

**THE UNITED REPUBLIC OF TANZANIA**  
**NATIONAL EXAMINATIONS COUNCIL OF TANZANIA**  
**CERTIFICATE OF SECONDARY EDUCATION EXAMINATION**  
**735 AGRICULTURE TEACHING METHODS**

**Time: 3 Hours**

**ANSWERS**

**Year: 2016**

**Instructions**

1. This paper consists of section A and B with a total of sixteen questions.
2. Answer all questions in section A and four questions from section B.

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1. Briefly describe four routine maintenance of the disc plough.

Cleaning the disc plough after use prevents rust formation and removes soil, plant debris, and chemicals that may cause corrosion. Proper cleaning ensures longevity and efficiency in operation.

Lubricating the moving parts, such as the disc bearings and pivot points, reduces friction and wear. Applying grease or oil enhances smooth operation and prevents premature failure of components.

Tightening bolts and nuts ensures that all parts are securely in place. Frequent ploughing activities may loosen fasteners, leading to mechanical failures if not properly maintained.

Checking and adjusting the disc angles and alignment helps maintain efficient soil penetration and turning. Misalignment reduces the effectiveness of ploughing and increases fuel consumption.

2. State four significances of oral questions in the teaching and learning.

Oral questions stimulate active student participation by encouraging learners to think critically and engage in discussions, making learning more interactive.

They help assess student understanding by allowing teachers to gauge comprehension and identify areas that require further explanation or revision.

Oral questioning enhances memory retention by reinforcing previously learned concepts through verbal recall and application in different contexts.

They develop communication skills as students learn to express their ideas clearly, listen to others, and construct well-thought-out responses.

3. Outline four systems of poultry rearing.

The free-range system allows poultry to roam freely in open spaces, feeding on natural resources. It is cost-effective but exposes birds to predators and diseases.

The deep litter system involves keeping poultry in a house with a floor covered by bedding materials such as sawdust or straw. It provides better disease control and allows easy management.

The battery cage system confines birds in individual or group cages with feeding and watering facilities. It enhances egg production efficiency but may limit natural movement.

The semi-intensive system combines free-range and deep litter systems by allowing birds access to an outdoor run while providing shelter for protection and feeding.

4. Write two functions for each of the following sections of agricultural science carpentry workshop:

(a) Offices: They serve as administrative spaces where workshop activities are planned and documented. They also provide a working space for instructors to prepare teaching materials.

(b) Stores: They are used for keeping carpentry tools and equipment safely when not in use. They also store raw materials such as wood and nails needed for workshop projects.

(c) Machine section: It houses powered tools and machinery used for cutting, shaping, and assembling wood. It also ensures proper maintenance and servicing of machines to keep them functional.

(d) Demonstration chamber: It is used for training students through practical carpentry work, allowing them to observe techniques firsthand. It also provides a controlled environment for conducting experiments and testing new construction methods.

5. State four importance of making analysis of any curriculum material.

It helps in identifying the relevance of the curriculum to learners' needs and societal demands, ensuring that education remains practical and beneficial.

Analysis ensures that learning objectives are well-structured and achievable within the available timeframe and resources.

It assists in selecting appropriate teaching methods and materials that align with the curriculum content for effective knowledge delivery.

Curriculum analysis helps in making necessary modifications or updates to improve content quality and adaptability to changing educational standards.

6. Outline four functions of a scheme of work to a subject teacher.

It provides a structured plan that helps teachers organize lesson topics sequentially, ensuring logical content delivery.

The scheme of work serves as a guide for monitoring syllabus coverage, ensuring that all topics are taught before the academic period ends.

It helps in lesson preparation by outlining required teaching methods, materials, and assessments for each topic.

The scheme of work enables teachers to set realistic timeframes for completing specific topics, preventing rushed or incomplete teaching.

7. Provide four importance of lesson notes to students.

Lesson notes act as a reference for revision, helping students reinforce what they have learned in class.

They provide structured information that makes complex topics easier to understand, enhancing knowledge retention.

Lesson notes serve as study guides for students who may have missed a lesson, allowing them to catch up on missed content.

They help students organize their learning by summarizing key points, making it easier to recall information during exams.

8. Write two differences between natural mating and artificial insemination.

Natural mating occurs when a male animal physically mates with a female to fertilize eggs, while artificial insemination involves the manual introduction of semen into the female reproductive tract.

In natural mating, fertility depends on the availability and health of both male and female animals, whereas artificial insemination allows selective breeding with high-quality semen even when the male is not physically present.

9. Provide the meaning of the following agricultural practices and name at least one tool used in each practice:

(a) Branding: It is a method of permanently marking livestock for identification using a hot iron or chemical. A branding iron is used in this process.

(b) Hoof Trimming: It is the practice of cutting and shaping the hooves of livestock to prevent overgrowth and lameness. A hoof knife or hoof trimmer is used for this purpose.

10. Briefly describe four methods of applying fertilizers in the field.

Broadcasting involves spreading fertilizer evenly over the entire field before or after planting. It is suitable for crops that require nutrients across a wide area.

Band placement involves applying fertilizer in rows or bands near the plant roots to ensure efficient nutrient uptake. It minimizes wastage and enhances targeted feeding.

Foliar application involves spraying liquid fertilizer directly onto the leaves, allowing plants to absorb nutrients through their stomata. It is effective for quick nutrient correction.

Side dressing involves placing fertilizer near the base of growing plants to provide additional nutrients during the growing season, ensuring continuous nutrient supply.

11. (a) Describe the concept of fencing as applied in the context of a school farm.

Fencing refers to the installation of barriers around a school farm to enclose the farming area, protecting crops and livestock from external threats. It serves as a boundary that prevents unauthorized access and helps in farm management by keeping animals and equipment within designated areas.

(b) Elaborate five reasons for establishing a fence in a school farm.

It prevents animal intrusion by keeping livestock or wild animals from destroying crops or feeding on planted vegetation.

Fencing enhances security by restricting unauthorized access, reducing theft of farm produce, tools, and equipment.

It helps in organizing farm activities by clearly marking different sections for various crops, livestock, and experimental areas.

A fence minimizes human disturbances by preventing students or outsiders from trampling on crops or interfering with farm operations.

Fencing supports controlled grazing by confining livestock within specific areas, ensuring rotational grazing and preventing overgrazing.

12. Analyse five personal qualities expected from a classroom teacher.

A teacher should have good communication skills to effectively convey lessons, give instructions clearly, and engage students in discussions.

Patience is essential for handling different student learning paces, addressing challenges, and managing classroom behavior without frustration.

Professionalism ensures that a teacher maintains ethical conduct, respects students, and adheres to educational standards.

Adaptability allows teachers to modify teaching methods to suit different learning needs and unexpected classroom situations.

Passion for teaching motivates educators to inspire students, create engaging lessons, and maintain enthusiasm in their work.

13. Explain four strengths of essay-type test items.

They assess students' ability to analyze, synthesize, and evaluate information, making them effective for higher-order thinking.

Essay tests allow students to express their ideas in detail, demonstrating creativity and depth of understanding.

They minimize the chances of guessing answers, as students must construct well-reasoned responses rather than selecting from given choices.

Essay-type tests improve writing skills by encouraging students to organize their thoughts coherently and present structured arguments.

14. As a classroom manager, explain how you can use “preventive technique” to create effective classroom management. Give five points.

Establishing clear classroom rules helps in setting expectations for student behavior. When students understand what is expected of them, they are more likely to follow guidelines and avoid disruptive actions.

Building positive teacher-student relationships fosters mutual respect and trust. When students feel valued and understood, they are less likely to engage in misbehavior, making classroom management easier.

Using engaging teaching methods keeps students actively involved in lessons, reducing boredom and minimizing distractions. Interactive activities, discussions, and multimedia resources can help sustain student interest.

Monitoring student behavior regularly allows a teacher to identify potential issues before they escalate. Observing students and addressing concerns early helps prevent conflicts and ensures a smooth learning process.

Providing consistent reinforcement and encouragement motivates students to maintain good behavior. Recognizing and rewarding positive actions reinforces discipline and encourages others to follow appropriate conduct.

15. Suggest five procedures that can help to minimize subjectivity in scoring a subjective test.

Developing a detailed marking scheme ensures uniformity in grading by outlining specific points that should be awarded for each response. A clear rubric helps eliminate personal bias and ensures fairness.

Using standardized answer formats helps in evaluating responses objectively. When students follow a consistent structure, it becomes easier to assess their work based on predefined criteria.

Employing multiple graders can reduce bias in scoring. When two or more assessors evaluate an essay, discrepancies in marking can be minimized by averaging scores or discussing differences.

Hiding student identities during marking ensures impartiality. When the grader does not know whose paper they are evaluating, personal biases or preconceived notions do not influence the scores.

Rechecking marked papers helps identify inconsistencies in grading. Reviewing answers and comparing them with the marking guide ensures that marks are awarded fairly across all responses.

16. Describe five causes of change in supply of agricultural products.

Changes in production costs affect the supply of agricultural products. When input costs such as seeds, fertilizers, and labor increase, farmers may reduce production, leading to lower supply. Conversely, lower production costs encourage increased supply.

Technological advancements improve efficiency in farming, leading to higher yields and increased supply. Modern equipment, irrigation systems, and improved seed varieties contribute to better productivity and market availability.

Weather conditions play a significant role in agricultural supply. Favorable weather supports high production, while adverse conditions like droughts, floods, and pests reduce supply levels.

Government policies such as subsidies, taxes, and trade regulations influence agricultural supply. Supportive policies encourage farmers to produce more, while restrictive regulations or heavy taxation may discourage production.

Market demand fluctuations affect supply adjustments. When demand for a particular crop increases, farmers may expand production to meet market needs, whereas declining demand may result in reduced supply.

17. Assuming that you are teaching on “Field and Storage Crops Pests Control,” explain five physical pests control methods commonly applied in Tanzania.

Handpicking involves manually removing pests from crops. It is effective for controlling larger pests such as caterpillars and beetles, reducing their population without using chemicals.

Trapping uses devices such as baited traps, sticky boards, or pheromone traps to capture and eliminate pests. This method is useful for monitoring and controlling insects in both field and storage conditions.

Solarization involves covering soil with plastic sheets to trap heat from the sun, killing soil-borne pests and pathogens. It is commonly used to prepare land before planting crops.

Proper storage practices, such as using airtight containers and maintaining low humidity, prevent pest infestation in stored grains. Well-ventilated and clean storage facilities reduce the chances of pest multiplication.

Using barriers like nets, fences, and plant covers helps prevent pest access to crops. Physical barriers are particularly useful in protecting vegetables and fruits from insect attacks.

18. Basing on the importance of Block Teaching Practice to student teachers, explain how you benefited from the teaching practice you attended. Give five points.

It provided hands-on classroom experience, allowing me to apply theoretical knowledge in real teaching environments. This practical exposure helped in developing confidence and teaching skills.

I learned effective classroom management techniques by handling different student behaviors and learning needs. This experience enhanced my ability to maintain discipline and create an engaging learning atmosphere.

The practice improved my lesson planning and delivery skills. Preparing lesson plans, using teaching aids, and assessing student progress helped refine my instructional methods.

I gained experience in evaluating student performance through different assessment techniques, such as oral questions, written tests, and practical assignments. This helped me understand how to measure learning outcomes effectively.

The teaching practice enhanced my ability to adapt to challenges, such as handling unexpected classroom situations and modifying lesson approaches to meet student needs. This flexibility is essential for a successful teaching career.