THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

DIPLOMA IN SECONDARY EDUCATION EXAMINATION

763 FOUNDATIONS OF EDUCATION

Time: 3 Hours **ANSWERS** **Year: 2008**

Instructions

1. This paper consists of section A and B.

2. Answer all questions in section A and four questions from section B.

1. Give four (4) features of a good scheme of work and their importance

Clarity: One feature is clarity, ensuring the scheme is easy to understand with specific objectives. Its importance is that it helps teachers plan science lessons effectively, ensuring students grasp Agricultural Science concepts accurately.

Comprehensiveness: Comprehensiveness, covering all topics, is key. It's important as it ensures a complete curriculum, like poultry diseases, is addressed, supporting thorough learning and teaching outcomes.

Flexibility: Flexibility allows adjustments to meet student needs. This is important for adapting Agricultural Science lessons to rural contexts, enhancing engagement and relevance for students.

Realism: Realism ensures achievable goals within timeframes. Its importance lies in preventing teacher overload, ensuring manageable science plans, and maintaining educational progress effectively.

2. Define the following terms as used in teaching Agricultural Science:

(a) Illustrative Experiment: Illustrative experiment refers to a demonstration experiment showing a concept, like soil fertility, to clarify Agricultural Science principles for students.

(b) Investigative Experiment: Investigative experiment involves students testing hypotheses, like crop yield variations, to explore Agricultural Science questions, fostering critical thinking and learning.

3. When teaching primary tillage equipment, which are the six (6) most important parts to be included in the teacher's lesson short notes?

Ploughshare: The cutting edge, essential for breaking soil, is included to explain its role in preparing land for planting in Agricultural Science lessons.

Mouldboard: This turns and inverts soil, noted for improving aeration, aiding students' understanding of tillage in classrooms.

Handles: Handles allow control, included to show operator interaction, enhancing practical teaching of equipment use in agriculture.

Beam: The structural frame supports the plough, noted for stability, helping students grasp equipment mechanics in lessons.

Coulter: The vertical cutting blade, included for slicing soil, clarifies its function in tillage, supporting effective Agricultural Science instruction.

Hitch: The attachment point for tractors, noted for connectivity, ensures students understand equipment operation, improving learning outcomes.

4. Which are the four (4) factors that should be considered before using a diagram as a teaching and learning aid?

Relevance: One factor is relevance, ensuring the diagram aligns with curriculum goals. For Agricultural Science, a soil diagram supports tillage lessons, enhancing student engagement and comprehension.

Clarity: Clarity, with simple labels and visuals, ensures understanding. In Agricultural Science, clear crop diagrams reduce confusion, improving teaching effectiveness in classrooms.

Size and Visibility: Size and visibility ensure all students see the diagram. In Agricultural Science, large poultry diagrams on boards aid visibility, supporting inclusive learning and instruction.

Durability: Durability ensures long-term use, reducing replacement needs. In Agricultural Science, laminated diagrams withstand wear, maintaining quality for consistent teaching and learning.

5. Mention two (2) basic curriculum materials

Textbooks: Textbooks provide structured content for Agricultural Science, ensuring teachers and students have reliable resources for lessons on tillage and poultry diseases.

Syllabus: The syllabus outlines curriculum goals for Agricultural Science, guiding teachers on topics like primary tillage, ensuring aligned and effective instruction.

6. List down four (4) areas that should be considered before evaluating a lesson

Objectives Achievement: One area is objectives achievement, assessing if goals were met. In Agricultural Science, evaluating if students understand poultry diseases ensures lesson success and teaching effectiveness.

Student Engagement: Engagement levels gauge participation, a key area. In Agricultural Science, observing student interest in tillage discussions improves lesson evaluation and learning outcomes.

Resource Use: Effectiveness of resources, like diagrams, is crucial. In Agricultural Science, assessing chart clarity for crops ensures quality teaching, supporting evaluation accuracy.

Time Management: Time allocation efficiency is essential. In Agricultural Science, ensuring tillage lessons fit within periods enhances evaluation, maintaining educational progress and teacher planning.

7. Give four (4) reasons that make teachers realize the importance of writing the number of students in their lesson plans

Resource Allocation: One reason is resource allocation, ensuring sufficient materials. Teachers in Agricultural Science note student numbers for poultry disease handouts, preventing shortages and supporting effective teaching.

Classroom Management: It aids classroom management, planning activities. In Agricultural Science, knowing student counts for tillage discussions ensures orderly lessons, enhancing teaching efficiency and student focus.

Individual Attention: Tracking numbers ensures individual attention, addressing needs. In Agricultural Science, teachers plan for science queries on crops, improving learning outcomes through personalized instruction.

Assessment Planning: It supports assessment planning, tailoring evaluations. In Agricultural Science, noting student numbers for quizzes on primary tillage ensures fair testing, maintaining educational quality and teacher effectiveness.

8. Mention four (4) major features of an instructional specific objective targeted for a specific lesson

Clarity: One feature is clarity, stating objectives precisely. In Agricultural Science, "Students will identify three poultry diseases" ensures clear goals, enhancing teaching focus and student understanding.

Measurability: Measurability, allowing assessment, is key. In Agricultural Science, "Students will list five tillage parts" enables evaluation, improving lesson effectiveness and learning outcomes.

Relevance: Relevance to curriculum goals is essential. In Agricultural Science, objectives on crop management align with syllabi, ensuring meaningful instruction and student engagement.

Achievability: Achievability ensures realistic goals within time. In Agricultural Science, "Students will describe two soil types in 30 minutes" prevents overwhelm, supporting effective teaching and learning.

9. List down four (4) qualities of a syllabus

Clarity: One quality is clarity, ensuring easy understanding. In Agricultural Science, syllabi clearly outline tillage topics, aiding teachers in planning and delivering effective lessons.

Comprehensiveness: Comprehensiveness covers all topics, a key quality. In Agricultural Science, syllabi include poultry diseases, ensuring complete curriculum coverage for thorough teaching and learning.

Flexibility: Flexibility allows adjustments, enhancing usability. In Agricultural Science, syllabi adapt to rural needs, improving relevance and teaching effectiveness across contexts.

Relevance: Relevance to educational goals is crucial. In Agricultural Science, syllabi align with national standards for crops, ensuring meaningful instruction and student outcomes.

10. Imagine you are a Veterinary Officer who has been invited as a guest speaker on poultry diseases. Prepare a presentation to your pupils on five (5) common poultry diseases under the following sub-headings:

(a) Name of the Disease

Newcastle Disease

Avian Influenza

Marek's Disease

Coccidiosis

Fowl Pox

(b) Symptoms

Newcastle: Respiratory distress, green diarrhea, nervous signs.

Avian Influenza: Sudden death, swelling, blue comb.

Marek's: Paralysis, tumors, weight loss.

Coccidiosis: Bloody droppings, lethargy, reduced growth.

Fowl Pox: Scabs on skin, lesions in mouth, breathing issues.

(c) Transmission

Newcastle: Airborne, contact with infected birds.

Avian Influenza: Droppings, water, wild birds.

Marek's: Dust, feathers, direct contact.

Coccidiosis: Contaminated feed, water, litter.

Fowl Pox: Mosquito bites, scratches, infected surfaces.

(d) Treatment

Newcastle: No cure, supportive care, vaccination prevention.

Avian Influenza: Antiviral drugs, isolation, vaccination.

Marek's: No treatment, vaccination before infection.

Coccidiosis: Anticoccidial drugs, improved hygiene.

Fowl Pox: No specific treatment, supportive care, vaccines.

(e) Control

Newcastle: Vaccination, biosecurity, quarantine.

Avian Influenza: Biosecurity, culling, monitoring.

Marek's: Vaccination, clean housing, isolation.

Coccidiosis: Clean litter, medicated feed, hygiene.

Fowl Pox: Vaccination, insect control, sanitation.

11. Define the term Pittalis/Adivas. Give examples of principles of teaching and learning in tutoring method is believed to violate the principle of the ordinary level secondary schools although it is commonly used in most of the ordinary level secondary schools

Pittalis/Adivas: Pittalis/Adivas refers to pitfalls or challenges in teaching methods, like inefficiencies or misalignments, affecting educational outcomes in Tanganyika's secondary schools.

Examples of Violated Principles in Tutoring Method:

Lack of Interaction: Tutoring often focuses on one-on-one, violating group interaction principles. In Tanganyika, science tutors ignore peer collaboration, reducing social learning, common despite discouraging group dynamics in schools.

Limited Engagement: It emphasizes direct instruction, neglecting active learning. In Tanganyika, history tutors lecture on Nyerere, missing hands-on activities, violating engagement principles, though widely used in secondary classrooms.

Teacher-Centered Approach: Tutoring prioritizes teacher control, opposing student-centered learning. In Tanganyika, math tutors dominate, undermining student autonomy, violating participatory principles, yet prevalent in ordinary level schools.

Inflexibility: It lacks adaptability, violating diverse learning needs. In Tanganyika, geography tutors use rigid methods, ignoring student diversity, contradicting inclusive principles, despite common use in secondary education.

Circumstances Forcing Continuation of Tutoring Method:

Resource Scarcity: Limited materials force one-on-one tutoring, as schools lack science labs, ensuring learning despite violating principles, common in Tanganyika's rural secondary schools.

Large Class Sizes: Overcrowded classrooms necessitate tutoring for focus, addressing Swahili needs individually, though violating group learning, prevalent in Tanganyika's ordinary level schools.

Teacher Preference: Some teachers prefer tutoring for control, maintaining history instruction, despite opposing student-centered methods, widely practiced in secondary classrooms.

Student Needs: Specific student weaknesses, like math struggles, require tutoring, ensuring progress, though contradicting interactive principles, common in Tanganyika's schools.

Time Constraints: Limited periods push tutoring for quick coverage, focusing on geography basics, violating collaborative learning, yet necessary in secondary education settings.

Techniques to Improve Tutoring Method:

Incorporate Group Activities: Add group tasks in science, fostering collaboration, aligning with interactive principles and enhancing learning outcomes in Tanganyika's schools.

Use Interactive Tools: Integrate visuals, like history charts, making tutoring engaging, reducing teacher dominance and supporting student-centered learning effectively.

Provide Training: Train tutors on diverse methods for Swahili, ensuring flexibility, addressing violations and improving teaching quality in secondary classrooms.

Encourage Feedback: Seek student input in math tutoring, promoting participation, aligning with inclusive principles and enhancing educational impact in Tanganyika's schools.

12.Describe five (5) circumstances that force teachers to continue with this method. Suggest four (4) techniques which can improve this method necessary to use.

There are several circumstances that can force teachers to continue with a particular teaching method:

Lack of resources is a common factor. In cases where teaching materials, technology, or facilities are limited, teachers may continue using traditional methods, such as lectures or direct instruction, because they do not require additional resources.

Large class sizes can also play a role. When there are too many students in a class, interactive or student-centered methods may become difficult to manage. Teachers might continue using lecture-based methods, which are easier to control in large groups.

Curriculum demands may limit a teacher's ability to adopt new methods. Some curricula may emphasize theoretical knowledge that is best delivered through direct instruction, making it difficult for teachers to move away from traditional methods.

Time constraints are another reason teachers may stick to traditional methods. In situations where there is limited time to cover a vast amount of content, teachers may opt for methods that allow them to cover the material quickly, such as lectures or rote memorization.

Lack of teacher training can lead to continued use of traditional methods. Teachers who have not been trained in modern or interactive teaching methods might stick to familiar approaches because they are more comfortable with them and lack confidence in using newer strategies.

To improve the effectiveness of the traditional method, the following techniques can be used:

Incorporating multimedia can enhance the traditional teaching approach. Using videos, slideshows, and interactive software can help make traditional methods more engaging and better facilitate student understanding.

Active learning strategies should be integrated into traditional lessons. Including activities like group discussions, question and answer sessions, or problem-solving tasks during the lecture can encourage student participation and make learning more dynamic.

Regular formative assessments are a key technique. By including quizzes, short tests, or feedback sessions during the lesson, teachers can gauge students' understanding in real-time and adjust the teaching pace accordingly.

Student-centered approaches can be incorporated into traditional methods. Even within lecture-based teaching, teachers can encourage more student interaction by asking open-ended questions, encouraging peer teaching, or assigning collaborative tasks that involve more than just passive listening.

13. Show a layout of a scheme of work and explain briefly the importance of each item

Layout of a Scheme of Work:

Title: Specifies the subject and term, e.g., Agricultural Science, Term 1.

Timeframe: Outlines weeks or periods, e.g., 12 weeks for poultry diseases.

Topics/Subtopics: Lists units, e.g., primary tillage, with subtopics like equipment parts.

Objectives: States learning goals, e.g., students identify tillage tools, ensuring focused teaching.

Teaching/Learning Activities: Details methods, e.g., experiments for crops, enhancing engagement.

Assessment Methods: Includes evaluations, e.g., quizzes on soil types, measuring outcomes.

Resources: Lists materials, e.g., diagrams for poultry, ensuring resource availability.

Remarks: Notes adjustments, e.g., extra time for tillage, improving lesson flexibility.

Importance of Each Item:

Title: Identifies the focus, ensuring teachers plan relevant Agricultural Science lessons, aligning with curriculum for effective teaching.

Timeframe: Sets a schedule, preventing overload in poultry lessons, maintaining manageable teaching and student progress.

Topics/Subtopics: Guides content coverage, ensuring comprehensive tillage education, supporting thorough learning and teaching outcomes.

Objectives: Clarifies goals, like identifying diseases, ensuring focused instruction, enhancing student comprehension and lesson success.

Teaching/Learning Activities: Engages students, like crop experiments, boosting participation and retention, improving teaching effectiveness.

Assessment Methods: Evaluates learning, like soil quizzes, ensuring goals are met, maintaining educational quality and teacher accountability.

Resources: Ensures material availability, like diagrams for poultry, supporting inclusive, effective teaching and learning processes.

Remarks: Allows adjustments, like extra tillage time, enhancing flexibility and teaching efficiency, adapting to student needs.

14. Write an essay that can motivate secondary school pupils on Aiming at Marketing with Agricultural Science. Prepare a double period lesson for a knowledge on the eight (8) basic factors. Specific Objective: The pupils have good depends when producers offer for sale on which supply of a commodity or good depends on producers offer at ceteris paribus

Essay: Aiming at Marketing with Agricultural Science

Agricultural Science opens exciting opportunities for secondary school pupils to excel in marketing, transforming rural economies and personal futures. By mastering crop production, poultry management, and soil techniques, students can understand supply chains, predict market demands, and innovate farming practices. For instance, learning about poultry diseases equips you to ensure healthy stock, increasing supply for markets and boosting profits. Marketing Agricultural Science products, like coffee or maize, requires knowledge of pricing, distribution, and consumer needs—skills you'll gain through studying tillage and crop yields. This field empowers you to create jobs, support communities, and achieve economic independence, making your education a powerful tool for success. Aim high, engage with Agricultural Science, and market your future with confidence!

Double Period Lesson Plan: Knowledge on the Eight Basic Factors Affecting Supply (Agricultural Science)

Subject: Agricultural Science

Topic: Factors Affecting Supply of Agricultural Commodities

Class: Secondary School (Form 3)

Duration: 80 minutes (Double Period)

Specific Objective: By the end of the lesson, pupils will understand the eight basic factors on which the supply of a commodity or good depends when producers offer for sale, at ceteris paribus, enhancing their marketing knowledge in agriculture.

Lesson Outline:

Introduction (10 minutes)

Greet pupils and motivate with the essay's key points on marketing Agricultural Science. Use a chart on crop supply to introduce the concept, linking it to poultry and tillage for engagement.

Explain ceteris paribus (all else equal), using a simple maize example to clarify supply factors, ensuring clarity and student interest in marketing applications.

Main Lesson (50 minutes)

Factor 1: Price of the Commodity (5 minutes)

Discuss how higher maize prices increase supply, using a diagram. Ask pupils to suggest why farmers produce more, linking to marketing opportunities.

Factor 2: Production Costs (5 minutes)

Explain how lower tillage costs boost supply, using a cost chart. Engage pupils with a question on reducing poultry feed expenses for marketing.

Factor 3: Technology (5 minutes)

Highlight how irrigation tech increases crop supply, showing a video clip. Discuss improved poultry yields, connecting to efficient marketing strategies.

Factor 4: Government Policies (5 minutes)

Describe subsidies boosting maize supply, using a policy example. Ask pupils how regulations affect poultry marketing, deepening understanding.

Factor 5: Natural Conditions (5 minutes)

Explain weather impacts on crop supply, using a rainfall chart. Discuss drought effects on poultry, linking to market stability for pupils.

Factor 6: Prices of Related Goods (5 minutes)

Explore how coffee prices affect maize supply, using a graph. Engage pupils on poultry vs. egg market shifts, enhancing marketing insights.

Factor 7: Producer Expectations (5 minutes)

Discuss future price expectations increasing supply, with a scenario. Use a poultry example, encouraging pupils to predict market trends for learning.

Factor 8: Number of Producers (5 minutes)

Explain more farmers boost supply, using a regional map. Discuss poultry farmer growth, linking to marketing opportunities, reinforcing pupil knowledge.

Conclusion and Assessment (20 minutes)

Summarize the eight factors, revisiting the maize and poultry examples. Use a quick quiz on supply factors, assessing pupil understanding of marketing applications in agriculture.

Assign a homework task: Analyze how one factor affects local crop supply, preparing pupils for future marketing-focused Agricultural Science lessons.

Resources: Diagrams, charts, video clips, and handouts on supply factors.

Assessment: Quiz responses and class participation, ensuring pupils grasp marketing implications of supply in Agricultural Science.