THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

034/1 **AGRICULTURE 1**

(For Both School and Private Candidates)

Duration: 3 Hours **SOLUTIONS** **Year: 2025**

Instructions

1. This paper consists of sections A, B and C with a total of **eleven (11)** questions.
2. Answer **all** questions in section A and B and **two (2)** questions from section C.
3. Section A carries **sixteen (16)** marks, section B **fifty four (54)** marks and section C **thirty (30)** marks.
4. All writing must be in **blue** or **black** pen.
5. All answers must be written in the answer booklet(s) provided.
6. Communication devices and any unauthorised materials are **not** allowed in the examination room.
7. Write your **Examination Number** on every page of your answer booklet(s)

SECTION A

1. For each of the items (i) to (x), the question is copied, alternatives are copied, then the correct answer is given with a reason.

(i) The laboratory investigation done on round potatoes wounds indicated that tubers produced white juice upon squeezing. Which type of a disease would you conclude that has been affecting the plants?

A Late blight
B Early blight
C Bacterial wilt
D Mosaic
E Viral disease

Correct answer: C Bacterial wilt.
Reason: Bacterial wilt causes bacterial ooze which appears as white or milky juice when infected tubers are squeezed, a clear diagnostic sign of bacterial infection.

(ii) In Tanzania land tenure can be grouped into different categories. Which one can be given to an individual a married couple or a group of people?

A Communal
B Open access
C State owned
D Private
E Government

Correct answer: D Private.
Reason: Private land tenure allows ownership by individuals, married couples, or organized groups under legally recognized rights.

(iii) On deciding what to produce a farm manager has to consider the relationship among products. What kind of product relationship does the following figure illustrate?

A Joint products
B Complementary products
C Supplementary products
D Competitive products
E Mutually exclusive products

Correct answer: D Competitive products.
Reason: Competitive products use the same limited resources, so increasing production of one reduces the output of the other.

(iv) Which set represents the crops grown for the production of aromatic substances for food flavouring?

(i) Cloves
(ii) Roses
(iii) Ginger
(iv) Tomatoes
(v) Cinnamon

A (i) (ii) and (v)
B (ii) and (iv)
C (i) (iii) and (v)
D (ii) and (iv)
E (i) (ii) and (iii)

Correct answer: C (i) (iii) and (v).
Reason: Cloves, ginger, and cinnamon are aromatic spices commonly used for food flavouring, unlike roses and tomatoes.

(v) Soil profile is made up of different horizons. Which one contains very little soil that lacks structure?

A Horizon O
B Horizon A
C Horizon B
D Horizon C
E Horizon R

Correct answer: E Horizon R.
Reason: Horizon R consists of unweathered parent rock and contains very little or no soil material and no structure.

(vi) In early and modern times agriculture has been considered important. Which one among the following serves in both times?

A Basis for research
B Source of income
C Creating employment
D Source of foreign exchange
E Source of food

Correct answer: E Source of food.
Reason: Provision of food has been the fundamental role of agriculture in both early and modern societies.

(vii) In areas where coffee is grown farmers are advised to have tools for removing excessive branches which are less or not productive. Which tools would you advise farmers to possess in order to perform the task?

A Shears
B Secateurs

C Sickles

D Forks

E Slashers

Correct answer: B Secateurs.

Reason: Secateurs are designed for pruning small branches precisely without damaging the coffee plant.

(viii) Moisture is an important requirement for plant growth. At what stage of growth in maize plants it is critically needed?

A Silking and tasseling

B Root enlargement

C Flowering and panicle initiation

D Vegetative growth

E Crown root initiation

Correct answer: A Silking and tasseling.

Reason: Moisture stress at silking and tasseling severely reduces pollination and grain formation in maize.

(ix) During dry seasons cattle suffer from shortage of feeds. Which forms of feed conservation would you advise the farmers to practice to address the problem?

(i) Concentrate

(ii) Hay

(iii) Succulent

(iv) Silage

(v) Roughage

A (i) and (iii)

B (ii) and (iv)

C (i) and (v)

D (ii) and (iii)

E (iv) and (v)

Correct answer: B (ii) and (iv).

Reason: Hay and silage are conserved feeds stored during surplus periods and used during dry seasons.

(x) Why is phosphorus essential for plant growth and development?

A Promotes the formation of roots

B Promotes the formation of chlorophyll

C Is essential for normal cell division

D Regulates the uptake of potassium by plants

E Acts as a detoxifying agent

Correct answer: A Promotes the formation of roots.

Reason: Phosphorus plays a major role in root development, energy transfer, and early plant growth.

2. Match the functions of parts of an abattoir in **List B** with their corresponding parts in **List A** by writing the letters of the correct response beside the item number in the answer booklet provided.

List A	**List B**
(i) A corridor where the animal is driven to enter in the stunning box.	A Slaughter platform
(ii) A facility in which the animal is made unconscious by electrical shock to minimize the pain of slaughter.	B Bleeding rail

(iii) An area attached to the stunning box onto which an unconscious animal falls on ready for the throat to be severed.	C Stunning box
(iv) A section where the carcass is held to allow for bleeding.	D Skinning cradle
(v) A section on which the opening cuts are made ready for skin removal.	E Entry race
(vi) An area where the carcass is lifted off the ground for flaying process to be completed.	F Dressing rail
	G Cold room
	H Inspection box

Answers

(i)	(ii)	(iii)	(iv)	(v)	(vi)
E	C	A	B	D	F

SECTION B

3. Low production of tomatoes might be a result of failure to properly manage the crop seedlings in the nursery. What would you advise on the management of the seedlings? Give nine points.

Proper watering should be done regularly to maintain adequate moisture without causing waterlogging, which can lead to damping off diseases.

Seedlings should be raised under shade to protect them from excessive sunlight that may cause wilting and scorching.

Use of well prepared and fertile nursery beds ensures good root development and healthy seedlings.

Regular weeding in the nursery reduces competition for nutrients, water, and light.

Seedlings should be thinned to avoid overcrowding, which can encourage diseases and weak growth.

Application of appropriate fertilizers or manure promotes vigorous and uniform seedling growth.

Disease and pest control measures should be applied early to prevent spread and damage.

Hardening off should be done before transplanting to help seedlings adapt to field conditions.

Proper spacing during transplanting reduces transplant shock and improves survival rate.

4. (a) For maximum crop yield the amount of soil organic matter must be maintained at a certain level. How can that be achieved? Give three points.

Addition of farmyard manure or compost increases organic matter content in the soil.

Practicing crop rotation with legumes helps add organic residues to the soil.

Leaving crop residues in the field after harvesting improves soil organic matter levels.

(b) If you are asked to determine the quantity and rate of accumulation of organic matter in your school farm soil what factors would you consider? Give six points.

The type of crops grown influences the amount of organic residues returned to the soil.

Climate, especially rainfall and temperature, affects decomposition rates of organic matter.

Soil texture determines how well organic matter is retained in the soil.

Soil management practices such as tillage influence organic matter breakdown.

The amount and type of organic inputs added affect accumulation rates.

Biological activity in the soil determines how fast organic matter decomposes.

5. (a) How do plant diseases affect crop production enterprises? Give four points.

Plant diseases reduce crop yield by damaging plant tissues and reducing productivity.

They lower the quality of produce, making it less marketable.

Diseases increase production costs due to control measures such as pesticides.

Severe diseases can lead to total crop failure and financial losses.

(b) When planning to apply pesticides to kill certain harmful insects in the field of crops which five factors should be considered for the application to be effective?

The correct type of pesticide should be selected based on the target pest.

Proper dosage and concentration must be used to ensure effectiveness without harming crops.

Weather conditions such as wind and rainfall should be considered during application.

The stage of crop growth influences pesticide effectiveness and safety.

Timing of application should match the most vulnerable stage of the pest.

6. Selection of feed materials to use for feeding livestock is a decision which is determined by certain factors. Justify this statement by giving six points.

Availability of the feed materials determines what can be used at a given time.

Nutritional value of the feed affects animal health and productivity.

Cost of feed influences the economic viability of livestock production.

Type and age of livestock determine specific feed requirements.

Palatability affects how well animals consume the feed.

Storage and preservation ability of the feed material influences its selection.

7. How can a labour force efficiency in sisal farming be increased? Briefly explain by using six points.

Provision of proper tools and machinery reduces physical strain and increases output.

Training workers improves skills and work speed.

Good supervision ensures tasks are done correctly and on time.

Motivation through fair wages and incentives increases worker commitment.

Division of labour allows specialization and faster work completion.

Improved working conditions reduce fatigue and absenteeism.

8. Why the Tanzania agricultural marketing system is not performing to its potential? Explain by giving nine points.

Poor transport infrastructure increases costs and delays delivery of produce.

Inadequate storage facilities lead to high post harvest losses.

Limited access to market information affects pricing decisions.

Lack of value addition reduces competitiveness of agricultural products.

Insufficient access to credit limits farmers and traders.

Poor organization of farmers weakens bargaining power.

Unstable market prices discourage investment.

Limited use of modern technology reduces efficiency.

Weak policy implementation affects market development.

SECTION C

9. During farm visit around the school Form One students were surprised to see high weeds infestation in the farm. In six points explain what could be the reasons for weeds being so successful and dominant in the environment.

One reason weeds are highly successful is their ability to produce a large number of seeds. A single weed plant can release thousands of seeds, which increases the chance of survival and rapid spread across the farm.

Weeds also have seed dormancy mechanisms that allow them to remain alive in the soil for a long time. Even when conditions are unfavorable, weed seeds can stay dormant and germinate later when moisture and temperature become suitable.

Rapid growth rate is another reason for weed dominance. Many weeds grow faster than crops, enabling them to compete aggressively for nutrients, water, light, and space, which weakens crop plants.

Weeds are highly adaptable to different environmental conditions. They can survive in poor soils, drought conditions, and disturbed environments where crops may fail to grow properly.

Inadequate weed control practices contribute greatly to weed infestation. Late weeding, poor cultivation methods, or failure to use proper control measures allow weeds to establish and multiply freely.

Some weeds reproduce both sexually through seeds and vegetatively through roots, stems, or rhizomes. This dual reproduction method makes them difficult to control and enhances their persistence in the environment.

10. The knowledge of genetically modified organism (GMO) has increased food security in some society. Describe its advantages and disadvantages. Give three points for each.

One major advantage of genetically modified organisms is increased crop yield. GMOs are engineered to produce higher outputs per unit area, which helps in meeting food demands of a growing population.

Another advantage is resistance to pests and diseases. GMO crops can reduce losses caused by insects and pathogens, lowering the need for chemical pesticides and improving overall farm productivity.

GMOs also improve tolerance to harsh environmental conditions such as drought and poor soils. This enables food production in areas that were previously unsuitable for farming, thus enhancing food security.

Despite these advantages, GMOs may pose environmental risks. The spread of modified genes to wild plants can reduce biodiversity and disrupt natural ecosystems.

High cost of GMO seeds is another disadvantage. Small scale farmers may not afford the seeds and associated inputs, which increases inequality between large and small producers.

There are also concerns about long term health effects of consuming GMO products. Since the technology is relatively new, some people fear unknown health risks, leading to resistance and ethical debates.

11. Using five points show how soil texture is important in plant growth.

Soil texture determines the water holding capacity of the soil. Sandy soils drain water quickly while clay soils retain more water, which directly affects the availability of moisture for plant growth.

Texture influences soil aeration and root penetration. Soils with good balance of sand, silt, and clay allow air circulation and easy root development, which supports healthy plant growth.

Nutrient retention is also affected by soil texture. Clay and loam soils hold nutrients better than sandy soils, ensuring plants have continuous access to essential minerals.

Soil texture affects ease of cultivation and tillage. Heavy clay soils are difficult to work with, while loamy soils are easier to cultivate, allowing proper seedbed preparation.

Microbial activity in the soil depends on texture. Well structured soils support microorganisms that decompose organic matter and release nutrients needed for plant growth.