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PRINCIPLES AND  
PRACTICES OF  
AGRICULTURE  
Paper 1  
AUGUST 2024  
2 ½ Hours



## ***UNNASE MOCK EXAMINATIONS 2024***

**UGANDA CERTIFICATE OF EDUCATION  
PRINCIPLES AND PRACTICES OF AGRICULTURE**

**PAPER 1**

**TIME: 2 HOURS 30 MINUTES**

### **INSTRUCTIONS TO CANDIDATES:**

- This paper has three sections **A**, **B** and **C**.
- It consists of **six** items.
- Section **A** is compulsory.
- Answer one item from section **B** and one from section **C**.

**SECTION A: (COMPULSORY)****SOIL SCIENCE AND VALUE ADDITION****ITEM 1:**

Lule bought an acre of land for crop growing purpose. He hired a soil scientist who conducted tests to confirm the suitability of soil for crop growing. His findings are summarised in the table below.

Soil parameter	pH	Organic matter	Soil water	Drainage capacity	Living organisms
Results	6.8	85%	68%	60%	Abundant

He concluded that the soil is suitable for crop growing.

Lule started crop growing. He has since used the soil close to ten years to grow maize and there is no season he has not grown the crop. He clears the land by setting the bushes on fire and after which he hires a tractor to plough the land every season. He has applied sulphate of ammonia to boost his crop growth every season. The soil surface is compact and whenever it rains water remains stagnant in the garden some of the maize crops have developed purple colouration on their leaves. Of recent, some two people have come out to claim ownership of the same land Lule uses. Lule enjoyed high yields in the first season but since then he has suffered great losses due to decline in yields in the subsequent seasons. He again hired a soil scientist and his findings are summarised in the table below.

Soil parameter	pH	Organic matter	Soil water	Drainage capacity	Living organisms
Results	2.0	36%	38%	40%	less

**TASK:**

Lule has hired you as an expert in soil science, advise him on what he should do to improve his yields.

**ITEM 2:**

Piene grows a new variety of simsim which has a good taste and highly nutritious. After harvesting, he put the seeds on a dry firm ground to dry under the sun. The dried simsim seeds were then scooped from the ground and packed in large polythenes. The polythenes were then transferred in store which had cracks on its walls. The following day the polythenes of simsim were packed on open Lorries and transported to market centres. Piene then started packing the simsim in small packaging to ease selling. Despite the variety being good, Piene receives few people



who come to buy his simsim, those who buy it appreciate its good taste but also complain that it's gritty. They can't also tell the quantities and date of expiry of the simsim they buy. The small organization where Piene and other farmers keep their money closed suddenly and the operators disappeared with Piene's savings he then obtained small loans from different money lenders to enable him widen his business and took some of the money in betting with hope that he will get double the money he has staked. He plans to setup a simple processing plant for his simsim but he lacks the resources to do so.

**TASK:**

As a graduate of agriculture, advise Piene on how he can overcome his challenges in order to benefit from his business.

**SECTION B:**

**LIVESTOCK PRODUCTION**

**ITEM 3:**

Musa is a fish farmer in Kyando village, he constructed his pond and embarked on the journey of rearing fish he is seen every three days topping up the water in the pond as he prepares to introduce fingerlings in the pond. He received fingerlings from a nearby fish farmer and transported them to his farm using sealed jerry cans to keep them from escaping. He then poured the fingerlings in the pond. He has two attendants who feed fish on different days and at different times. The soil on the dykes falls in the pond water each time an attendant walks on it. He applies farmyard manure every week to fertilize the pond. A green mat of plants covers the pond. The attendants kill two snakes every after two days around the pond area. When Musa visited the pond he found some fish that had died with their mouths open other fish that were sampled had white patches on gills and some had discoloured skins. The average fish weight was taken after a month and it was 500 grams the average weight was taken again after 3 months and it was 600grams. Musa is frustrated with his investment.

**TASK:**

As a trained animal scientist who has been hired by Musa, write a set of recommendations you can give to Musa to enable him benefit from his investment

**ITEM 4:**

Ruhweza rears cattle, poultry and goats all at the same farm. He has suffered losses due to frequent repairs of the fence at the section where cattle are kept. The kids born at the farm are very healthy and fed well but the males grow slowly. 8 calves are kept in each calf pen and the urine in the calf pens remains stagnant. Birds are fed only on maize bran. Eggs from poultry houses are collected on a weekly basis. In the brooder, chicks are seen overcrowding in corners. One of the workers at the dairy section is nursing wounds he sustained from the cow during milking, the cattle have developed appetite for non-edible materials. After mating

with the bulls at the farm, the cows produce off springs with a slow growth rate. The goats and cattle have small wounds on their skins and hides.

**TASK:**

You have been consulted by Mr Ruhweza, assist him on how he can improve production at his farm.

**SECTION C:**

**CROP PRODUCTION**

**ITEM 5:**

Milly established a nursery bed of tomatoes in an area where she had previously grown egg plants, she cleared the area and made nursery beds that measure 4meters wide, she carried out deep ploughing and she immediately scattered the seeds in the nursery beds. She moves for about 15 minutes to fetch water she uses to irrigate the seedlings 6 times a day. On germination, seedlings were congested and she maintained them since she was going to plant in a large area. Some seedlings started toppling over since they had rotten stem bases. She uprooted the mature seedlings and wrapped them in a sack and transported them to the main garden where she had made holes at a spacing of 120cm by 120cm. The leaves of some tomatoes had dry patches, the mature tomatoes that where harvested had a lot of soil and some had started rotting. The yields she got where low than what she had expected.

**TASK:**

Write information you will give to Milly to assist her improve the yields in her garden.

**ITEM 6:**

Benjamin decided to grow bananas. He prepared the garden during the wet season, he obtained banana suckers from James's garden and he planted them in his garden as they were. Some maize plants he never planted were seen growing amongst his banana plants, each mature banana plant had 6 suckers growing at the base of the stem, all plants had many leaves on them. Benjamin used a rusty panga to cut off the banana fibres and he used a lot of energy during the exercise. Some of the banana plants had bent stems. During harvesting, he cut the stem 50cms off the ground. The base of the stem of the harvested banana had dark tunnels running through it. He continuously suffered losses due to constantly low yields.

**TASK:**

Benjamin has hired you to be his farm manager, write your work plan you will use to improve yields at his farm.

**END**