THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

034/1 **AGRICULTURE 1**

Time : 3 Hours **ANSWERS** **Year : 2022**

Instructions

1. This paper consists of section A, B and C.
2. Answer **all** questions in section A and B and **two (2)** questions from section C.
3. Communication devices and any unauthorised materials are **not** allowed in the examination room.
4. Write your **Examination Number** on every page of your answer booklet(s).

1. For each of the items (i)–(x), choose the correct answer from the given alternatives and write its letter beside the item number in the answer booklet provided.

(i) Why do you think making hay and silage is important in dairy cattle farming?
A Hay and silage are very nutritious than green fodder.
B Hay and silage are very good in preventing bloat.
C Hay and silage can be used during dry season.
D Hay and silage are used for faltering dairy cattle.
E Hay and silage are very useful during the rainy season.

Correct answer: C Hay and silage can be used during dry season
Reason: Hay and silage are preserved feeds which help farmers feed dairy cattle during times when green fodder is not available, especially in the dry season.

(ii) Which factor influences soil formation by affecting the speed of physical and chemical weathering processes?
A Climate
B Living organism
C Time
D Topography
E Parent material

Correct answer: A Climate
Reason: Climate, particularly rainfall and temperature, controls the rate of weathering and soil development.

(iii) What is the use of a rip saw?
A Cutting metals
B Cutting across wood grain
C Cutting along wood grain
D Sawing small works such as dovetail joints
E Cutting tenons for joining wood

Correct answer: C Cutting along wood grain
Reason: A rip saw is specifically designed to cut wood parallel to its grain.

(iv) Which farm machine would you use for primary processing of sisal leaves?

A Harvester

B Mower

C Roller

D Decorticator

E Pulper

Correct answer: D Decorticator

Reason: A decorticator is used for stripping sisal leaves to extract fibers.

(v) Scientists do researches in finding a trust of some running. What is the first step to be done after setting an experiment?

A Data interpretation

B Conclusion

C Formulating hypothesis

D Asking questions

E Observation and data recording

Correct answer: E Observation and data recording

Reason: After conducting an experiment, the first action is to observe results and record data before interpretation.

(vi) Crop pests control methods have different mechanism actions. Which method is used to control pest by breaking their life cycles?

A Biological method

B Cultural method

C Chemical method

D Mechanical method

E Legislative method

Correct answer: B Cultural method

Reason: Cultural methods such as crop rotation break pest life cycles by removing continuous availability of host crops.

(vii) Why is it recommended to use manure in the fish pond?

A It encourages the development of natural foods for fish in the pond.

B It changes water colour for protection of fish.

C It fertilizes plants along the fish pond.

D It facilitates digestion of foods in the fish alimentary canal.

E It encourages growth of pastures along the fish pond.

Correct answer: A It encourages the development of natural foods for fish in the pond

Reason: Manure increases nutrient levels in ponds, which enhances the growth of plankton that serve as natural fish food.

(viii) Green manuring is a practice where by a crop is grown on the piece of land and is then incorporated into the soil for the purpose of improving soil fertility. Which of the following are qualities of a green manuring crop?

(1) Should be able to grow in poor soil

(2) Should not be an alternative host of insect pests

(3) Should not compete with the crop for nutrients

(4) Should be perennial grasses

(5) Should be able to produce a large quantity of vegetative material

A (1) and (3)

B (2) and (3)

C (3) and (4)

D (1) and (5)

E (4) and (5)

Correct answer: D (1) and (5)

Reason: Good green manure crops grow in poor soils and produce large biomass to add organic matter to the soil.

(ix) Mr. Yona visited a dairy unit and decided to buy a litre of milk. Which type of price did he pay?

A Import price

B Farm gate price

C Wholesale price

D Retail price

E Export price

Correct answer: D Retail price

Reason: Buying milk in small quantity for consumption is retail price.

(x) What is the price of management as applied in production?

A Rent

B Capital

C Wage

D Interest

E Profit

Correct answer: C Wage

Reason: In production, management is a form of labour, and its price is paid as wages.

2. Match the items in List A with the responses in List B by writing the letter of the correct response beside the item number in the answer booklet provided.

List A	**List B**
(i) Mating animals which are closely related.	D In breeding
(ii) Mating of distantly related animals.	F Outbreeding
(iii) Mating unrelated animals of the same breed.	E Line breeding
(iv) Mating of two animals of different breeds.	B Cross breeding
(v) Mating between the female animal of low grade stock with pure breed male.	A Upgrading

3. In five points, justify the statement that "Agriculture still remains to be the backbone of Tanzania's economy as the majority of people live in rural areas and engage in crop and livestock production."

   Agriculture remains the backbone of Tanzania's economy because it provides employment to the majority of the rural population who rely on crop and livestock farming as their main livelihood.

   It contributes significantly to the country's GDP by generating income from the sale of agricultural products both locally and internationally.

   Agriculture supports the industrial sector by supplying raw materials such as cotton for textiles and sugarcane for sugar industries.

   It is a major source of foreign exchange earnings through the export of crops like coffee, tea, cashew nuts, and tobacco.

   Agriculture also ensures food security for the nation by providing staple crops like maize, rice, and cassava for household consumption.

4. Land degradation is the most serious problem in many arable lands of Tanzania. Briefly explain any five human activities that facilitate land degradation.
   Deforestation leads to land degradation because the removal of trees exposes soil to erosion by wind and water.

   Overgrazing by livestock depletes vegetation cover, leaving soil bare and prone to erosion.

   Poor farming practices such as monocropping and continuous cultivation reduce soil fertility and increase degradation.

   Mining activities disturb the soil structure and leave behind degraded land that is unsuitable for agriculture.

   Overuse of chemical fertilizers and pesticides contributes to soil acidification and reduces soil quality over time.

5. (a) Differentiate the terms plant population and seed rate.
   Plant population refers to the total number of plants present per unit area of land, usually expressed as plants per hectare. Seed rate refers to the amount of seed required to plant a specific area of land, usually expressed in kilograms per hectare.

(b) Most of the farmers think that, all crops are always planted at the same spacing. How can you change the mind of these farmers? Briefly explain by giving seven points.
Different crops have different growth habits, so spacing must vary to suit each crop's needs.

Crops with larger canopies like maize require wider spacing to reduce competition for sunlight.

Root crops such as cassava and potatoes need wider spacing to allow tuber development.

Leguminous crops like beans need closer spacing to maximize yield while maintaining soil fertility.

Some crops like rice require very close spacing to cover the ground quickly and suppress weeds.

Crop spacing affects pest and disease control, since poor spacing increases disease spread.

Different soil fertility levels also determine spacing, as fertile soils can support more closely spaced plants compared to poor soils.

6. (a) A soil analysis conducted at a certain village demonstration plot shows that, the soil is poor in nutrient contents. In five points, examine the causes of the loss of soil fertility.
   Continuous cultivation without replenishment of nutrients exhausts soil fertility.

   Leaching due to heavy rainfall washes away essential nutrients from the topsoil.

   Soil erosion by wind and water removes the fertile top layer of soil.

   Overgrazing destroys vegetation cover and leads to nutrient loss.

   Burning of crop residues destroys organic matter that could otherwise improve soil fertility.

   (b) Farm yard manure is the cheapest manure for farmers who practice mixed farming, however not all farmers manage to produce good quality of farm yard manure for crop products. Analyse five factors that influence the quality of farm yard manure.
   The type of animal feed affects manure quality since nutritious feed produces nutrient-rich manure.

   The method of manure storage determines nutrient retention, as exposure to sun and rain causes nutrient loss.

   The age of the manure influences its quality, with well-decomposed manure being better for crops.

The type of bedding material used with animals, such as straw or leaves, adds organic matter and improves manure quality.

The management practices, including covering manure pits and mixing properly, influence the nutrient content.

7. Marketing of agricultural produce is one of the problems facing the farmers. Suggest five possible solutions to marketing problems facing the agricultural produce in Tanzania.
   Farmers should form cooperatives to strengthen their bargaining power and sell in bulk.

   The government should improve infrastructure such as roads to ease transport of produce to markets.

   Value addition through processing should be encouraged so that farmers can earn more.

   Market information systems should be developed to keep farmers informed of prices and demand.

   Policies to eliminate middlemen exploitation should be enforced to ensure farmers receive fair returns.

8. Despite having many advantages, goat farming is rarely practiced in Tanzania. By giving five points, educate people in Tanzania on the importance of keeping goats.
   Goats provide meat and milk, which are important sources of nutrition for households.

   They require little capital investment and are affordable to small-scale farmers.

   Goats adapt easily to different environments and feed on a wide variety of plants.

   They reproduce quickly, providing farmers with a regular source of income.

   Goat manure improves soil fertility when applied in farms.

9. (a) Good management of farm working animals is necessary so as to achieve maximum output from oxen. Briefly explain five good management practices required for oxen for maximum output.
   Oxen should be provided with adequate feed and water to maintain their energy levels.

   They should be housed in clean, comfortable shelters to protect them from diseases and harsh weather.

   Regular veterinary care such as deworming and vaccination should be provided.

   Animals should be given rest after working for long hours to avoid fatigue.

   Proper training should be given to oxen so they can respond to commands effectively.

(b) What are the necessary conditions for a successful oxenization in tropical areas? Give five points.
There should be availability of good pasture and crop residues to feed oxen.

Veterinary services must be accessible to control diseases that affect oxen.

Farmers must be trained in handling and managing oxen.

The area should have flat to gently sloping land suitable for oxen ploughing.

Oxen should be of strong and healthy breeds adapted to tropical climates.

10. Plant protein in human being can be obtained by eating common beans. However, there is still a shortage of beans to meet the demand in the market. Explain how you could raise the beans production from land preparation to harvesting stage.
    Land should be cleared and tilled properly to create a good seedbed for bean planting.

Quality certified seeds of high-yielding and disease-resistant varieties should be used.

Planting should be done at the right spacing to ensure optimal plant population.

Beans should be intercropped or rotated with other crops to maintain soil fertility.

Weeding should be done regularly to reduce competition for nutrients and water.

Fertilizers or manure should be applied to increase nutrient supply to beans.

Pests and diseases should be controlled using appropriate cultural and chemical methods.

Irrigation should be provided in dry periods to ensure good growth.

Harvesting should be done at the right maturity stage to avoid losses.

11. Farm mechanization by draught animals is the cheapest for small scale farmers in Tanzania when compared with cultivation by using tractors. However, farmers are ignorant on how to train animals for farm operations. Explain six steps to be followed by farmers when training draught animals so that they can work appropriately.
    Farmers should begin training animals at a young age when they are easier to handle.

Animals should first be accustomed to human handling and commands.

They should be gradually introduced to yokes and harnesses without heavy loads.

Animals should then be trained to pull light loads before progressing to heavier farm implements.

Commands should be used consistently to guide animals during training.

Patience and repetition should be emphasized, rewarding animals for good performance to build discipline.