



**KAMSSA**

**SET TWO**

**KAMSSA PRE REGISTRATION EXAMINATIONS 2026**

**Uganda Advanced Certificate of Education**

**PRINCIPLES AND PRACTICES OF AGRICULTURE**

**Paper 1 (Theory)**

**Time: 3 Hours**

## **INSTRUCTIONS**

- *This paper contains **SIX** examination items which are scenario based with sections A and B.*
- *Section A has **TWO** items which are all compulsory.*
- *Section B has **TWO** parts; 1 and 11. Attempt one item from each part.*
- *Attempt **FOUR** items in all*
- *Indicate the items attempted clearly and write responses for each item starting on a fresh page.*

## **SECTION A**

*All items in this section are **compulsory***

### **ITEM 1 (VALUE ADDITION)**

Kyangwali village is occupied by dairy farmers who obtain high quantities of milk from their herds. These farmers however get little profits from their projects since they rarely see people who come to buy their product. This forced them to come up with an idea of making flavored yoghurt from the milk that remains unsold with an aim of increasing their household incomes while providing safe and nutritious products to the local market.

During the first month of production, these farmers became concerned when some batches of their yoghurt released watery liquid shortly after fermentation while others tasted uneven with some cups sweeter than others despite using the same ingredients. The colour of their product was also inconsistent making it look less appealing. Furthermore, yoghurt spoiled quickly even when stored in cool conditions and the production costs were high. In addition, some of the packages leaked leading to contamination and leakage which further reduced the quality and marketability of their product.

### **Task:**

As an Agriculture student,

- a) Advise these farmers on the appropriate steps they should take to produce high quality flavored yoghurt from their fresh milk.

b) Explain for these farmers how to achieve the best from their project.

## **ITEM 2 (AGRICULTURAL BIOLOGY)**

A mixed farm in Uganda practicing Tomato production alongside dairy cattle rearing has recently experienced a steady decline in productivity despite continued use of fertilizers and routine management practices.

In the Tomato Garden, plants exhibit persistent wilting during day even when soils appear moist and only partially recover in the evening. Leaves are yellowing with some showing scorched edge while overall plant growth remains stunted and fruit 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 is 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 movement and show slow growth rates, others have rough hair coats and reduced appetite. The farmer doesn't know how these challenges may be coming about and needs your guidance since the veterinary officer has linked these challenges to structural and functional inefficiencies effecting digestion, circulation and metabolic process.

### **Task**

- a) Using your cytological knowledge, explain to this farmer how he can improve the cellular function and crop productivity.
- b) Advise the farmer on how he can improve on the health and productivity of his dairy farm.

## **SECTION B**

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

*Attempt any **one** item from this part.*

## **ITEM 3**

Martin established a fish farming project he selected a bushy site far away from his home for pond construction and constructed his pond on sandy soils to provide room for his fish. He bought fingerlings from an open market and introduced them into the pond a day after application of manure to encourage growth of planktons for feeding fish

After some time, some plants were observed growing in pond water which he claimed to act as fish feeds. This forced him to feed his fish once a day. Upon close monitoring, some fish were observed with swollen gills, rotten fins and reduced feeding while others were seen eaten by unknown organisms on pond sides.

The little fish that were present in the pond were harvested at the age of two months using a basin. The harvested fish was packed in tight black polythene and taken home for consumption leading to losses.

### **Task**

Guide Martin on how to manage fish better for increased production.

#### **ITEM 4**

A farmer in Western Uganda started a dairy enterprise to supply milk to a nearby processing plant. Within a few months, the cows were frequently observed panting and crowding near openings of the shed during the day while water often stagnated around the housing area after cleaning. Some animals showed uneven body sizes and low milk yield despite being of similar age and a few developed recurrent illnesses shortly after purchase. New animals introduced into the herd were kept together with the rest immediately.

As production continued, the cows depended mainly on natural pastures even during dry periods and milk output steadily declined. Some animals developed swollen udder and produced milk with flakes while ticks were commonly seen on their bodies. Farm workers relied on memory to manage breeding and milk production and the animals often competed for limited feeding and resting space.

At milking time, milk was sometimes found with visible dirt particles and was stored in ordinary containers at room temperature for several hours before delivery. The quantity of milk supplied to the buyers fluctuated greatly from day to day making it difficult for him to maintain a steady market.

#### **Task**

Advise this farmer on how he can achieve maximum productivity from his enterprise.

### **PART II: CROP PRODUCTION**

*Attempt any **one** item from this part.*

#### **ITEM 5**

A group of youth farmers initiated a bean production project on communal land 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 and no clear agreements existed among members regarding land use responsibilities.

At planting, different members used seeds from various sources some of which had been stored for long periods, seeds were planted at varying depths 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. 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 mould development.

#### **Task**

As an agriculturalist with knowledge on crop production, explain how these farmers can achieve the best from their enterprises.

## **ITEM 6**

A farmer in Northern Uganda expanded maize production onto a newly acquired land to meet the increasing market demand. However, crop performance has been inconsistent. Parts of the field produce stunted crops with yellowish leaves while other sections are water logged after rain fall. The farmer has no documented ownership of the land and occasionally faces disputes with neighbouring users which delays timely field operations.

During planting, seeds were broadcasted over the field and germination was uneven with large gaps observed in some areas. In certain sections, seeds failed to emerge completely. Some seedlings were later observed to be weak and easily uprooted by wind.

As the crops grew, weeds dominated the field in the early stages and maize plants showed signs of nutrient deficiency. Unknown insects were seen but couldn't be identified by the farmer. The crop spacing remains irregular resulting in overcrowding in some areas and sparse stands in others. At harvest, some cobs had started rotting in the field and others were attacked by storage pests shortly after being kept in a leaking store.

### **Task**

Explain how this farmer can ensure increased productivity and profitability from maize production.

**END**