

Name:.....Centre/IndexNo.....

School:.....Signature.....

P515/1
PRINCIPLES
AND PRACTICES
OF AGRICULTURE
PAPER 1
(Theory)
July/August 2026
3 hours



WAKISSHA JOINT MOCK EXAMINATIONS
Uganda Advanced Certificate of Education
PRINCIPLES AND PRACTICES OF AGRICULTURE
PAPER 1
(Theory)
3 hours

INSTRUCTIONS TO CANDIDATES:

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



SECTION A

Respond to both items in this section.

Item 1

Mr. Kakeeto has just obtained a loan from a financial company dealing in Agro-loans with an interest rate of 35%. Together with Mr. Mpanga they decided to start a small scale dairy farming venture. An extension worker who is deployed in the area made an inspection on their small farm and was surprised to learn that their production from the farm was far below the expected milk yield. Their milk quality was good but the milk was kept in dirty containers and usually left open in a living room. This has fetched them low prices.

According to the extension worker, he observed that milk was stored in a metallic container which was made from copper element. He made a report that the milk can be processed into different products such as ghee, butter, yoghurt and ice cream among others but recommended them to make cheese. These products though expensive to make can be sold at a higher price than ordinary milk.

Task

- Assuming you are the extension worker, advise Mr. Kakeeto and his colleague on how they can ensure maximum returns from their small dairy farm.
- Which steps would you recommend to give Mr. Kakeeto in order to produce a high quality product for the clients within his village?

Item 2

Bua has a mixed farm in Uganda practicing tomato production alongside dairy cattle rearing. He has recently experienced a steady decline in productivity despite continued use of fertilizers and routine management practices on the farm.

In the tomato garden, plants exhibit persistent wilting during day, even soil appears moist and only partially recover in the evening. Leaves are yellowing with some showing scorched edges, while overall plants growth remains stunted and fruits formation is poor. An extension worker using a simple microscope observes that many leaf cells appear flaccid with reduced internal volume. The internal cell structures are poorly defined and it's suspected that there is low energy production.

The dairy cattle on the other hand show reduced milk yield, gradual weight loss and general body weakness despite being fed regularly. Some animals have poorly developed muscles, appear fatigued after minimal movements and show slow growth rates. Others have rough hair coats and reduced appetite. The farmer does not know how these challenges may be coming about and needs your guidance since the veterinary officer has linked these challenges to structural and functional in-efficiencies affecting the digestion, circulation and metabolic processes.

Task

- Explain the causes of low returns from Bua's mixed farm.
- Suggest with reasons how Bua can improve returns from his enterprises.

SECTION B

Part 1 .

Respond to one item in this part.

Item 3

Kakamega has a piece of land measuring 100 m x 75 m that he would like to fence using a three strand barbed wire. He intends to leave a spacing of 5 metres between the posts. He bought 180 posts and would like to know if they are enough.

His animals are often observed struggling for water around the watering source. He gathers his animals in the kraal with uneven rough finish floor. During the dry season, they move to the nearby area in search for pastures with other animals from the neighborhood causing loss of animals on the farm.

While controlling ticks, he uses 30 litres of a mixed acaricide solution to spray his 25 cows. However one cow is supposed to use 3 litres for proper wetting.

As soon as the rains start, he grazes his cattle on young fresh lush grass for better yields. The animals' performance per week is mostly affected by feeding schedule at his farm as below;

Weekly Feeding Schedule

Days of the week	Feed/ per animal weight 450kg	Amount of water given/day	Milk per day
Monday – Wednesday	50kg of grass and 6kg of dairy meal	80 litres	15litres/cow/day
Thursday – Friday	33kg of grass and 3kg of dairy meal	45 litres	9 litres/cow/day
Saturday – Sunday	5kg of grass and 1kg of dairy meal	18 litres	6/litres/cow/day

Bulls with bigger scrotum graze freely with adult female cows and often the calves suckle their mothers continuously.

At milking, some stains of blood and clots are observed in the milk.

The farmers milk the animals at any time of the day to have access to milk always. The milk is always contaminated with fur and other foreign materials. He has fetched low milk production throughout on his farm.

Tasks

- Explain the causes of the observations and the effects of the practices at his farm on the yields.
- With reasons, suggest measures Kakamega can take to improve productivity on his farm.

Item 4

Mr. Kisonde wants to start up a poultry project with the aim of increasing household income. He selected a bushy place within his land and cleared it using a hoe to establish a deep litter house. He constructed the house with 14 m² of floor space to keep his 300 layers. However, each adult layer bird occupies 0.14 m² of floor space.

His poultry house had strong unblockable door and a leak proof roof. He introduced new chicks a day after preparing his new brooder. He purchased 300 chicks as a start-up stock and at seven months, 40% his layers had started laying. He discovered that quarter of his birds were males though on buying them, he was informed that they were all females. Some birds were seen with fresh wounds around the vent with few features around the wings and damaged combs. He collects eggs from the deep litter house with 10 eggs being broken after every three days. These eggs were evenly distributed around the deep litter house.

Adequate drinkers for 300 chicks and about 6 feeders were placed in the brooder with water and layer's mash placed respectively. Two of his layers were found dead with twisted neck and some few were shivering and inactive.

Task

- Explain the causes of low productivity of the birds.
- How can the challenges be overcome to ensure high productivity of the birds?

Part II

Respond to **one** item in this part.

ITEM 5

Bogere hired two hectares of a gently sloping land on which he wants to establish a banana plantation for two years. He has bought 2700 suckers of East African highland variety to be planted on his hired land using a recommended spacing of 3 m x 3 m for proper yields.

The upper part of the land consists of exposed roots and also short trees whose roots are exposed. Along the slope, there are few pieces of plant remains in the soil. The area usually experiences prolonged dry spells and inadequate rain even during the wet seasons.

According to data coming from the district agriculture office, this area is prone to banana weevils and a high risk of banana wilt. And according to information coming in from Kawanda NARO research Centre, Bananas grow well in soils with pH 6 to 7, they require a minimum rainfall of 1,200 – 2,500 mm/year and good fertility.

He would like to use organic manures to boost the fertility. He has bought 72,000 kg of well-rotted manure to apply on his land.

Samples of soil picked from the bottom of the slope are dark in colour, plastic and form a ribbon on wetting and rolling between palms. Laboratory analysis of the soil samples from the land showed that the pH soil is 2 and the soil retains a lot of water.

Each banana plant requires 40 kg of well-rotted manure per year. He is to harvest his bananas using sharp knives to cut through the stem. There after he will pile them under sunshine for like two days while waiting for the vehicle to transport them to the city.

Task:

- Explain the causes of poor yields at Mr. Bogere's farm.
- Suggest the measures that he could employ to maximize productivity on his farm.

ITEM 6

A group of young farmers initiated a bean production project on one hectare on communal land that they obtained on mutual agreement with one member to supply a local school. However, the field had previously been over cultivated and crop residues were usually burnt before planting. The soil appeared loose and prone to erosion especially after heavy rains. At planting, different members used seeds from various sources some of which had been stored for long periods. Seeds were planted at varying depth and in some areas seedlings emerged late or not at all. Plant populations were inconsistent across the field. As the crops developed, some plants showed poor growth and pale leaves. They applied 4 litres of a foliar fertilizer per hectare to boost vegetative growth. Weeds were removed late allowing them to out compete the crops. Signs of pest damage were evident but control measures were delayed. In addition, no clear schedule existed for field operations leading to untimely practices.

During harvesting, some pods shattered before collection while others were harvested when still moist. After harvesting, the beans were heaped on the ground without proper drying leading to discoloration and moulds development.

Available information; 0.8 litres of a foliar fertilizer should be applied per acre. One hectare is equal to 2.47 acres and the planting depth of beans should be between 4 – 5 cm in loose sandy soils.

Task:

- Explain the causes of low yields of beans at the farm.
- How can the challenges be overcome to ensure high bean production?

END