

527/1
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
A	1		
	2		
B	3		
	4		
	5		
	6		
TOTAL			

Section A
Answer all the items in this section.

Item 1

Kaggwa, a maize farmer in Kiboga district, has been growing maize on 10 acres for the last three years. Recently, he noticed a decline in yield despite using improved seeds and fertilizers. The leaves of his maize plants turned yellow, and the stems were weak, often falling before maturity. Additionally, the market price of maize has been unstable, causing him to incur losses. Kaggwa uses traditional farming practices and has no access to modern agricultural machinery, relying on manual labor, which slows his operations.

Task:

Advise Kaggwa on modern maize farming techniques that can help him improve his yields and reduce production costs.

Item 2

The Soroti Vegetable Growers Association (SVGA) has been involved in producing a variety of vegetables such as cabbages, tomatoes, and eggplants. However, they have recently observed stunted growth, wilting of plants, and a high rate of pest infestation. Some fields have patches of unhealthy plants with discolored leaves, and a foul smell emanates from the soil, indicating poor drainage and possible soil diseases. The group aims to supply high-quality vegetables to the local market and possibly expand to regional markets.

Task:

As an agricultural extension officer, provide guidelines to SVGA on how to manage soil health and improve vegetable production.

Section B
This section has two parts: I and II.
PART I: ANIMAL PRODUCTION
Answer only one item from this part.

Item 3

Sarah, a goat farmer in Nakasongola district, has been raising local breed goats using an extensive grazing system. The goats frequently suffer from malnutrition, parasites, and other diseases. The grazing area is degraded with limited pasture, forcing her goats to feed on low-quality forage. Sarah intends to improve her goat herd by introducing exotic breeds to increase milk and meat production but lacks the knowledge of proper management practices and feeding requirements for the new breeds.

Task:

Write an article for a local agricultural magazine educating goat farmers like Sarah on best practices for managing and feeding exotic goats in Uganda.

Item 4

Omara, a fish farmer in Gulu district, established a small fish pond with tilapia and catfish. However, he has faced numerous challenges, including water quality issues, fish diseases, and poor growth rates. The pond is not well-managed, and water levels fluctuate due to poor drainage systems. Omara has been feeding his fish with kitchen scraps, which are not sufficient to meet the nutritional needs of the fish. Additionally, theft of fish from the pond has also been a recurring problem.

Task:

Design a sensitization message that can guide fish farmers in Gulu district on best practices for managing fish ponds and improving fish production.

PART II: CROP PRODUCTION
Answer only one item from this part.

Item 5

Mukasa, a banana farmer in Mubende district, has been experiencing low yields and poor quality bananas over the past few seasons. His banana plantation is infested with weevils, and the bananas often have small bunch sizes with unappealing color and texture. The plantation is poorly managed, with overgrown weeds and poor soil fertility due to continuous monocropping. Mukasa aims to rejuvenate his plantation and supply quality bananas to urban markets.

Task:

Write a letter advising Mukasa on integrated pest management and soil fertility improvement practices to enhance banana production.

Item 6

Nalongo, a cassava farmer in Kyenjojo district, expanded her farm to 20 acres after obtaining a loan. However, her cassava plants are showing signs of leaf curling, stunted growth, and root rot, significantly affecting the yield. She uses traditional planting methods and does not adhere to recommended agronomic practices. Nalongo is eager to learn about improved farming techniques that can help her increase her cassava yield and repay her loan.

Task:

Guide Nalongo on best agronomic practices for cassava production to achieve high yields and maintain soil health.

END

MARKING GUIDE TO THE TASKS ABOVE

Section A

Item 1: Advice for Kaggwa on Modern Maize Farming Techniques

1. **Use of Improved Seeds:**
 - Use certified, high-yielding, disease-resistant maize varieties suitable for the local climate. This will help improve yields and withstand common pests and diseases.
2. **Soil Testing and Fertilization:**
 - Conduct soil testing to determine the specific nutrient needs of the soil. Use the appropriate fertilizers based on the soil test results, such as nitrogen, phosphorus, and potassium, to improve soil fertility and crop health.
3. **Adopt Conservation Agriculture:**
 - Use conservation techniques such as minimum tillage, crop rotation, and cover cropping to improve soil structure and reduce erosion. This will also enhance moisture retention and reduce labor costs.
4. **Pest and Disease Management:**
 - Implement integrated pest management (IPM) techniques, including crop rotation, the use of natural predators, and resistant varieties to control pests and diseases.
5. **Mechanization:**
 - Explore opportunities to lease or hire agricultural machinery like planters, weeders, and harvesters to reduce manual labor and enhance operational efficiency.
6. **Market Diversification:**
 - Engage in value addition, such as milling or packaging maize flour, to fetch better prices. Identify alternative markets to reduce dependence on local buyers and avoid price fluctuations.

Item 2: Guidelines for Soroti Vegetable Growers Association (SVGA)

1. **Soil Health Improvement:**
 - Conduct soil tests and amend soils with organic matter such as compost to improve drainage and fertility. Implement crop rotation to prevent soil-borne diseases and improve soil structure.
2. **Proper Drainage Management:**
 - Design and maintain proper drainage systems to prevent waterlogging and root diseases. Raised beds can also improve soil aeration and drainage.
3. **Integrated Pest Management (IPM):**
 - Use biological control agents, such as beneficial insects, to manage pests. Employ cultural practices like removing diseased plants and crop rotation to disrupt pest cycles.
4. **Irrigation Management:**
 - Invest in efficient irrigation systems like drip or sprinkler irrigation to ensure consistent water supply without waterlogging the soil.
5. **Training and Capacity Building:**
 - Provide regular training for farmers on pest management, soil health, and best agricultural practices to improve the quality of vegetable production.

Section B: PART I - ANIMAL PRODUCTION

Item 3: Best Practices for Managing and Feeding Exotic Goats

1. Improved Feeding Practices:

- Provide a balanced diet that includes forage, concentrates, and mineral supplements. Incorporate legumes such as alfalfa into the diet to improve protein intake.

2. Proper Housing and Hygiene:

- Construct well-ventilated goat shelters with sufficient space to avoid overcrowding. Maintain clean and dry bedding to prevent respiratory infections and parasites.

3. Disease Management:

- Implement regular vaccination schedules and deworming to control common goat diseases. Keep records of veterinary interventions for better management.

4. Breeding Management:

- Use controlled breeding to enhance the quality of the herd. Avoid inbreeding, which can lead to genetic disorders and poor performance.

5. Rotational Grazing:

- Practice rotational grazing to prevent pasture degradation and improve forage availability. It also helps break the cycle of internal parasites.

Item 4: Best Practices for Fish Pond Management

1. Water Quality Management:

- Regularly monitor and maintain the water quality by ensuring optimal oxygen levels, pH, and temperature. Avoid the use of contaminated water sources.

2. Feeding Practices:

- Provide nutritionally balanced commercial feeds instead of kitchen scraps to meet the fish's dietary needs. Feed the fish at regular intervals and monitor feed consumption to avoid overfeeding.

3. Pond Maintenance:

- Regularly clean the pond to remove excess organic matter that can lead to poor water quality. Ensure proper drainage and water flow to prevent stagnation.

4. Security Measures:

- Install security measures such as fencing and net covers to prevent theft and predator attacks. Engage community surveillance to protect the pond.

5. Disease Control:

- Implement biosecurity measures, including quarantine for new fish stock and regular health checks, to prevent disease outbreaks.

Section B: PART II - CROP PRODUCTION

Item 5: Integrated Pest and Soil Fertility Improvement for Banana Production

1. Pest Management:

- Use pheromone traps, banana weevil traps, and clean planting materials to reduce pest infestations. Regularly remove infected plants and apply organic pest control methods.

2. Soil Fertility Improvement:

- Incorporate organic manure, compost, and mulch to improve soil structure and fertility. Practice crop rotation with leguminous cover crops to enhance soil nitrogen content.

3. Weed Control:

- Use mulching to suppress weed growth and retain soil moisture. Manual weeding should be done carefully to avoid damaging banana roots.

4. Pruning and Debris Management:

- Prune banana plants regularly to remove old and diseased leaves, improving air circulation and reducing disease risk.

Item 6: Best Agronomic Practices for Cassava Production

1. Use of Improved Varieties:

- Select disease-resistant and high-yielding cassava varieties suitable for the local environment to reduce the impact of common diseases.

2. Proper Land Preparation:

- Prepare the land thoroughly by plowing and harrowing to create a fine seedbed. Practice contour farming on slopes to prevent erosion.

3. Planting Techniques:

- Plant cassava cuttings at the recommended spacing of 1 meter between rows and 0.8 meters between plants. Ensure the cuttings are healthy and free from disease.

4. Pest and Disease Control:

- Use integrated pest management techniques, including crop rotation and biological controls, to reduce pest and disease pressure.

5. Timely Harvesting and Storage:

- Harvest cassava at the correct maturity stage to avoid losses. Store harvested roots in well-ventilated, cool places to prolong shelf life.



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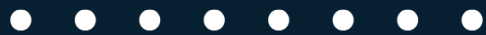
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