are inefficient, and the application of fertilizers is inconsistent. The harvested sugarcane is often of low quality, with high fiber content, making it less desirable to sugar processing companies. The farmers are looking for sustainable farming practices to improve their production.

#### **Task:**

As an agricultural officer, write an advisory message on sustainable sugarcane farming practices that would help these farmers improve their yields and quality.

## Section B

**This section has two parts: I and II.**

### **PART I: ANIMAL PRODUCTION**

*Answer only one item from this part.*

#### **Item 3**

Katongole, a poultry farmer in Mukono district, decided to start a free-range chicken farm with 300 layers. The chickens frequently roam outside the farm, exposing them to predators, diseases, and theft. Egg production is inconsistent, and the quality of eggs is poor. Katongole uses traditional feeding methods and does not follow vaccination schedules, leading to frequent disease outbreaks. He wants to transition to a semi-intensive system but needs guidance.

#### **Task:**

Write a newspaper article advising poultry farmers like Katongole on best practices for transitioning from free-range to semi-intensive poultry farming.

#### **Item 4**

A large-scale cattle rancher in Ankole region has experienced an outbreak of East Coast fever, which has significantly reduced his herd. The rancher uses a communal grazing system that allows the mixing of herds from different farms, leading to uncontrolled disease spread. The ranch has poor pasture management and limited access to clean water. The rancher plans to introduce new breeds to increase meat and milk production.

#### **Task:**

Design a sensitization message for cattle ranchers on the importance of disease control and proper herd management.

## **PART II: CROP PRODUCTION**

*Answer only one item from this part.*

### **Item 5**

A horticulture farm in Mbarara district specializes in growing passion fruits, pineapples, and watermelon. Recently, the farm has seen a decline in production due to increased pest infestations, poor soil management, and inconsistent water supply. The fruits are often of poor quality with visible pest damage, making them less marketable. The farm owner wishes to explore organic farming techniques to improve the quality of produce and access premium markets.

#### **Task:**

Write a letter advising the farm owner on organic pest management and soil improvement practices.

### **Item 6**

Mwangi, a farmer in Kabale district, started growing Irish potatoes on his 5-acre farm. He has faced challenges with late blight, low tuber quality, and poor storage facilities that lead to high post-harvest losses. The farm is located on a steep slope, and soil erosion has been a major problem. Mwangi wants to adopt better farming methods to increase his potato yield and improve the storage of his produce.

#### **Task:**

Guide Mwangi on best practices for Irish potato farming and storage techniques to reduce post-harvest losses.

**END**

## MARKING GUIDE TO THE TASKS ABOVE

### Item 1: Advice for Sunflower Farmers to Improve Quality and Yield

1. **Use of Certified Seeds:**
  - Plant certified, high-yielding, disease-resistant sunflower seeds to ensure better growth, oil content, and pest resistance.
2. **Soil Fertility Improvement:**
  - Conduct soil tests and apply balanced fertilizers to address specific nutrient deficiencies. Use organic matter such as compost to enhance soil health.
3. **Crop Rotation and Soil Rest:**
  - Rotate sunflowers with legumes or other non-host crops to break pest and disease cycles and improve soil fertility.
4. **Pest Management:**
  - Employ integrated pest management (IPM) methods, including the use of natural predators, organic pesticides, and timely planting to avoid peak pest seasons.
5. **Proper Water Management:**
  - Use efficient irrigation methods such as drip irrigation to ensure consistent water supply without overwatering.

### Item 2: Sustainable Sugarcane Farming Practices

1. **Soil Fertility Management:**
  - Apply organic manure, compost, and green manure crops to improve soil organic matter and structure. Use appropriate chemical fertilizers based on soil test results.
2. **Efficient Irrigation:**
  - Implement drip or furrow irrigation systems to optimize water use and minimize wastage. Maintain proper water channels to prevent waterlogging.
3. **Pest and Disease Control:**
  - Monitor the fields regularly for pests such as cane borers and manage them using biological control methods and resistant varieties.
4. **Timely Harvesting:**
  - Harvest sugarcane at the optimal time to ensure high sugar content and meet processing company standards.

## **Section B: PART I - ANIMAL PRODUCTION**

### **Item 3: Transitioning from Free-Range to Semi-Intensive Poultry Farming**

#### **1. Housing and Space Management:**

- Build well-ventilated chicken coops with enough space to prevent overcrowding. Ensure that the coops are predator-proof and secure.

#### **2. Feeding Practices:**

- Transition from traditional feeding to balanced commercial feeds that meet the nutritional needs of the layers. Provide clean, fresh water at all times.

#### **3. Vaccination and Biosecurity:**

- Implement a vaccination schedule to protect chickens from common diseases. Practice strict biosecurity measures, such as disinfecting equipment and controlling farm access.

#### **4. Egg Collection and Quality Management:**

- Collect eggs regularly and store them in cool, clean conditions to maintain quality. Avoid letting eggs remain in the nests for long periods.

### **Item 4: Disease Control and Herd Management for Cattle Ranchers**

#### **1. Disease Prevention:**

- Vaccinate cattle against common diseases, including East Coast fever. Regularly inspect cattle for signs of illness and treat promptly.

#### **2. Pasture Management:**

- Practice rotational grazing to prevent overgrazing and maintain healthy pastures. Introduce improved forage species to enhance pasture quality.

#### **3. Herd Health Management:**

- Separate sick animals from the herd to prevent disease spread. Maintain proper records of treatments and vaccinations.

#### **4. Access to Clean Water:**

- Provide clean water sources for cattle to prevent waterborne diseases. Avoid stagnant water which can harbor parasites.

## **Section B: PART II - CROP PRODUCTION**

### **Item 5: Organic Pest Management and Soil Improvement for Horticulture**

#### **1. Organic Pest Control:**

- Use natural pest repellents such as neem oil and garlic sprays. Introduce beneficial insects like ladybugs to control pest populations.

#### **2. Soil Improvement Practices:**

- Apply organic compost, manure, and cover crops to enhance soil fertility and structure. Avoid synthetic fertilizers and pesticides that degrade soil quality.

#### **3. Water Management:**

- Use drip irrigation systems to ensure efficient water use and reduce the spread of diseases through water splash.

#### **4. Post-Harvest Handling:**

- Harvest fruits at the right maturity stage and store them in clean, cool conditions to maintain quality.

## **Item 6: Best Practices for Irish Potato Farming and Storage**

### **1. Disease Management:**

- Plant certified disease-free potato seed tubers. Rotate with non-solanaceous crops to break disease cycles.

### **2. Soil Conservation:**

- Use contour farming and terracing to reduce soil erosion on sloped land. Mulch to retain soil moisture and improve soil structure.

### **3. Proper Storage Techniques:**

- Store potatoes in well-ventilated, dark, and cool conditions to prevent sprouting and spoilage. Avoid storing damaged or diseased tubers.

### **4. Timely Harvesting:**

- Harvest potatoes at the right maturity to reduce losses and enhance storage quality. Handle tubers carefully to avoid bruising.



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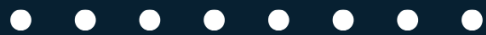
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