THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATION COUNCIL OF TANZANIA

DIPLOMA IN SECONDARY EDUCATION EXAMINATION

735 **AGRICULTURE TEACHING METHODS**

Time: 3 Hour. **ANSWERS** **Year: 2007**

Instructions

1. This paper consists of section **A** and **B**.
2. Answer **all** questions in section A, and **four (4)** questions from section B.
3. Section A carry **forty (40)** and section B carries **sixty (60)** marks.
4. Cellular phones are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

1. Mention four sources of agricultural education materials used by teachers in secondary schools.

Agricultural textbooks approved by the Ministry of Education are a primary source, providing structured content that aligns with the national syllabus.

Field visit reports and extension service publications are valuable because they present current and locally relevant agricultural practices.

Online resources such as e-books, government agriculture websites, and digital tutorials offer updated information and visual materials for teaching.

Practical experience from local farmers or demonstration farms provides real-life examples that can be used to enrich classroom discussions and practical lessons.

2. List four signs of poor soil fertility observable in a school garden.

Stunted plant growth is a common sign, where crops fail to reach their expected size due to nutrient deficiencies.

Yellowing of leaves, particularly older ones, may indicate a lack of essential nutrients like nitrogen or magnesium.

Low yields even after proper planting and care suggest the soil cannot support healthy plant development due to nutrient exhaustion.

The presence of hard, compacted soil with poor drainage or water retention can also signal that the soil is no longer fertile.

3. State four reasons why record keeping is important in livestock production.

It helps in monitoring animal health by tracking vaccination schedules, treatments, and disease occurrences, enabling timely interventions.

Records assist in evaluating productivity, such as milk yield or growth rate, which supports management decisions.

They provide financial accountability by documenting income and expenses from livestock operations, ensuring transparency.

Record keeping also helps identify breeding patterns and histories, which are essential for genetic improvement and avoiding inbreeding.

4. Give four advantages of mixed farming in smallholder agriculture.

Mixed farming diversifies income sources by combining crops and livestock, reducing dependence on a single enterprise.

It promotes nutrient recycling, as livestock manure can be used to fertilize crops, enhancing soil fertility.

This system increases food security by providing both plant and animal products for household consumption.

It also improves resource use efficiency by utilizing land, labor, and equipment throughout the year across multiple activities.

5. Identify four challenges facing school-based agricultural projects.

Limited financial support makes it difficult to purchase tools, seeds, or construct facilities needed for meaningful projects.

Inadequate land space restricts the size and scope of projects, especially in urban schools with small compounds.

Lack of commitment from students due to other academic pressures or lack of interest may lead to poor maintenance of projects.

Unreliable water supply affects crop growth and livestock health, especially in schools without irrigation infrastructure.

6. Mention four safety precautions to be taken when handling chemicals in agriculture.

Wear protective gear such as gloves, goggles, and masks to prevent direct contact with harmful substances during spraying or mixing.

Read and follow label instructions on storage, application rates, and disposal to avoid misuse or overdosing.

Store chemicals in locked, well-ventilated areas away from food, feed, and water sources to prevent contamination.

Wash hands and equipment thoroughly after use to avoid accidental poisoning or transfer of chemicals to other areas.

7. Explain five benefits of involving learners in preparing and using compost manure.

Learners gain hands-on skills in waste recycling and organic farming by actively engaging in the process of collecting, layering, and turning compost materials.

It enhances understanding of soil fertility management as students observe how decomposed materials improve soil texture and plant growth.

The activity promotes environmental awareness by teaching students how to manage biodegradable waste responsibly.

Involving learners builds teamwork and responsibility since composting often requires coordination, regular monitoring, and record-keeping.

Compost manure use reduces the cost of purchasing commercial fertilizers, demonstrating to learners how sustainable farming can be both eco-friendly and economical.

8. Describe five ways in which school agriculture clubs contribute to learner development.

Agriculture clubs give learners opportunities to practice leadership as they take up roles like chairperson, secretary, or project leader within the group.

They promote entrepreneurial skills through projects such as poultry, horticulture, or selling farm produce, which expose students to budgeting, marketing, and profit analysis.

Members participate in competitions and exhibitions, improving their confidence, public speaking, and ability to articulate agricultural ideas.

Clubs encourage innovation by allowing students to try new farming methods, create farm inputs like organic pesticides, and test small technologies like drip irrigation.

They foster a sense of community service, where learners use their knowledge to support local farmers or beautify the school through landscaping projects.

9. Explain five qualities of a good demonstration plot for agriculture lessons.

A good demonstration plot should be accessible to learners so they can observe, participate, and monitor the progress of activities regularly without barriers.

It must be well-labeled with clear information about crop types, spacing, fertilizer application, and dates of planting to support learning and record-keeping.

Proper layout and neatness are essential for safety, clarity, and effective monitoring, allowing learners to distinguish between control and test treatments.

It should represent standard practices aligned with curriculum content so that students see real applications of what is taught in class.

The plot should be manageable in size to suit school resources, allowing effective supervision and involvement of all learners.

10. Discuss five ways of motivating students to pursue agriculture as a future career.

Teachers should expose students to successful agricultural entrepreneurs, showcasing real-life examples of youth who are earning income through farming.

Organizing field visits to modern farms or research stations helps learners see agriculture as a science-based and innovative industry.

Incorporating ICT tools in agriculture lessons, such as mobile apps for weather forecasting or record keeping, can increase student interest in digital agriculture.

Competitions and exhibitions where students showcase farm produce or projects can boost confidence and demonstrate the value of their efforts.

Providing small grants or school support for student-led farm projects encourages learners to apply their skills and view agriculture as a viable business path.

11. Describe five ways in which agriculture contributes to rural development in Tanzania.

Agriculture creates employment for the rural population, especially youth and women, through crop farming, livestock keeping, and agribusiness.

It improves food security at household and community levels by ensuring availability of essential food crops and animal products.

Farming income is often reinvested into the local economy through purchase of goods, building of homes, or starting small businesses.

It encourages infrastructure development, such as rural roads, storage facilities, and irrigation systems, which benefit the broader community.

Agricultural development supports education and health by enabling families to afford school fees and medical care through farm proceeds.

12. Explain five benefits of keeping a school farm for teaching and learning purposes.

A school farm offers a practical learning environment where students apply classroom knowledge to reallife agricultural activities.

It serves as a source of income for the school when produce such as vegetables, eggs, or milk is sold, which can fund school needs or expand the project.

The farm supplies food for school meals, improving nutrition for both students and staff.

It fosters a culture of responsibility, discipline, and teamwork as learners take part in planning, planting, watering, and harvesting.

School farms can also support research and experimentation, allowing learners to test different farming methods and analyze results under teacher guidance.

13. You are preparing a lesson for Form Two students on "Crop Diseases." Write a summary of your lesson including: (a) Meaning of crop diseases (b) Causes of diseases (c) Common crop diseases in Tanzania (d) Effects of crop diseases (e) Control measures

Crop diseases are abnormal conditions that affect the growth, development, or yield of crops. They are caused by harmful agents such as fungi, bacteria, viruses, and nematodes, and they often show symptoms like spots, wilting, discoloration, or stunted growth.

Causes of crop diseases include poor hygiene in the field, use of infected planting materials, unsuitable climatic conditions that favor pathogens, and lack of crop rotation that allows disease buildup.

Common crop diseases in Tanzania include maize smut, cassava mosaic disease, rice blast, coffee leaf rust, and early blight in tomatoes. These diseases are widespread and affect both small-scale and large-scale farmers.

The effects of crop diseases are significant. They reduce crop yields, lower the quality of produce, increase production costs due to control measures, and in some cases, lead to total crop loss. This negatively impacts food security and farmer income.

Control measures include use of resistant crop varieties, proper spacing and hygiene in the field, regular crop rotation, early detection and removal of infected plants, and the use of fungicides or other appropriate chemicals where necessary.

14. Imagine you are supervising a student project on vegetable production. Write a report including: (a) Objectives (b) Preparation and planting (c) Learners' roles (d) Observations and results (e) Challenges and solutions

Title: Student Vegetable Project Report

Duration: 2 Months
Vegetable Grown: Spinach and Tomatoes

The objectives were to provide students with practical experience in crop production, promote teamwork, and enable learners to apply classroom knowledge in a real farming scenario.

Preparation involved clearing the land, digging, and leveling the seedbeds. Compost was prepared and applied to improve soil fertility. Students planted spinach in rows and tomatoes using nursery beds before transplanting. Watering was done daily using watering cans.

Students worked in groups. Some were responsible for daily watering and weeding, others monitored growth and recorded plant height weekly. Another group prepared simple labels for each plot, while others managed pest control using natural repellents.

The results were promising. Spinach was harvested twice, yielding fresh leaves for the school kitchen. Tomato plants developed well and began fruiting during the final project week. Students gained confidence and requested a similar project for the next term.

Challenges included pest attacks on young tomato seedlings and irregular attendance by some students. These were addressed by using neem solution for pests and assigning backup duties in case a group member was absent.

15. Write an essay explaining five reasons for youth disinterest in agriculture and suggest five ways the school and community can change this mindset.

Many youth see agriculture as a dirty and labor-intensive activity that involves hard manual work, often without modern equipment or support, making it appear less attractive compared to white-collar jobs.

Lack of exposure to successful agricultural entrepreneurs reinforces the belief that farming is a poor man's job with little income or respect in society.

Outdated teaching methods in schools, focusing more on theory than practical, make agriculture seem boring and irrelevant to modern youth.

Limited access to land and capital discourages youth from seeing agriculture as a viable career, especially in urban areas where resources are scarce.

Agriculture is often associated with rural areas and traditional lifestyles, leading youth to perceive it as backward and unsuitable for educated individuals.

To change this mindset, schools should introduce more engaging, hands-on agriculture lessons using ICT, modern tools, and field visits to successful farms.

Youth should be linked to mentorship programs involving young, successful farmers to showcase agriculture as a profitable enterprise.

Agriculture clubs and school projects should promote entrepreneurship, allowing learners to earn from farm produce and understand agribusiness potential.

Government and community leaders should recognize and reward outstanding youth-led agricultural projects to boost prestige and motivation.

Land banks and youth grants should be made accessible, allowing interested youth to start their own small farms or enterprises after school.