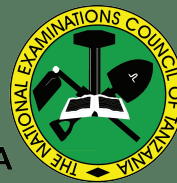




THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA



STUDENTS' ITEM RESPONSE ANALYSIS REPORT ON THE FORM TWO NATIONAL ASSESSMENT (FTNA) 2024

034 AGRICULTURE



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA



**STUDENTS' ITEM RESPONSE ANALYSIS
REPORT ON THE FORM TWO NATIONAL
ASSESSMENT (FTNA) 2024**

034 AGRICULTURE

Published by:

The National Examinations Council of Tanzania,
P.O. Box 2624,
Dar es Salaam, Tanzania.

© The National Examinations Council of Tanzania, 2025

All rights reserved.

TABLE OF CONTENTS

FOREWORD	iv
1.0 INTRODUCTION	1
2.0 ANALYSIS OF STUDENTS' PERFORMANCE IN EACH QUESTION	2
2.1 Section A: Objective Questions	2
2.1.1 Question 1: Multiple - Choice Items	2
2.1.2 Question 2: Introduction to Livestock Production	12
2.2 Section B: Short Answer Questions	14
2.2.1 Question 3: Introduction to Soil Science	14
2.2.2 Question 4: Basics of Farm Management	19
2.2.3 Question 5 Crop Husbandry	24
2.2.4 Question 6: Principles of Crop Production	29
2.2.5 Question 7: Principles of Crop Production	37
2.2.6 Question 8: Introduction to Crop Production	42
2.2.7 Question 9: Mechanisation in Agriculture	49
2.3 Section C: Essay Question	54
2.3.1 Question 10: Introduction to Livestock Production	54
3.0 ANALYSIS OF STUDENTS' PERFORMANCE ON EACH TOPIC	59
4.0 CONCLUSION AND RECOMMENDATIONS	60
4.1 Conclusion	60
4.2 Recommendations	61
Appendix: Students Performance in Various Topics in FTNA 2024	63

FOREWORD

This report presents the Students' Item Response Analysis (SIRA) on the Form Two Agriculture National Assessment conducted in November 2024. The purpose of this report is to provide feedback to all education stakeholders on the factors which influenced students' performance in Agriculture assessment.

The Form Two National Assessment (FTNA) is a formative evaluation designed to monitor students' learning and offer feedback that teachers, students, and other educational stakeholders can use to improve teaching and learning. This analysis examines and explains students' performance in the Agriculture subject. Specifically, it highlights the reasons behind both good and weak performances in the 2024 assessment. Weak performance is attributed to solid understanding of subject concepts and content, while weak performance is linked to limited comprehension and misunderstandings of the same. Additionally, the report identifies poor English language proficiency as a key factor contributing to the weak performance of many students.

This report aims to help students identify their strengths and weaknesses, hence enhancing their learning. Similarly, it will assist teachers in recognizing challenging areas and addressing them effectively in their teaching practices.

The National Examinations Council of Tanzania (NECTA) hopes that the feedback provided in this report will shed light on the challenges for which education stakeholders to take appropriate measures to improve the teaching and learning of Agriculture subject. Ultimately, this will help students acquire the knowledge, skills, and competencies outlined in the syllabus, leading to better performance in future assessments and examinations, as well as improved functionality in their communities upon completion.

The Council extends its gratitude to all individuals who contributed to the preparation of this report.



Dr. Said Ally Mohamed
EXECUTIVE SECRETARY

1.0 INTRODUCTION

This report analyses students' performance in the Form Two National Assessment (FTNA) 2024 on the Agriculture subject. The Agriculture assessment paper was set using the 2021 format, which aligns with the 2019 Agriculture Syllabus.

The assessment was comprised of ten questions divided into sections A, B, and C. The students were required to answer all the questions. Section A included two objective questions: question 1 which comprised ten (10) multiple-choice items carrying ten (10) marks, and question 2 which consisted of five (5) matching items carrying five (5) marks. Section B contained seven (7) short-answer questions, each worth ten (10) marks and Section C had one essay question carrying 15 marks.

The number of students registered for the 2024 FTNA in Agriculture was 31,471 from 352 centres. Statistical data reveals that 29,010 (92.18%) students sat for the assessment, of whom 10,002 (34.50%) passed and 18,993 (65.50%) did not meet the passing criteria. The overall performance is average. Table 1 compares the performance of students in the Agriculture subject on the FTNA in 2023 and 2024.

Table 1: Students' Performance on FTNA 2023 and 2024

Year	Grades	A	B	C	D	F	With held	Total	Pass
2023	Female	111	191	1,400	3,183	9,769	6	14,660	39.24%
	Male	218	398	2,075	3,027	6,650	2	12,370	
	Total	329	589	3,475	6,210	16,419	8	27,030	
2024	Female	17	84	1,051	3,181	11,563	4	15,900	34.50%
	Male	62	200	1,746	3,661	7,430	11	13,110	
	Total	79	284	2,797	6,842	18,993	15	29,010	

Source: NECTA Statistics Book, **pg. 6**, FTNA (2024)

Table 1 indicates that, students' performance decreased by 4.74% in 2024 compared to 2023. Likewise, the proportion of students achieving high grades (A, B, and C) declined by 5.36 per cent over the same period.

The subsequent sections provide an analysis of students' performance in each question and topic. The report concludes with a summary and recommendations, offering insights from the analysis and suggestions to enhance students' performance in future assessments.

2.0 ANALYSIS OF STUDENTS' PERFORMANCE IN EACH QUESTION

This section provides an in-depth analysis of students' performance on each question, along with the topics assessed. For clarity, the analysis details the requirements of each question, the overall performance of students, their responses, and the potential factors influencing their performance. Illustrative samples of students' responses from scripts, as well as graphs, are included to enhance understanding.

The results are categorized into three performance levels: good (65-100%), average (30-64%), and weak (0-29%). These categories are visually represented using three colors: green for good performance, yellow for average performance, and red for weak performance.

2.1 Section A: Objective Questions

2.1.1 Question 1: Multiple - Choice Items

The question consisted of ten multiple-choice items derived from the following topics: *Factors of Production*, *Basics of Farm Management*, *Introduction to Soil Science*, *Crop Husbandry*, *Introduction to Agriculture*, *Introduction to Livestock Production*, *Principles of Crop Production*, *Mechanisation in Agriculture*, and *Introduction to Crop Production* as outlined in the Agriculture Syllabus. Each item was worth one mark, making a total of 10 marks. Students were required to select the correct answer from four given alternatives and write its corresponding letter in the box provided.

The question was attempted by all 29,010 students (100%). Among them, 4,994 students (17.21%) scored between 0.0 and 2.0 marks, 19,148 students (66.01%) scored between 3.0 and 6.0 marks, and 4,868 students (16.78%) scored between 7.0 and 10.0 marks. Figure 1 illustrates the distribution of students' scores for this question.

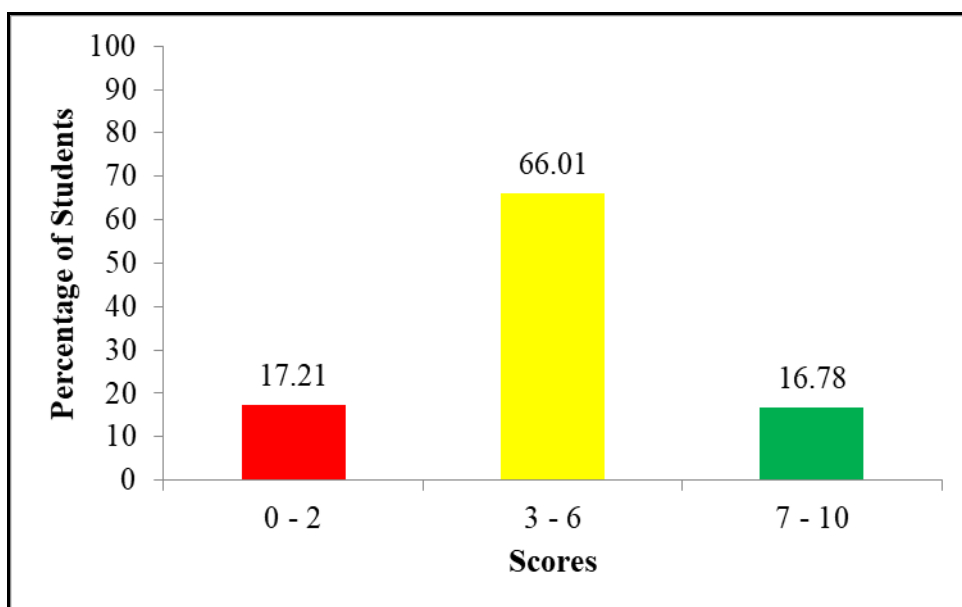


Figure 1: *Students' Performance on Question 1*

Referring to Figure 1, the majority of students (82.79%) scored between 3.0 and 10.0 marks, while 17.21 per cent scored between 0.0 and 2.0 marks, indicating that the overall performance was good.

A detailed analysis of the students' responses revealed that most students answered items (i), (ii), (iii), (vi), (v), (vii), (ix), and (x) correctly, while items (iv) and (viii) were commonly answered incorrectly. The analysis of the students' responses in each item is as follows:

Item (i) required the students to select the option that best defines the term agriculture. It assessed their comprehension of the concept and scope of agriculture. The item was:

- (i) *How can you best define the term agriculture?*
- A *Science of crop production*
 - B *Science and art of crop production*
 - C *Science and art of crop and livestock production*
 - D *Science of crop and livestock production*

The correct answer was C (science and art of crop and livestock production). Most students selected the correct option, demonstrating a clear understanding that agriculture is a multidisciplinary field involving

both scientific principles and practical skills applied to the cultivation of crops and the management of livestock. The incorrect options were:

A (science of crop production): This is incorrect because agriculture is not limited to science alone; it also involves artistic skills, such as planning, problem-solving, and practical techniques in tasks like planting crops, milking animals, or building farm infrastructure.

B (science and art of crop production): While this option acknowledges the dual nature of agriculture as both a science and an art, it is incomplete because it excludes livestock production, a critical component of agriculture.

D (science of crop and livestock production): This is also incorrect because it overlooks the artistic aspects of agriculture, such as the creativity and practical skills required for successful farming operations.

By selecting the correct option, students showed they understood that agriculture is a comprehensive discipline that integrates both scientific knowledge and practical, artistic skills in the production of crops and livestock.

Item (ii) required the assessed students' knowledge and understanding of value addition in land management. The question was:

(ii) *How can a farmer add the value of the land?*

A *Through fencing*

B *By removing trees*

C *By hindering accessibility*

D *By ditching*

The correct answer was A (through fencing). The majority of students selected the correct option, demonstrating a strong grasp of how fencing enhances land value. They understood that fencing improves the land's functionality, security, and marketability by defining boundaries, protecting the property, and adding visual attractiveness. The incorrect options were:

B (by removing trees): This is incorrect because removing trees leads to land degradation, such as increased soil erosion and reduced environmental quality. In contrast, planting trees is a recognized method to enhance land value by improving soil stability and ecological health.

C (by hindering accessibility): This option was incorrect because adding value to land involves improving, not reducing, accessibility. Constructing access roads or pathways is a common way to increase a property's usability and value, whereas hindering access reduces its functionality.

D (by ditching): This is incorrect because neglecting or abandoning land through actions like creating unnecessary ditches does not improve its value. Value addition requires proactive efforts, such as fencing, planting, or enhancing infrastructure, to make the land more useful and appealing.

By choosing the correct option, students demonstrated an understanding of effective land management practices that contribute to increased land value.

Item (iii) assessed students' understanding of cropping systems. The question asked:

(iii) *Why shifting cultivation is commonly practiced by peasant farmers?*

A To maintain the water sources

B It results into soil conservation

C High returns is achieved

D It does not need complicated knowledge

The correct answer was option D (it does not need complicated knowledge). Majority of the students provided correct answer indicating that they had a good understanding of the practice of shifting cultivation. They were aware that shifting cultivation does not require complicated knowledge because it is a traditional and straightforward agricultural practice based on simple techniques and local experience. The distractors were:

A (To maintain water resources). This option was incorrect because shifting cultivation involves clearing land as part of land preparation, which can disrupt water retention and soil moisture. Therefore, it cannot be a valid reason for peasant farmers to practice shifting cultivation.

B (It results in soil conservation). This option was also incorrect because shifting cultivation typically involves clearing vegetation, such as cutting down trees, which exposes the soil to erosion. This makes the practice detrimental to soil conservation, rather than beneficial. As a result, it cannot be a reason for peasant farmers to engage in shifting cultivation.

C (High returns are achieved). This option was incorrect because shifting cultivation is characterized by small-scale farming using traditional tools like hand hoes. This results in lower yields and limited productivity, meaning high returns are not typically achieved. Therefore, it is not a valid reason for peasant farmers to practice shifting cultivation.

Item (iv) assessed the students' knowledge of the soil properties. The question was,

- (iv) *The experiment on soil particles in a farm showed that it had 40% sand, 40% silt and 20% clay. With respect to the results of the experiment, what is likely to be the characteristics of the soil?*
- A Fewer air spaces B Moderate water holding capacity
C Low fertility D Difficult root penetration

The correct option was B (moderate water holding capacity). Most students provided incorrect answer showing possession of inadequate knowledge of the soil texture characteristics. They failed to understand that soil containing 40% sand, 40% silt, and 20% clay is classified as loam soil and retains a moderate amount of water. The distractors were:

A (fewer air spaces) was not correct because sand has larger particles, which typically results in more air spaces, not fewer. A soil with 40% sand, 40% silt, and 20% clay is closer to loam, which has a balanced texture with moderate air spaces. Therefore, this characteristic does not match the given proportions.

C (low fertility) was not correct since fertility is usually associated with clayey soils due to their ability to retain nutrients. A soil with the proportions of 40% sand, 40% silt, and 20% clay is loamy, which generally has moderate fertility, not low fertility. Hence, this option does not correctly describe the soil in question.

D (difficult root penetration) was not correct because the soil described in the item is loam, which typically has well-structured particles that allow for easy root penetration. In contrast, clay soils, with their dense texture, can present difficulties for root penetration. Therefore, "difficult root penetration" is more characteristic of clay soils, not the loam.

Item (v) assessed the students' knowledge of methods of controlling weed. Students were asked:

(v) *When you are thinking of fast action weed control method, which one would you recommend to be used?*

A *Cultural*

B *Chemical*

C *Mechanical*

D *Biological*

The correct answer was B (chemical). The majority of students correctly selected Option B (chemical), indicating good understanding of the mechanisms of the weed control methods. They were conversant that chemical weed control is a fast method because herbicides quickly target and kill weeds. The distractors were:

A (cultural): The cultural method involves practices such as crop rotation or mulching, which aim to reduce weed growth over time. However, this method is not fast-acting, as it relies on long-term practices and gradual suppression of weeds.

C (mechanical): Mechanical weed control involves physically removing or suppressing weeds, often manually. While effective, it is not as fast as chemical methods, which can kill or suppress weeds in a shorter time frame through the application of herbicides.

D (biological): Biological control uses living organisms, such as insects or fungi, to manage weeds. This method can take time to become effective, as the organisms need to establish and interact with the weeds. Therefore, it cannot be considered a fast-acting method.

The item (vi) tested the students' understanding of the importance of keeping livestock. The question was as follows:

(vi) *The following are the benefits of livestock production **except**:*

A *Source of industrial raw materials*

B *Source of farm power*

C *Source of employment*

D *Source of inorganic manure*

The correct answer was D (source of inorganic manure). The majority of students correctly chose option D (source of inorganic manure) which indicates a good understanding of the benefits of livestock. They

understood that inorganic manure originates from synthetic fertilizers as well as mineral-based products. The distractors were:

A (source of industrial raw materials): Livestock provide products like hides, wool, and milk, which are indeed used as raw materials in various industries. Therefore, this is a valid benefit of livestock production, and it is not the correct answer to the question asking for a benefit that is not related to livestock.

B (source of farm power): Animals such as donkeys, camels, and oxen, are commonly used as draught animals to perform various farm tasks, such as ploughing and transportation. This is another benefit of livestock production, making this distractor incorrect.

C (source of employment): Livestock production creates direct employment opportunities, such as animal care (feeding, healthcare), and indirect employment through the handling of livestock products (milk, eggs, meat). This is a valid benefit of livestock, so it is not the correct answer.

The item (vii) assessed students' knowledge and skills in maintaining soil fertility. The question asked:

(vii) You are consulted to solve a problem of loss of soil fertility that could be caused by soil erosion. What method of maintaining soil fertility would you propose as a remedy?

A Following

B Liming

C Mulching

D Additional of fertilizer

The correct answer was C (mulching). The majority of students correctly chose option C (mulching), indicating a good understanding of soil fertility maintenance techniques. They were aware that mulching helps remedy the loss of fertility caused by erosion by protecting the soil surface from wind and water. This reduce the impact of erosion, and preserve moisture. It also adds organic matter as it decomposes, enriching the soil with nutrients and improving its structure, which helps retain fertility. The distractors were:

A (fallowing): Fallowing is the practice of leaving land unplanted for one or more seasons to allow the soil to recover. It is primarily a water conservation method, especially in areas with limited rainfall. While it may have some benefits for soil restoration, it does not specifically address the

loss of soil fertility caused by soil erosion. Thus, it is not the correct answer.

B (liming): Liming involves adding materials, such as lime, to acid soils to neutralize acidity and improve soil conditions for plant growth. While liming can improve soil health in acidic soils, it does not directly address the issue of soil erosion, which is the cause of the fertility loss in this context. Therefore, it is not the correct remedy for soil fertility loss due to erosion.

D (addition of fertilizers): Fertilizers are added to the soil to replenish nutrients, but they do not control soil erosion. Fertilizers may help improve soil fertility in the short term, but they do not address the underlying problem of soil erosion, which leads to the loss of fertile topsoil. Hence, it is not the best solution for combating fertility loss caused by erosion.

In item (viii) the students were assessed on knowledge of sources of farm power. The question asked:

(viii) *In a village where people engage in crop and livestock production, the agricultural officer called a meeting and emphasized on the use of animal power over human power. Why the agricultural officer emphasises so?*

- A Animal power has higher work output*
- B Animal power can be used for all types of work*
- C Animals do not get tired*
- D Animals do not need training*

The correct answer was A (animal power has higher work output). The majority of students failed to select the correct response showing poor understanding of the advantages of animal power. They did not know that when properly trained and utilized, animals can often perform farm tasks more efficiently than humans. They can carry out labor-intensive tasks, such as ploughing or hauling, with higher output compared to manual labor. The distractors were:

B (Animal power can be used for all types of work): Animal power is effective for various farm tasks, such as pulling carts, ploughing, weeding, and pumping water. However, certain tasks, like the construction of farm structures (e.g., erecting walls), cannot be performed by animals. This

misunderstanding demonstrates a lack of knowledge about the limitations of animal power in farm operations.

C (animals do not get tired): One of the limitations of using animals for power is that, like humans, they can become fatigued after continuous work. Thus, this statement is incorrect because animals do get tired, and their ability to provide power is limited by factors like rest and conditioning. Therefore, this is not a correct answer.

D (animals do not need training): Training is an essential part of using animals for farm work. Animals need to be trained to perform specific tasks, such as pulling plough or carts. Without proper training, animals would not be effective in mechanized farming operations. Therefore, this statement is incorrect.

Item (ix) assessed students understanding of risk management strategies. It was as follows:

- (ix) *Which method of reducing risk and uncertainty that involves production of more than one type of product?*
- A Flexibility in production*
 - B Diversification in production*
 - C Maintaining liquidity*
 - D Insurance of products*

The correct answer was B (diversification in production). A majority of students correctly chose this option, demonstrating a solid understanding of the concept and its role in minimizing risks and uncertainties. They were familiar that diversification in production is a strategy used in risk management where a producer engages in producing multiple types of products rather than relying on a single product. This approach helps reduce risks and uncertainties by spreading potential losses across different products or markets. The incorrect options included:

A (flexibility in production): This refers to the ability to adapt or modify production processes when needed, which does not specifically involve producing multiple products simultaneously.

C (maintaining liquidity): This involves retaining financial reserves, such as cash or assets, to address emergencies, which is a financial strategy rather than a production-based approach.

D (insurance of products): This entails paying premiums to an insurance provider to cover potential future losses, which is a risk-transfer strategy, not a production method.

Although these distractors represent other strategies for managing risks and uncertainties, none of them specifically address the concept of producing more than one type of product at the same time, which is the essence of diversification in production.

Item (x) assessed students' understanding of soil texture. The question was as follows:

- (x) *The teacher assigned student to bring different types of soil and asked them to identify the soil type that has the smallest particles. Which type of soil did they identify?*
- A Clay B Silt C Sand D Gravels

The correct answer was A (clay). A majority of students selected the correct answer, showing a strong grasp of the characteristics of different soil textures. They correctly recognized that clay soil is characterized by its extremely small particle size, with diameters of less than 0.002 mm, making it the soil type with the finest texture. The incorrect options were: B (silt): While silt particles are fine, their size ranges from 0.002 mm to 0.02 mm, making them larger than clay particles. C (sand): Sand particles are significantly larger, ranging from 0.05 mm to 2 mm, giving sand a coarse texture. D (gravel): Gravel particles are the largest, with sizes ranging from 2 mm to 200 mm, making them vastly larger than both clay and the other soil types.

Although all the distractors represent different soil types, none have particle sizes as small as clay. This distinction makes clay the correct answer and highlights the fundamental property of its fine texture due to its microscopic particles.

2.1.2 Question 2: Introduction to Livestock Production

The question comprised five items, each allocated one mark, for a total of five marks. The question aimed to test students' understanding of livestock breeds. The students were required to match the items in List A, representing five classes of livestock, with their corresponding responses in List B, which listed seven livestock breeds. To answer this question, students had to write the letter corresponding to the correct response from List B beneath the appropriate item number in List A. The lists were as follows:

List A	List B
(i) Cattle	A California
(ii) Pig	B Saanen
(iii) Goat	C Camel thorn
(iv) Sheep	D Leghorn
(v) Poultry	E Large white
	F Merino
	G Friesian

The question was attempted by all 29,010 students (100%). The score distribution is as follows: 12,712 students (43.82%) scored between 0.0 and 1.0 marks, 12,147 students (41.87%) scored between 2.0 and 3.0 marks, and 4,151 students (14.31%) scored between 4.0 and 5.0 marks. Figure 2 illustrates the distribution of students' scores for this question.

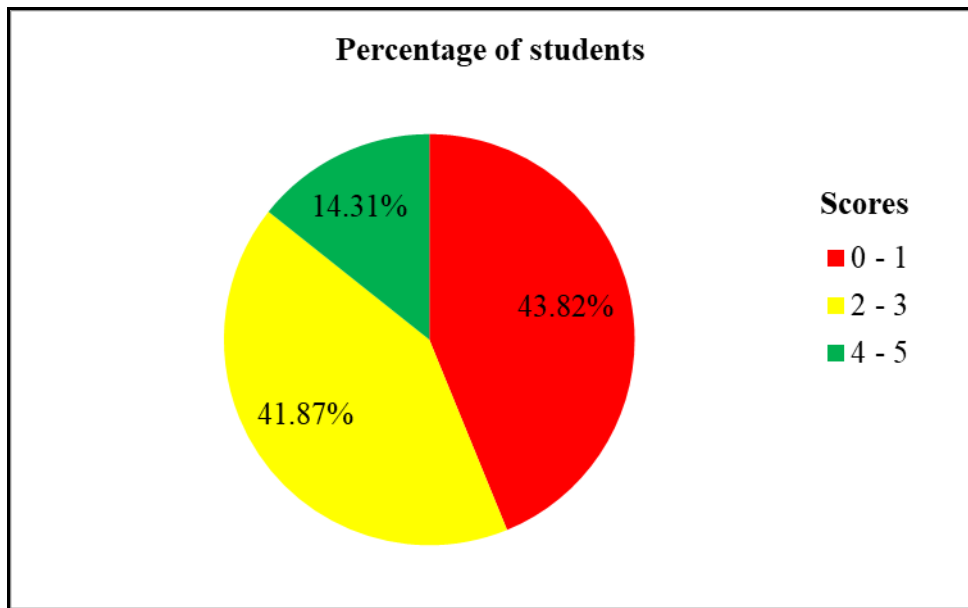


Figure 2: *Students' Performance on Question 2*

The data in Figure 2 shows that 56.18 per cent of students scored between 2.0 and 5.0 marks, while 43.82 per cent scored between 0.0 and 1.0 marks. This indicates that the general performance on this question was average.

Most students answered items (i), (ii), and (v) correctly. However, incorrect responses were common for items (iii) and (iv). Below is a detailed analysis of students' responses to each item:

In item (i), most students correctly identified the breed of cattle as G (Friesian). This demonstrates a solid understanding of cattle breeds among the students.

In item (ii), the majority of students correctly selected E (Large White) as the breed of pig. This indicates a good level of understanding regarding pig breeds.

In item (iii), many students incorrectly identified the breed of goat. The correct response was B (Saanen), but most students chose F (Merino), which is a breed of sheep. This suggests that students were not adequately familiar with goat breeds.

In item (iv), a significant number of students incorrectly identified the breed of sheep. The correct response was F (Merino), but many students

mistakenly selected B (Saanen), a breed of goat. This indicates a lack of awareness regarding sheep breeds.

In item (v), most students successfully identified the poultry breed as D (Leghorn), reflecting a strong understanding of poultry breeds.

2.2 Section B: Short Answer Questions

2.2.1 Question 3: Introduction to Soil Science

The question assessed students understanding of the concept of soil texture and soil structure. The question asked:

- (a) *Briefly explain four types of soil structure according to their structural arrangement of aggregates.*
 - (i). *Describe the relationship between soil texture and soil structure.*
 - (ii). *Differentiate between soil texture and soil structure.*

The question was attempted by 29,009 students (99.99%). Of these, 25,992 students (89.60%) scored between 0.0 and 2.5 marks, 2,397 students (8.20%) scored between 3.0 and 6.0 marks, and 638 students (2.20%) scored between 6.5 and 10.0 marks. Figure 3 illustrates the distribution of students' scores for this question.

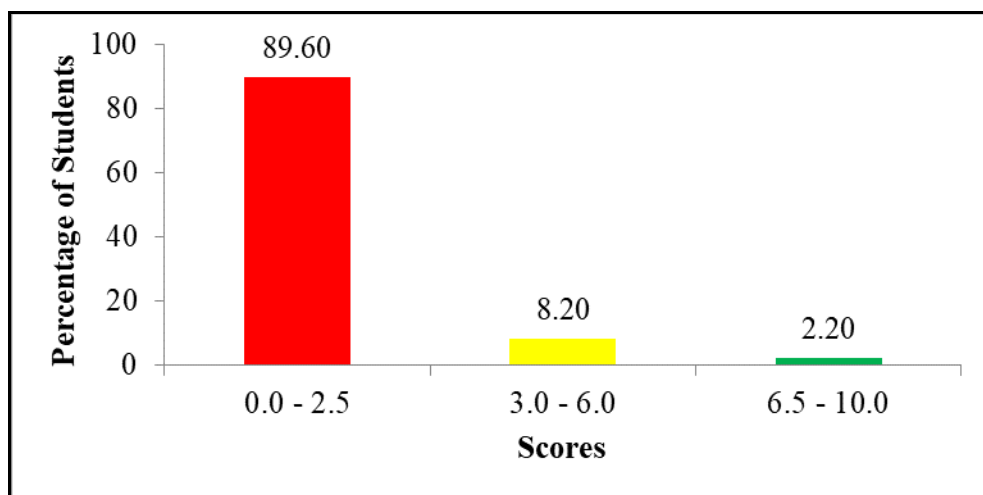


Figure 3: Students' Performance on Question 3

As shown in the Figure 3, the majority of students (89.60%) scored between 0.0 and 2.5 marks, while only 10.40 per cent scored between 3.0

and 10.0 marks. This indicates that the overall performance was generally weak.

Data analysis reveal that 89.60 per cent of students performed poorly on this question. Most students provided incorrect responses to almost all parts of the question.

In part (a), many students failed to correctly explain the four types of soil structure based on the arrangement of soil aggregates. Instead of identifying the types of soil structure, such as granular, blocky, platy, and prismatic, the majority mistakenly mentioned soil types like *clay*, *loam*, *silt*, and *sand*. Some students listed soil components such as *soil air*, *soil water*, *organic matter*, *inorganic matter*, and *living organisms*, while others *described soil profile layers, including the O-horizon, A-horizon, B-horizon, and C-horizon*. These responses indicate a lack of understanding of soil structure.

In part (b)(i), most students were unable to describe the relationship between soil texture and soil structure. They provided a range of incorrect responses, such as: *soil texture provides aeration, while soil structure controls the availability of water for plants, soil texture refers to biological, physical, and mechanical weathering processes, while soil structure refers to parent material found under the soil profile, soil texture increases soil organisms, while soil structure contains no organisms because there is no air*. These responses highlight a lack of knowledge about the concepts of soil texture and soil structure.

Similarly, in part (b)(ii), the majority of students struggled to differentiate between soil texture and soil structure. Incorrect responses included statements such as: *soil texture is the type of soil used for keeping livestock, while soil structure is the type of soil used for growing crops, soil texture is the type of soil used for constructing houses, while soil structure is used for crop production, soil texture is a branch of science that studies soil, while soil structure is a branch of science that deals with soil utilization, soil texture is the type of soil that retains moisture, while soil structure is the type of soil that contains air spaces*. These responses reflect a poor grasp of the concepts. Extract 1.1 provides a sample of incorrect responses to this question.

3. (a) Briefly explain four types of soil structure according to their structural arrangement of aggregates.
- (i) Soil horizon A - This are the first arrangement of soil when plant root and water and living organism are shelter them.
 - (ii) Soil horizon B - This are the second arrangement of the soil when plant root are average to support first horizon.
 - (iii) Soil horizon C - This are the third horizon when there have a mixture of soil.
 - (iv) Soil horizon D. This are the the arrangement of soil when have a rock presence of rock only.
- (b) (i) Describe the relationship between soil texture and soil structure.
Soil structure is the arrangement in the horizon of the soil and soil texture are soil particle on the horizon of the soil.
- (ii) Differentiate between soil texture and soil structure.
~~Soil texture~~ soil structure - is the arrangement and aggregation of the soil particle on the soil while
soil ~~structure~~ texture - is the genesis evolution of the soil particle within the soil sample weathering.

Extract 1.1: A sample of incorrect responses to Question 3.

Extract 1.1 illustrates a student's responses in which all parts of the question were responded incorrectly, demonstrating a poor understanding of soil structure and texture.

Furthermore, the data indicate that 8.20 per cent of the students demonstrated average performance. Most of these students provided correct

responses in part (b)(i) and (b)(ii), accurately describing the relationship and differences between soil texture and soil structure, respectively. However, in part (a), while they were able to identify the types of soil structure, they failed to provide detailed explanations for each type. This suggests that these students had only a partial understanding of the concept, which limited their ability to score full marks.

On the other hand, 2.20 per cent of the students performed well on the question. Most of them provided correct responses to nearly all parts of the question.

In part (a), these students successfully explained the four types of soil structures based on the structural arrangement of aggregates. Their responses included accurate descriptions of prism-like, platy-like, block-like, and sphere-like structures.

In part (b)(i), the students were able to describe the relationship between soil texture and soil structure. Examples of their correct responses highlighted how both soil structure and soil texture influence factors affecting plant growth, such as root penetration, aeration, drainage, soil fertility, and microbial activity.

Additionally, in part (b)(ii), the students effectively differentiated between soil texture and soil structure. Correct responses included explanations such as *soil texture refers to the proportion of individual soil particles, including sand, silt, and clay*, while *soil structure refers to the arrangement of these individual soil particles within the soil*.

The students' accurate and well-articulated responses in all parts of the question demonstrate a strong understanding of the subject matter. Their good performance can be attributed to a clear grasp of key concepts. Extract 1.2 provides an example of correct responses to this question.

3. (a) Briefly explain four types of soil structure according to their structural arrangement of aggregates.
- Sphere-like / Spheroid:
 -> This is the arrangement of aggregates that form a sphere-like, due to the soil particles arrangement.
 - Plate-like / Platelat:
 -> This formed by arrangement of soil aggregate that form flat round plate and thus results to the formation of this plate-like.
 - Prism-like
 -> This is resulting when soil particles in the aggregate form prism-like, thus resulting into formation of the prism-like in structure in the soil aggregate.
 - Block-like / blocky
 -> This due formation of soil particles that form this shape that is block-like in shape due to arrangement of soil particles in the soil.
- (b) (i) Describe the relationship between soil texture and soil structure.
Relationship between soil texture and soil structure: is that $\Rightarrow$ Relative proportion of sand, silt and clay soil particles always determine the arrangement of individual particles in soil aggregates or peds.
- (ii) Differentiate between soil texture and soil structure.
Soil texture $\Rightarrow$ is the feeling of coarseness or fineness that resulting to relative proportion of sand, silt and clay particles in the soil while
Soil structure $\Rightarrow$ is the arrangement of individual soil particles in the soil aggregates or peds.

Extract 1.2: A sample of correct responses to Question 3.

Extract 1.2 provides an example of a student's responses that were correct for all parts of the question, demonstrating a strong understanding of the concepts of soil structure and texture.

2.2.2 Question 4: Basics of Farm Management

The question tested students' knowledge of the concepts of risk and uncertainty in production. The question was as follows:

- (a) *Explain how each of the following uncertainties may affect agricultural production.*
 - (i) *Price uncertainty*
 - (ii) *Yield uncertainty*
 - (iii) *Technological uncertainty*
 - (iv) *Institutional uncertainty*
- (b) *Briefly explain the role of the government in minimizing risks and uncertainties facing farmers. Give four points.*

The question was attempted by 29,009 students (99.99%). Of these, 24,537 students (84.58%) scored between 0.0 and 2.5 marks, 4,095 students (14.12%) scored between 3.0 and 6.0 marks, and 377 students (1.30%) scored between 6.5 and 10.0 marks. Table 2 illustrates the distribution of students' scores for this question.

Table 2: Students' Performance on Question 4

Scores	Percentage of Students
0.0 – 2.5	84.58
3.0 - 6.0	14.12
6.5 – 10.0	1.30

According to Table 2, the majority of students (84.58%) scored between 0.0 and 2.5 marks, while only 15.42 per cent scored between 3.0 and 10.0 marks. This indicates a generally weak performance.

Data analysis reveals that 84.58 per cent of the students performed poorly, with most providing incorrect responses to nearly all parts of the question. In part (a), students failed to explain how the listed uncertainties affect agricultural production. Instead, they provided a variety of incorrect responses, including: (i) price uncertainty: described as *the buying and*

selling of agricultural products, a cause of crop and livestock damage, a solution to agricultural problems, a source of industrial materials, and a cause of pest and disease spread in the field (ii) *yield uncertainty: defined as something that does not require complicated knowledge, a factor lowering product quality, a cause of pest and disease increase, a measure of yield per given area, and a type of uncertainty causing production losses* (iii) *technological uncertainty: misinterpreted as increasing weeding during production, affecting crop growth, causing ozone layer destruction due to industrial technology, leading to theft in the production sector, and helping acquire new knowledge* (iv) *institutional uncertainty: Incorrectly defined as the science of growing crops and keeping livestock, farm management, a factor increasing production while reducing market availability, supervision of farming tools, and a limitation of input supply by institutions.* Students demonstrated limited understanding of the types of uncertainties. These incorrect responses highlight a lack of knowledge about the concept of uncertainties in agriculture.

In part (b), students were tasked to explain the role of the government in minimizing risks and uncertainties facing farmers. However, most failed to address this aspect, instead listing factors that cause risks, such as *weather hazards, fire outbreaks, pest and disease outbreaks, theft, and farmers' health issues*. Others identified types of risks, including *production, marketing, financial, institutional, and human risks*, rather than discussing the government's role in minimizing risks and uncertainties. The students misinterpreted the task as identifying causes or types of risks, rather than explaining how the government can minimize them. Extract 2.1 provides an example of incorrect responses submitted for this question.

4. (a) Explain how each of the following uncertainties may affect agricultural production.

(i) Price uncertainty

When a agricultural production use a labour. And for farm power in the production and not know the advanced the price in the production

(ii) Yield uncertainty

When a farmer is produce yield in the farm and not know to advanced in the agricultural production

(iii) Technological uncertainty

When a farmer plan the technical to apply
Agricultural production and not know to advance to the
Production.

(iv) Institutional uncertainty

When agriculture production production use
Institution in the production and not know
The Advance Out Come not know to the production

(h) Briefly explain the role of the Government in minimizing risks and uncertainties facing farmers. Give four points.

(i) Weather Condition. What is the situation facing a farmer
Who waste to planting Crop

(ii) Pest and diseases big breakdown on Crop production. Is the
Situation when a Crop is diseases on Crop production

(iii) Theft. When a farmer is losted the Crop from theft
of Crop production

(iv) Disease Control pest
eg.

Extract 2.1: A sample of incorrect responses to Question 4.

Extract 2.1 is an example of a student's responses that were incorrect in all parts of the question, indicating a poor understanding and lack of mastery of the subject matter.

Further analysis shows that 14.12 per cent of the students achieved an average performance. In part (a), they provided partially correct responses,

particularly regarding the effects of yield and institutional uncertainties on agricultural production. In part (b), some students gave partially correct responses about the role of the government in minimizing risks and uncertainties, while others failed to provide comprehensive responses. This trend resulted in average scores, reflecting an incomplete understanding of the concepts of risk and uncertainty.

However, 1.30 per cent of the students demonstrated good performance, as most of them provided correct responses to almost all parts of the question. In part (a), they accurately explained how the given uncertainties affect agricultural production. Their correct responses included: (i) *Price uncertainty: changes in the prices of inputs and agricultural products can affect the profitability of farmers' enterprises* (ii) *Yield uncertainty: farmers are often unable to predict agricultural yields due to factors such as weather variability, climate change, and the occurrence of pests and diseases* (iii) *Technological uncertainty: farmers may be unaware of the precise impact of new technologies on the quality and quantity of yields* (iv) *Institutional uncertainty: this involves potential changes in land tenure systems, as well as the functioning and reliability of credit agencies or institutions.*

In part (b), the students successfully explained the roles of the government in minimizing risks and uncertainties facing farmers. Their responses included measures such as: *providing weather forecasting services, conducting agricultural research and offering extension services, subsidising input prices to reduce production costs, regulating markets to ensure stability, introducing insurance programs to protect against losses, developing infrastructure to support agricultural activities, supplying market information to farmers, promoting production on a contract basis, and establishing storage facilities and supporting partial processing of agricultural products.* These correct responses reflect the students' strong knowledge and understanding of risks and uncertainties in agriculture. Extract 2.2 illustrates an example of these correct responses.

4. (a) Explain how each of the following uncertainties may affect agricultural production.

(i) Price uncertainty

Examples of price uncertainty include price fluctuation according to demand. A farmer can produce a huge sum of products but get a loss due to price uncertainties.

(ii) Yield uncertainty

This is also called production uncertainty because of the variable yield achieved in an agricultural year. When yield is low a farmer gets loss and viceversa is true.

(iii) Technological uncertainty

Technological uncertainty is the change in technology compared to prices and advancement. When technological uncertainties occur, a farmer will not know which implement to use or the change in price can cost the farmer.

(iv) Institutional uncertainty

Institutional uncertainty can occur with the change of policy or problems associated with an agricultural institution. When an institution is closed or change its policy, an agricultural farmer will get loss and viceversa.

(b) Briefly explain the role of the Government in minimizing risks and uncertainties facing farmers. Give four points.

(i) The government is providing insurances to farmers which can help them with their current problems associated to risks or uncertainties. This help farmers get profit even after disasters.

(ii) The government is providing loans and grants to agricultural farmers. After a risk or uncertainty which results to loss, a farmer can be provided with a loan to sustain his or her farm.

(iii) The government is providing education to farmers through mass media and other sources which help farmers to minimize risks and uncertainties.

(iv) The government has employed agricultural specialists "BWANA SHAMBA" who is responsible for educating, advising, and providing appropriate help to farmers in need.

Extract 2.2: A sample of correct responses to Question 4.

Extract 2.2 is an example of a response from a student who provided correct responses to all parts of the question. He/she demonstrated a strong understanding of the concepts of risks and uncertainties in agricultural production.

2.2.3 Question 5 Crop Husbandry

The question assessed the students' knowledge and skills of producing sorghum and it asked as follows:

Analyse the procedures of planting the Sorghum crop basing on the following guidelines.

- (a) Land preparation*
- (b) Propagation and spacing*
- (c) Manures and fertilizers*
- (d) Weeding*
- (e) Harvesting*

The question was attempted by 29,008 students (99.99%). Among them, 25,771 students (88.84%) scored between 0.0 and 2.5 marks, 3,059 students (10.55%) scored between 3.0 and 6.0 marks, and 178 students (0.61%) scored between 6.5 and 10.0 marks. Table 3 shows the distribution of students' scores for this question.

Table 3: Students' Performance on Question 5

Scores	Percentage of Students
0.0 – 2.5	88.84
3.0 – 6.0	10.55
6.5 – 10.0	0.61

With reference to Table 3, the majority of students (88.84%) scored between 0.0 and 2.5 marks, while only 11.16 per cent scored between 3.0 and 10.0 marks, indicating a generally weak performance.

Performance statistics show that 88.84 per cent of the students performed poorly on this question. Most of them were unable to analyse the procedure for producing sorghum based on the given guidelines. In part (a), many

students failed to explain the steps involved in land preparation for sorghum production. Instead, they provided incorrect responses, such as describing the characteristics of land as a factor of production. Examples include: *the type of land determines the type of farming that can be done*, *different types of land determine different types of farming*, and *the climatic conditions of an area guide the use of land for farming*. Others incorrectly defined land preparation as *simply cultivating the land*. These responses highlight a lack of knowledge about the proper procedures for preparing land for sorghum cultivation.

In part (b), students failed to explain how sorghum is propagated and spaced. Instead, many gave incorrect responses such as: *sorghum is propagated asexually at a spacing of 1 meter*, *sorghum is propagated by sowing seeds in nursery beds with a spacing of 1 cm*, *sorghum is propagated by stem cuttings with a spacing of 10 cm*, and *sorghum is propagated by fruits*. These responses demonstrate a lack of understanding and skills related to sorghum propagation and spacing.

In part (c), students were unable to explain how manure and fertilizers are applied in sorghum production. Many simply listed the benefits of organic manure, such as: *it improves soil structure*, *increases water-holding capacity*, *improves aeration and moisture conservation*, and *controls soil erosion*. Others listed types of fertilizers, such as *NPK*, *UREA*, *TSP*, *DAP*, and *Booster*, without explaining their application. These responses indicate a poor understanding of the practical application of manure and fertilizers in sorghum production.

In part (d), most students failed to explain how weeding is conducted in sorghum fields. Instead, they provided generic definitions and effects of weeds, such as: *a weed is any plant growing out of place*, *weeds lower the quality of crop harvest and pasture grass*, *some weeds are parasitic to crop plants*, and *weeds increase the cost of production*. These responses reveal a lack of knowledge about weeding practices specific to sorghum.

In part (e), students were unable to explain the proper procedure for harvesting sorghum. Many provided incorrect responses, such as: *harvesting is the process of removing plants from the farm*, *harvesting leads to soil fertility*, *sorghum involves taking all crops from the farm* and *sorghum should be harvested by uprooting the whole plant*. These

responses indicate a lack of knowledge and skills related to sorghum harvesting.

In conclusion, the incorrect responses across all parts of the question reveal a significant gap in knowledge and skills regarding the procedures involved in sorghum production. Extract 3.1 provides an example of incorrect responses to this question.

5. Analyse the procedures of planting the Sorghum crop basing on the following guidelines.

(a) Land preparation
- This was the first work in the farm in the area for planting.

(b) Propagation and spacing
This was the arrangement crop in that space in the farmer of the cultivate.

(c) Manures and fertilizers
- This was the importance of the farm if they no manures and fertilizers.

Crop it is not come good so manures and organic matter and fertilizers is the importance in the farm.

(d) Weeding
- This is the process weeding in the farm to the crop so if you planting and you weeding in the farm.

(e) Harvesting
- This was the process of the farm so if you planting and weeding and you harvesting so harvesting is the process in the farm. Example crop which are, maize, beans.

Extract 3.1: A sample of incorrect responses to Question 5.

Extract 3.1 is a sample of the responses from a student who provided incorrect responses to all parts of the question demonstrating poor understanding of sorghum production.

Furthermore, 10.55 per cent of the students demonstrated average performance. Most of them provided partially correct responses across almost all parts of the question. In part (a), they gave incomplete explanations of the procedures for preparing land for growing sorghum, failing to fully address the necessary steps. In part (b), their responses on propagation and spacing were inconsistent. Some students correctly identified the method of propagation but gave incorrect spacing, while others provided the correct spacing but an incorrect propagation method. In part (c), their explanations on the application of manure and fertilizers for sorghum production were insufficient, lacking the depth and accuracy needed. In part (d), The responses on weeding in sorghum fields were inadequate, with students failing to explain the specific techniques or timing required for effective weed control. In part (e), their explanations of sorghum harvesting were incomplete and failed to capture the proper methods and procedures. These responses suggest that the students possess only partial knowledge and limited skills related to sorghum production.

Nevertheless, the statistics show that only 0.61 per cent of the students achieved good performance. Most of them provided accurate responses to almost all parts of the question. In part (a), they correctly explained the land preparation process for sorghum production, including steps such as *clearing the bush, uprooting stumps, and cultivating the land using a hand hoe, ox plough, or tractor*. They also mentioned *harrowing the soil to obtain a fine tilth*. In part (b), they accurately described the propagation of sorghum, stating that *it is propagated by seeds at spacing such as 60 cm x 75 cm, 15 cm x 20 cm, or 80 cm x 30 cm, depending on the variety*. In part (c), they provided precise explanations for the application of manure and fertilizers, such as *applying farmyard manure to the seedbeds before sowing or using phosphate fertilizers when farmyard manure is unavailable*. They also mentioned *applying nitrogenous fertilizer as a top dressing three weeks after planting*. In part (d), they effectively analysed the weeding process in sorghum fields, *including removing weeds using a hand hoe or uprooting weeds growing close to the sorghum plant by hand*. They also addressed controlling serious weeds like witch-weed (*Striga spp*) *through crop rotation and trap cropping*. In part (e), they correctly described the harvesting process for sorghum, detailing steps such as *cutting off the mature sorghum heads with a sharp knife, spreading the heads in the sun for further drying, threshing, winnowing, and storing clean seeds in a waterproof storage facility*.

These correct responses demonstrate that these students possessed adequate knowledge and skills regarding the procedures involved in sorghum production. Extract 3.2 provides an example of correct responses to this question.

5. Analyse the procedures of planting the Sorghum crop basing on the following guidelines.

(a) Land preparation

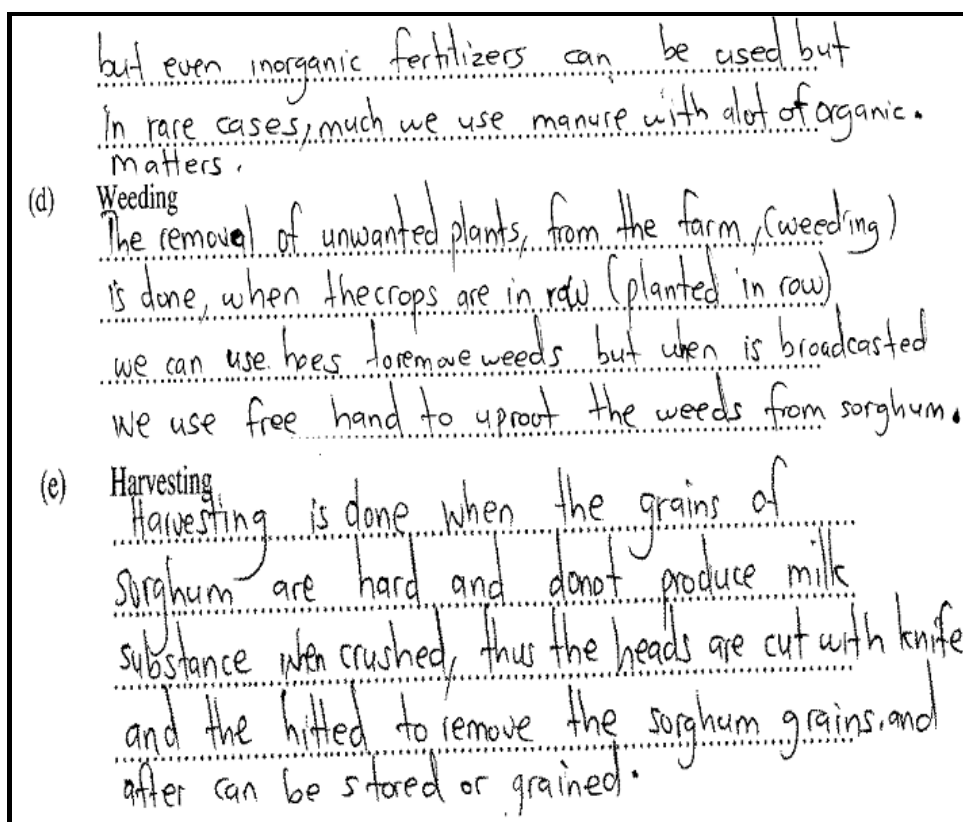
Land should be prepared at early stage (on the onset of rain) and also the seed bed should be fine to allow easy penetration of air, water and roots to the soil.

(b) Propagation and spacing

The propagation can be self or sexual (through seeds), and the spacing recommended is $60 \times 75 \text{ cm} \times 25 \text{ cm}$ when ~~interplanted~~ is free planted and when interplanted we use $90 \text{ cm} \times 15 \text{ cm}$ to plant sorghum.

(c) Manures and fertilizers

Sorghum production; requires to use the organic manures, which are not affective to the soil



Extract 3.2: A sample of correct responses to Question 5.

Extract 3.2 is an example of the responses from the student who provided correct responses to all parts of the question. He/she demonstrated good understanding of sorghum production.

2.2.4 Question 6: Principles of Crop Production

The question tested the students' knowledge of the effects of crop pests and their control. The question asked:

- (a) *Analyse the effects of each of the following insect pests in crop production:*
 - (i) *Nematodes*
 - (ii) *Sucking pests*
- (b) *How are the following cultural pest control methods used in crop production?*
 - (i) *Timely planting of crops*
 - (ii) *Timely harvesting of crops*
 - (iii) *Proper tillage of land*
 - (iv) *Closed season*

(v) *Growing trap crops*

The question was attempted by 29,008 students (99.99%). Among them, 27,341 students (94.25%) scored between 0.0 and 2.5 marks, 1,470 students (5.07%) scored between 3.0 and 6.0 marks, and 197 students (0.68%) scored between 6.5 and 10.0 marks. Table 4 illustrates the distribution of students' scores for this question.

Table 4: Students' Performance on Question 6

Scores	Percentage of Students
0.0 – 2.5	88.84
3.0 – 6.0	10.55
6.5 – 10.0	0.61

Table 4 shows that 94.25 per cent of the students scored between 0.0 and 2.5 marks, while only 5.75 per cent scored between 3.0 and 10.0 marks, reflecting an overall weak performance.

Data analysis reveals that a majority (94.25%) lacked an understanding of the concepts assessed, leading to responses that deviated from the requirements of the question.

For instance, in part (a), many students provided general effects of crop pests, such as *reducing quality*, *lowering yields*, *causing diseases*, and *increasing production costs*, rather than focusing on the specific effects of nematodes and sucking pests. Additionally, some students described the impacts of pests that attack leaves, such as *eating leaves*, *damaging fruits and flowers*, and *destroying plant stems*, instead of addressing the effects of the specified pests. The confusion in distinguishing between the effects of specific pests (nematodes and sucking pests) and general pest effects reflects insufficient mastery of the subject matter.

In part (b), some students explained the meaning of cultural methods of controlling crop pests mentioned in the question rather than how these methods specifically control pests. Others discussed the main pest control methods, such as *biological*, *chemical*, *cultural*, and *mechanical*, instead of

focusing on the specific cultural methods highlighted in the question. The inability of students to link cultural methods to their specific application in pest control suggests limited understanding of the subject matter. Extract 4.1 provides an example of a response from a student who demonstrated a lack of understanding of the relevant concepts in the question.

6. (a) Analyse the effects of each of the following insect pests in crop production:

(i) Nematodes

Is the insect pest in crop production which can cause the crops and change the colour of crops which brownish colour.

(ii) Sucking pests

Is the insect pest which can cause the crops of sucking pests and increase the

(b) How are the following cultural pest control methods used in crop production?

(i) Timely planting of crops

This means the time of planting of crops and to prepared to planting the crops and use early timely of planting and its good of use timely planting of crops

	(ii) Timely harvesting of crops This means ^{that} of time to harvesting the crops and then to clean the farm because it can continues to last period and of planting another crops.
	(iii) Proper tillage of land This is provide to planting the farmer and its good implement, machinery, equipment and the this tillage it can improve the save time of you work and you continue the another work. (iv) Closing season This means the closing season it is called to harvesting the crops in the farm and open new season for planting crops. (v) Growing trap crops This is means the crops which is controlling the pest and disease in the farmer when you growing trap it is not problem of pest and disease.

Extract 4.1: A sample of incorrect responses to Question 6.

Extract 4.1 is a sample of the responses from a student who provided incorrect responses to all parts of the question. He/she demonstrated poor understanding of the effects and methods of crop pests control.

Moreover, 5.07 per cent of the students performed averagely on this question by providing incomplete or partially correct responses to most parts of the question. In part (a)(i), the students gave insufficient explanations regarding the effects of nematodes on crop production, failing to detail specific impacts such as *reduced root functionality*, *stunted growth*, or *nutrient uptake interference*.

In part (a)(ii), their responses lacked depth in addressing the effects of sucking pests, often generalizing their impacts rather than focusing on specific consequences like sap depletion or the transmission of plant diseases.

While the students managed to provide correct responses for parts (b)(i), (ii), and (iii), they struggled with parts (b)(iv) and (b)(v), where they failed to accurately describe traditional pest control methods or how they are implemented. This resulted in average scores on this question. The students demonstrated a basic awareness of the concepts but lacked detailed knowledge and the ability to elaborate effectively on specific points.

On the contrary, only 0.68 per cent of the students did well on the question. Majority managed to supply correct responses to almost all parts of the question. In part (a), they correctly analysed the effects of the given pests in agricultural production. For part (a)(i) they provided correct responses such as: *Nematodes damage roots of crops which make the plant fail to absorb water and nutrients and therefore wilt.* (ii) *sucking insects feed on crop plants by sucking plant sap. This retards plant growth and transmit other plant diseases* whereas in part (b), the students were able to provide correct explanations on how each of the named cultural control methods are used in crop production like (i) *timely planting; early planted crops are able to escape insect pest attack than the late planted crops* (ii), *timely harvesting; some storage insect pests attack plants while in the field. Therefore, avoid delay in crop harvest may reduce chances of crop being attacked with such pests* (iii) *proper tillage; field cultivation will expose soil borne insect pest to the sun and predators like birds which can feed on them.* (iv) *closed season; this is a practice of skipping to grow a susceptible crop during a particular season. During this period the crop residues are collected and burnt to destroy eggs of the insects before the growing season.* (v) *trap crop; a trap crop is a crop which is grown before or together with the main crop. Once the insect pest reaches the trap crop, it is then killed by other methods such as insecticides.* The student's correct responses in this question signifies good mastering of the subject matter. Extract 4.1 is a sample of incorrect responses to the question.

On the contrary, only 0.68 per cent of the students performed well on this question, with the majority providing correct responses to nearly all parts. In part (a), they effectively analysed the effects of the given pests on

agricultural production. For part (a)(i), they accurately explained that *nematodes damage the roots of crops, impairing the plant's ability to absorb water and nutrients, leading to wilting and stunted growth*. They also analysed that *sucking pests feed on plant sap, which retards plant growth and may transmit other plant diseases, thereby lowering productivity in part (a)(ii)*.

In part (b), students provided accurate explanations of how each of the specified cultural control methods is applied in crop production such as: timely planting: (i) *Early planting helps crops escape insect pest attacks compared to late planting*, (ii) *Timely harvesting: some storage pests begin their attacks while crops are still in the field. Avoiding delays in harvesting reduces the risk of pest damage*, (iii) *Proper tillage: field cultivation exposes soil-borne pests to sunlight and natural predators, such as birds, which feed on them*, (iv) *Closed season: this practice involves skipping the cultivation of susceptible crops during specific seasons. During this period, crop residues are collected and burned to destroy pest eggs before the next planting season*, and (v) *Trap crops: are grown either before or alongside the main crop to attract pests. Once the pests are concentrated on the trap crop, they can be destroyed using other methods, such as insecticides*. The students' correct responses in this question indicate a solid mastery of the subject matter. Extract 4.2 illustrates correct responses to the question.

6. (a) Analyse the effects of each of the following insect pests in crop production:

(i) Nematodes

The Nematode has the effect in crop production
that it damage the crop roots and tubers
causing wilting of the plants to death

(ii) Sucking pests

- Sucking pests such as whiteflies has effect in crop production as they suck liquid in the crop plant leaves.
- Causes retarded growth of the crop causing the crop to be deprived from the food.

(b) How are the following cultural pest control methods used in crop production?

(i) Timely planting of crops

Timely planting of crop help the crop to be prevented from pest attack this by planting the crops before the pest attack in the field. For example Maize when planted it is prevented from be affected by Maize stalk borers in the field.

(ii) Timely harvesting of crops

Timely harvesting will help the crop to be protected from the pest because the crop will be early removed in the field before the build up of pests. For example of pests such as mice, rats attack the crops when it is late to be harvested.

(iii) Proper tillage of land

The proper tillage of land will help to expose the different soil borne pests such as Nematodes, thus being scotched by the sun or being eaten by birds or other predator thus reduces pests in the field.

(iv) Closing season

Closing season : This is the period when the susceptible crop is not grown so as to control certain type of pest in the field. This will cause death of the specific pest due to absence of a certain crop in the field.

(v) Growing trap crops

Growing trap crops : This involves growing of different border strips or crops that divert the pest from the main crop for least invasive the trap crop is advised to be planted before main crops.

Extract 4.2: A sample of correct responses to Question 6.

Extract 4.2 is a sample of the responses from the student who provided correct responses to all parts of the question. The student demonstrated good understanding of the effects of crop pests and their control.

2.2.5 Question 7: Principles of Crop Production

The question assessed the students' understanding of the methods of controlling crop pests. Students were asked:

- (a) *Examine five factors which influence effectiveness of pesticides in controlling crop pests.*
- (b) *Briefly explain how integrated pest management method is practiced in controlling crop pests.*

The question was attempted by 29,010 students (100%) out of which, 26,604 students (91.71%) scored between 0.0 and 2.5 marks, 1,909 students (6.58%) scored between 3.0 and 6.0 marks, and 497 students (1.71%) scored between 6.5 and 10.0 marks. Figure 4 illustrates the distribution of students' scores for this question.

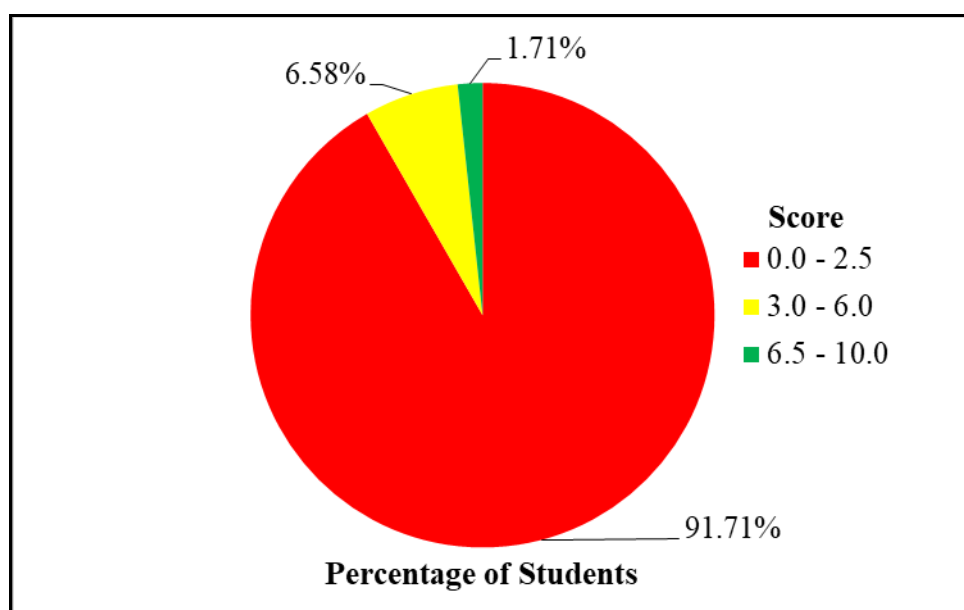


Figure 4: *Students' Performance on Question 7*

Figure 4 illustrates that the majority of the students (91.71%) scored between 0.0 and 2.5 marks, while only 8.29 per cent scored between 3.0

and 10.0 marks. This indicates an overall weak performance in the question.

The results of the assessment reveal that 91.71 per cent of the students demonstrated poor performance. Most of them struggled to address both parts of the question correctly.

In part (a), majority of students failed to examine the factors that influence the effectiveness of pesticides in controlling crop pests. Instead of identifying relevant factors, many provided unrelated responses such as the effects of pesticides for example *causing pollution, environmental harm, poisoning, and death to animals*. Additionally, some students confused the question by listing factors affecting agriculture such as *climatic conditions, biological factors, topographical factors, and institutional factors* or *factors of production such as land, labor, capital, and entrepreneurship*. These responses indicate that students misunderstood the focus of the question, which required analysing specific conditions or practices that enhance effectiveness of pesticide use.

In part (b), they failed to explain how Integrated Pest Management (IPM) is practiced in controlling pests. Many failed to address the specifics of IPM, instead listing general pest control methods, such as *chemical, biological, cultural, and mechanical control*. While these are components of IPM, the question required an explanation of how these methods are integrated into a comprehensive pest management strategy.

Some students provided examples of cultural pest control methods, such as *using resistant crop varieties, early planting, trap cropping, and practicing closed seasons*. While these responses were somewhat relevant, they did not demonstrate an understanding of the broader principles and practices of IPM. The correct responses could be using cultural, biological, mechanical, and chemical methods together in a complementary manner. Many students did not understand the requirements of the question hence provided incorrect responses. Extract 5.1 is an example of incorrect responses to the question.

7. (a) Examine five factors which influence effectiveness of pesticides in controlling crop pests.

(i) ~~It~~ is fast compare to other methods

(ii) ~~It is used~~ It use chemical in controlling crop pests.

(iii) It kills insect pests which they attack
crop.

(iv) Chemical pesticides in controlling crop pests
It more available for the farmer to
use it for that person who know to use it.

(v) It is more predictable used by farmers
in controlling crop pests.

(b) Briefly explain how integrated pest management method is practiced in
controlling crop pests.

The Integrated pest Management the method.
This is the good controlling crop pests by
using integrated pest. By this way they
use Application amount of manure, because
some manure which are move from Industries
can kill some pest.

Extract 5.1: A sample of incorrect responses to Question 7.

Extract 5.1 presents responses from a student who responded incorrectly to all parts of the question, indicating a poor understanding of pest control methods.

In addition, 6.58 per cent of the students demonstrated average performance on this question. Most of them correctly explained how Integrated Pest Management (IPM) is practiced in part (b). However, in part (a), while some students mentioned factors influencing the effectiveness of pesticides, they failed to provide detailed explanations. Others were unable to identify or elaborate on all the relevant factors,

which limited their ability to score higher marks. Consequently, their responses resulted in average performance.

On the other hand, 1.71 per cent of the students performed well on this question. Most of them provided correct responses to nearly all parts of the question. In part (a), the students successfully examined the factors influencing the effectiveness of pesticides in controlling crop pests. Examples of their correct responses include proper pesticide concentration during application, timing of application, weather conditions at the time of application, the persistence of pesticides, pest resistance, and the use of expired or outdated pesticides.

In part (b), the students provided concise and accurate explanations of how Integrated Pest Management (IPM) is practiced in controlling crop pests. Examples of their correct responses include defining IPM as the combination of methods for pest control, such as chemical, physical/mechanical, biological, and cultural approaches. They highlighted that IPM is the most effective pest control method, environmentally friendly, and cost-efficient, particularly for resource-poor farmers.

These accurate responses indicate a solid understanding of the methods for pest control. Extract 5.2 showcases a sample of correct responses to this question.

7. (a) Examine five factors which influence effectiveness of pesticides in controlling crop pests.
(i) Concentration factor; correct concentration of pesticide, ^{influence} not effectiveness of killing
(ii) Time of application. This is an important factor when the pesticides are applied through out the stage of development of a pest

- (iii) Weather conditions: This influences effectiveness of pesticides when applied with no likelihood rainfall since rainfall take away pesticides.
- (iv) Persistence: To ensure persistence the pesticide should remain effective long enough so as to achieve all the desired effects.

- (v) Pest resistance: This influences effectiveness of some pest to have developed resistance against certain type of pesticide.

- (b) Briefly explain how integrated pest management method is practiced in controlling crop pests.

In practicing pest management method you have to start with the least invasive and often most effective means. There include prevention or cultural practices, mechanical or physical control method and lastly we naturally occurring biological method that is the use of native predators. There after include non-native predators and finally use chemical control method sparingly as the last possible alternative.

When using chemical control method start with the natural occurring materials such as extracts from wood ash, and wild tobacco. Then go for biodegradable organic pesticides made from plants and only toxic to pesticide, for example pyrethrin from pyrethrum.

Extract 5.2: A sample of correct responses to Question 7.

Extract 5.2 is a sample of the responses from a student who provided correct responses to all parts of the question, demonstrating good understanding of pest control methods.

2.2.6 Question 8: Introduction to Crop Production

The question tested the students' understanding of cropping and farming systems. The students were asked:

- (a) *Outline five advantages that farmers get from growing sorghum and cowpeas in the same field.*
- (b) *Shifting cultivation is a farming system practiced in Tanzania. Highlight five major features that distinguish it from other systems.*

The question was attempted by 29,007 students (99.98%), out of which 19,338 students (66.67%) scored between 0.0 and 2.5 marks, 8,234 students (28.38%) scored between 3.0 and 6.0 marks, and 1,435 students (4.95%) scored between 6.5 and 10.0 marks. Figure 5 illustrates the distribution of students' scores for this question.

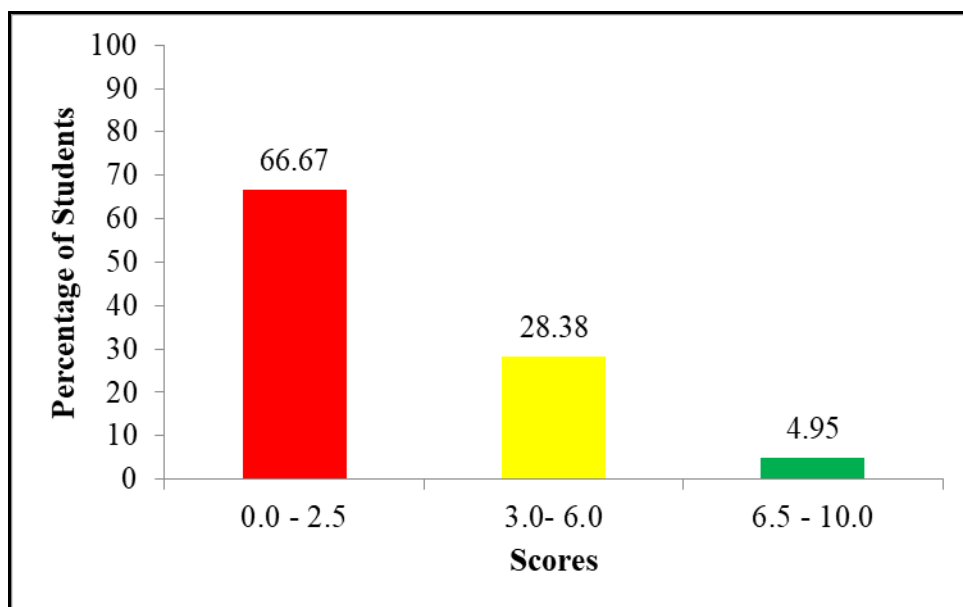


Figure 5: *Students' Performance on Question 8*

Figure 5 shows that 33.33 per cent of the students scored between 3.0 and 10.0 marks, while 66.67 per cent scored between 0.0 and 2.5 marks, indicating an overall average performance.

The performance statistics reveal that 4.95 per cent of the students performed well on the question by providing correct responses to most parts of the question.

In part (a), the students successfully outlined the advantages of growing sorghum and cowpeas in the same field. Their correct responses included: *the roots of both crops utilize the soil profile more efficiently than when only one crop is grown, cowpea, being a leguminous crop, fixes*

atmospheric nitrogen into nitrates, enhancing soil fertility, the cropping system helps control soil erosion, it provides a means of diversification for farmers, total yield per unit area is higher due to improved soil fertility, it enables better utilization of available resources, it reduces the incidence of insect pests, diseases, and weeds, it improves soil structure and water-holding capacity and it conserves soil moisture. These accurate responses demonstrate that the students were knowledgeable about inter-planting as the cropping system.

Similarly, in part (b), the students highlighted key features that distinguish shifting cultivation from other agricultural systems. The correct responses included: *it requires minimal capital investment, it is practiced in sparsely populated areas, it is carried out on small plots of land, simple tools are used, advanced knowledge is not necessary to practice this system, peasants typically grow annual crops and the system relies on family labor.* These correct responses reflect the students' strong understanding of the shifting cultivation system. Extract 6.1 provides an example of correct responses to the question.

8. (a) Outline five advantages that farmers get from growing sorghum and cowpeas in the same field.

(i) It reduce weeds, the weed will be reduced since there is mixed cropping in the farm.

(ii) It prevent soil erosion, since the root crops have attached to the soil.

(iii) It increase soil fertility, since the remain plant make the soil to increase the fertilizer.

(iv) It is means of diversification, where by when one a plant die the another plant produce.

(v) It lead to increase of food, where by bothe crop does well that lead the food to be many.

(b) Shifting cultivation is a farming system practiced in Tanzania. Highlight five major features that distinguish it from other systems.

(i) the crop produced are like rice, cassava, maize
..... ~~It~~ plant and beans.

(ii) It require low technology, since it is used the simple
..... tools.

(iii) It is cheap to practise, since it involve shifting
..... from area to area.

(iv) It require the use of simple tools, the tools such
..... as hand hoe.

(v) It is practised in low population area, where by there
..... is no alot of people.

Extract 6.1: A sample of correct responses to Question 8.

Extract 6.1 showcase a sample of the responses from a student who provided correct responses to all parts of the question. The student demonstrated good understanding of the cropping and farming systems.

Furthermore, the statistics indicate that 28.38 per cent of the students achieved an average performance. In part (a), many students provided partial correct responses regarding the advantages of growing cowpeas and sorghum together. While some advantages were correctly mentioned, their responses lacked depth and comprehensiveness.

In part (b), the majority of the students were unable to provide a complete and detailed explanation of all the features that distinguish the shifting cultivation system. This lack of thoroughness in their responses contributed to their average scores.

However, 66.67 per cent of the students demonstrated weak performance, providing incorrect responses to almost all parts of the question. In part (a),

the students failed to outline the advantages that farmers derive from growing sorghum and cowpeas together in the same field. Instead, many offered incorrect responses, such as the general economic benefits of sorghum and cowpeas, including: *they help people make alcohol, they are used as food, they are sources of foreign currency, they provide employment, and they generate income for farmers*. Others mentioned examples of crops that can be inter-planted, such as *maize with pigeon peas, cotton with green gram, pigeon peas with sunflower, and maize with common beans*. Some students gave incorrect responses, such as: *it may need proper spacing, it may require sufficient sunlight, it may reduce soil fertility, and it may need high nutrient levels*. These responses reflect a lack of understanding of the inter-planting system and its specific benefits.

Similarly, in part (b), the students failed to highlight the major features that distinguish shifting cultivation from other systems. Instead, many listed disadvantages of shifting cultivation, such as: *it causes soil erosion, it leads to the destruction of water sources, it results in the loss of soil fertility, it is not economical, and it cannot be practiced in Tanzania due to population growth*. Others mistakenly provided criteria for classifying cropping systems, such as: *the nature of the crops, the capacity of the plant to use nutrients, the growth habits of the plant, and the root characteristics of the plant*. These responses indicate poor understanding of the defining features of shifting cultivation. Extract 6.2 is an example of incorrect responses to the question.

8.	(a)	Outline five advantages that farmers get from growing sorghum and cowpeas in the same field.
	(i)	Source of income: people can selling and buying commodities in the nation and ex can get this income

- (ii) Source of market: So the availability of item, it can get the source of trade and market in the nation.
- (iii) Source of foreign exchange: people can get exchange during selling and buying item in the market.
- (iv) Source of food: When people can buy goods it can get food supply at home.
- (v) Source of commodities: Cultivation in the farmer can provide this goods in the trade.

(b) Shifting cultivation is a farming system practiced in Tanzania. Highlight five major features that distinguish it from other systems.

- (i) Shifting cultivation Used for cultivate for any one area while other systems is not.
- (ii) Shifting cultivation It can provide good land preparation while other systems ~~is~~ is not provide land preparation.
- (iii) Shifting cultivated is used to shift one area to another area while other system is not shifted one area to another area.
- (iv) Shifting cultivation it require the land have fertile while other system is not use the system.
- (v) Shifting cultivation it provide high production of crops while other system it provide crops in the small ration than shifting cultivation.

Extract 6.2: A sample of incorrect responses to Question 8.

Extract 6.2 is a sample of the responses from a student who provided incorrect responses to all parts of the question, demonstrating poor understanding of the subject matter.

2.2.7 Question 9: Mechanisation in Agriculture

The question tested the students' knowledge of sources of farm power. The question was as follows:

- (a) *Identify five advantages of using animals as a source of farm power as compared to tractor power.*
- (b) *Identify five factors to be considered when selecting oxen for training to perform farm activities.*

The question was attempted by all 29,010 students (100%). The performance statistics indicate that 19,980 students (68.87%) scored between 0.0 and 2.5 marks, 7,062 students (24.35%) scored between 3.0 and 6.0 marks, and 1,968 students (6.78%) scored between 6.5 and 10.0 marks. Figure 6 illustrates the distribution of students' scores for this question.

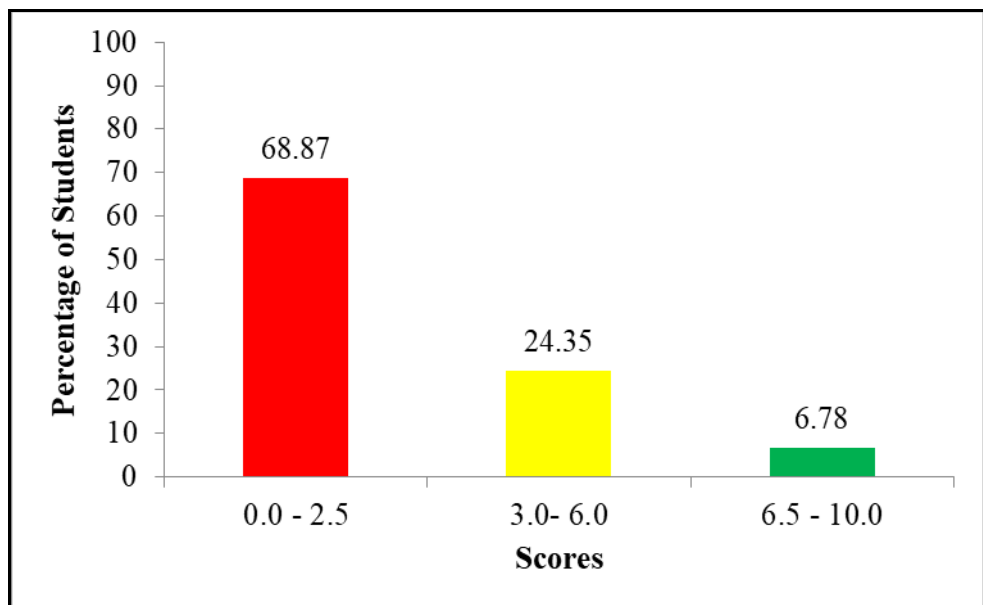


Figure 6: *Students' Performance on Question 9*

According to Figure 6, 31.13 per cent of the students scored between 3.0 and 10.0 marks, while 68.87 per cent scored between 0.0 and 2.5 marks, indicating an overall average performance.

The data reveal that 6.78 per cent of the students performed well in this question. Most of them provided correct responses to almost all parts of the question. In part (a), the students successfully identified the advantages of using animals as a source of farm power compared to tractors. Correct

responses included: *animals require a lower initial investment, oxen do not need fuel and lubricants, only water and grass, ox equipment is cheaper than tractor spare parts, most farmers have small farms, making oxen more suitable, the use of oxen and implements is simpler than using a tractor and, operating oxen requires less technical skill.* These correct responses indicate a good understanding of the advantages of using animal power over tractors.

In part (b), the students correctly identified factors to consider when selecting oxen for training in farm activities. Correct responses included: *the animals should be healthy and strong, they should be at the age of 2–3 years for local cattle (1.5–2 years for exotic cattle), they should be castrated male animals, the oxen should have a hump to support the yoke, they should have a calm temperament.*

These correct responses demonstrate that the students possessed adequate knowledge about draught animals. Extract 7.1 provides an example of correct responses to the question.

9. (a) Identify five advantages of using animals as a source of farm power as compared to tractor power.

(i) *Animals they require less skills, while tractor power require high skills.*

(ii) *Animals they are not require for fuel while Tractor power they require fuel*

(iii) *Animal power involve the low technology, while Tractor power involve the high technology.*

- (iv) Animal power does not require high initial cost while Tractor power they require the high initial cost.
- (v) Animal power is cheap source of farm power while the Tractor power is expensive source of farm power.
- (b) Identify five factors to be considered when selecting oxen for training to perform farm activities.
- (i) Oxen should have a hump where the yoke harness can rest.
- (ii) Oxen should be at the age of 2 y to 3 three years.
- (iii) Oxen should be healthy and strong.
- (iv) Oxen should be steer (castrated male animal).
- (v) Oxen should have short horns that help against destruction and injuries.

Extract 7.1: A sample of correct responses to Question 9.

Extract 7.1 is a sample of the responses from the student who provided correct responses to all parts of the question demonstrating good understanding of the sources of farm power.

Additionally, 24.35 per cent of the students demonstrated average performance. In both parts of the question, most students either provided partially correct responses or failed to address all the points required.

In part (a), some students offered incomplete responses regarding the advantages of using animals as a source of farm power compared to tractor power. Others mentioned only a few advantages and did not exhaust all the points demanded.

In part (b), a considerable number of students provided partially correct responses on the factors to consider when selecting oxen for training to perform farm activities. However, similar to part (a), many students failed to include all the required points. This partial understanding and inability to provide comprehensive responses contributed to the average scores achieved by these students.

Contrarily, 68.87 per cent of the students demonstrated poor performance in this question. The majority provided incorrect responses to almost all parts of the question. In part (a), the students were unable to identify the advantages of using animals as a source of farm power compared to tractors. Some mistakenly provided the importance of farm mechanization in agriculture, such as *expanding production, facilitating transportation, ensuring timeliness of farm operations, increasing efficiency, reducing and relieving the farmer of manual labor*. Others offered the benefits of keeping livestock, including providing *food, manure, transport, income, and raw materials for industries*. These responses indicate a lack of understanding of the specific advantages of using animals as a source of farm power.

Similarly, in part (b), the students failed to identify the factors to consider when selecting oxen for training to perform farm activities. Instead, many listed the types of farm operations that can be performed by draught animals, such as *ploughing, harrowing, ridging, planting, weeding, and transportation*. Others incorrectly named sources of farm power, including *human power, animal power, wind power, water power, solar power, biogas, and geothermal power*. A few provided the procedures for training oxen, such as *assigning names to the animals, using commanding words, accustoming the animals to walking in pairs, and familiarizing them with a yoke*. These responses clearly demonstrate that the students lacked sufficient knowledge and competence regarding draught animals. Extract 7.2 provides an example of incorrect responses to the question.

9. (a) Identify five advantages of using animals as a source of farm power as compared to tractor power.

- (i) Animal power has higher output like or compared to tractor power than human or man power.
- (ii) Animal power help to perform the farm works faster than human power with high efficiency.
- (iii) Animal power help to release or reduce the use of human power in performing farm activities.
- (iv) The use of animal power also help the land to maintain its fertility due to the organic manure produced by animals.
- (v) Animal power helps the farmer because animal can perform farm activities for a long period of time without getting tired than human power.

(b) Identify five factors to be considered when selecting oxen for training to perform farm activities.

- (i) Capital of the farmer that he or she want to select the oxen for training to perform farm activities.
- (ii) Type of oxen you want to select and type of breed for a specific oxen for training to perform farm activities.
- (iii) ~~Type of~~ Number of oxen you want to select for training to perform farm activities.
- (iv) Space available or Area available for domesticating or keeping those oxen for training to perform farm activities.
- (v) Environmental factor of the place to you want to kept or domesticate your oxen for training to perform farm activities.

Extract 7.2: A sample of incorrect responses to Question 9.

Extract 7.2. is a sample of the responses from a student who provided incorrect responses to all parts of the question demonstrating poor understanding of sources of farm power.

2.3 Section C: Essay Question

2.3.1 Question 10: Introduction to Livestock Production

The question tested students' knowledge of the importance of keeping livestock. The question was:

In six points, explain the importance of livestock.

The question was attempted by 29,008 students (99.99%). Among them, 5,863 students (20.21%) scored between 0.0 and 4.0 marks, 15,947 students (54.98%) scored between 4.5 and 9.5 marks, and 7,198 students (24.81%) scored between 10.0 and 15.0 marks. Figure 7 illustrates the distribution of students' scores for this question.

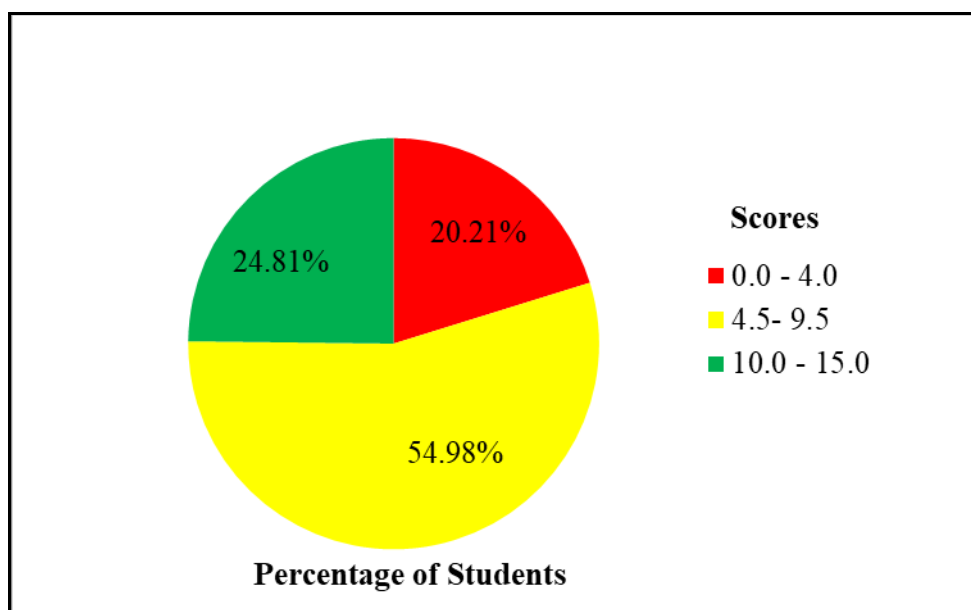


Figure 7: *Students' Performance on Question 10*

According to Figure 7, 79.79 per cent of the students scored between 4.5 and 15.0 marks, while 20.21 per cent scored between 0.0 and 4.0 marks, indicating generally good performance.

The statistics further reveal that 24.81 per cent of the students performed exceptionally well in this question. The majority successfully explained the importance of livestock, providing correct responses such as: *source of food, provides raw materials for industries, source of livelihood and capital for farmers, employment opportunities in the livestock sector,*

source of manure for soil fertility improvement, fuel source, social value as livestock often symbolizes wealth and status, companion and security in some communities, utilization of industrial by-products and farm waste, reducing waste, and source of foreign currency through the export of livestock products. These responses demonstrate that the students had a solid understanding of the importance of keeping livestock.

Additionally, the students demonstrated commendable essay-writing skills by effectively organizing their essays with a clear introduction, a well-structured main body, and a coherent conclusion, which contributed to their ability to achieve high marks. Extract 8.1 provides a sample of well-written responses.

10. In six points, explain the importance of livestock.

Livestock; is a brood reared by human being for economic and nutritional importance. Examples of livestock are cattle, poultry, pig, sheep which they give or provide products like Milk, Meat, eggs and land from pig. These are the essential products they give out.

The following are the importance of livestock to the people;

Livestock is the source of food; Since it gives us products which are essential for our bodies. Example Meat and Milk produced by cattle it gives protein to our bodies so it is very important to have livestock.

Livestock is the source of employment; People are employed skilled and unskilled labour are employed in ranches and even in industries. Example in dairy industries due to the presence of livestock such as cattle.

Livestock is the source of raw materials for some industries. Example of raw materials is Animal skin and hide used in textile and leather industries in production of clothes and Wool also in production of clothes so livestock is very very important in industries.

Livestock is the source of income; Since it is sold in market so as the people can get profit. Example selling of products such as meat in butchery. It gives income since much profit is gained there so it is very important.

Livestock is the source of foreign exchange; Since the goods produced by the livestock are used as an exchange in different areas. Example Wool produced by sheep can be exchanged by Tanzanians and people from Kenya so livestock caused foreign exchange.

Livestock is the source of farm power. It help the humans to not use their power in the farm but to use animal power this is done by oxen like Cattles by the use of harness which can be collar or yoke harness to perform the farm work this help the farmers with small plot since it is cheape and easy to practice. So livestock is very important for the dally life of human being. has both nutritional and economic important to its advice to take or part by giving them vaccines to prevent some diseases. livestock also has some values which are social and cultural example it is slaughtered to welcome guests, also it's used as bride price.

Extract 8.1: A sample of correct responses to Question 10.

Extract 8.1 is a sample of a response from a student who provided correct responses to all parts of the question, showcasing a thorough understanding of the importance of keeping livestock. The student also demonstrated strong essay-writing skills.

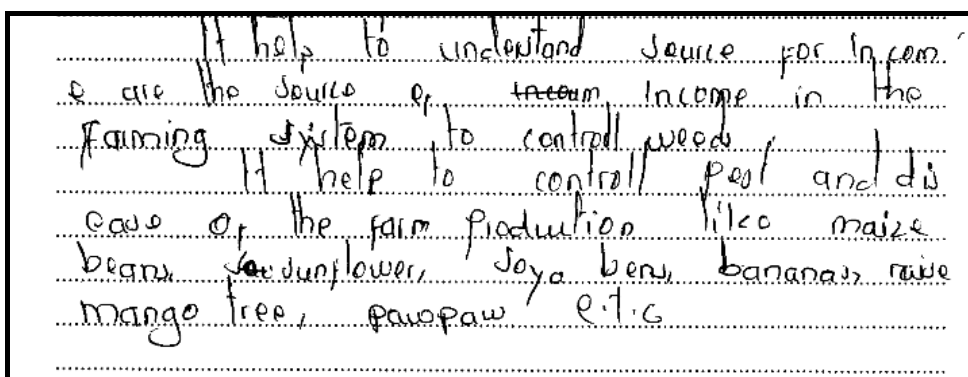
Furthermore, the statistics indicate that 54.98 per cent of the students exhibited average performance. While most of the students correctly identified the importance of livestock, they failed to provide comprehensive explanations for their points. Additionally, some students did not cover all the required points. However, the students demonstrated good essay organization, effectively structuring their responses with an introduction, main body, and conclusion. This performance suggests that the students had a partial understanding of the importance of keeping livestock.

Nevertheless, 20.21 per cent of the students demonstrated weak performance. The majority failed to explain the importance of livestock. Instead, some provided unrelated responses, such as factors to consider when selecting a suitable livestock farming system, including *capital, the type of livestock a farmer intends to raise, breed type, number of livestock, available space, and environmental factors*. Others listed types of livestock, such as *cows, goats, chickens, pigs, and sheep*, rather than addressing the question.

A few students gave entirely incorrect responses, such as stating that livestock are categorized into *indigenous* and *exotic breeds*, noting that both rural and urban areas practice livestock keeping, mentioning that livestock require relatively small areas, involve low feeding costs, or that some livestock require simple shelters. These responses indicate a lack of understanding of the concept. Additionally, most of these students demonstrated poor essay-writing skills, as their responses lacked proper organization into an introduction, main body, and conclusion. Extract 8.2 illustrates an example of incorrect responses.

10. In six points, explain the importance of livestock.

Livestock are the type of agriculture
In the livestock production example, mixed
farming, crop production, crop rotation and
soil science. The following are the importance
of livestock in Tanzania. There are:
1. It help to knowledge farm activities
because farm activities are the source of ma-
terial in the livestock keeping eg: Bananas,
maize, beans, mango, soya bean, etc.
2. It help to understand soil erosion
Are the source of income used to produce good
service in agriculture production like meat,
milk, egg, etc.
3. It help to understand soil fertility
Because the fertility in the farm business
is the main product.



Extract 8.2: A sample of incorrect responses to Question 10.

Extract 8.2 is a sample response from a student who provided incorrect responses to the entire question, demonstrating a poor understanding of the subject matter. The student also exhibited poor essay-writing skills, failing to organise the essay into three parts: introduction, main body, and conclusion.

3.0 ANALYSIS OF STUDENTS' PERFORMANCE ON EACH TOPIC

This section focuses on analyzing students' performance in each topic. A total of nine (9) topics were assessed in the 2024 national assessment.

The topics in which students demonstrated good performance included *Factors of Production*, *Basics of Farm Management*, *Introduction to Soil Science*, *Crop Husbandry*, *Introduction to Agriculture*, *Introduction to Livestock Production*, *Principles of Crop Production*, *Mechanization in Agriculture*, and *Introduction to Crop Production*. These topics were assessed in the first multiple-choice question, which recorded a high performance rate of 82.79 per cent and 67.98 per cent for *Introduction to Livestock Production*.

The topics with average performance were *Introduction to Crop Production* (33.33%) and *Mechanization in Agriculture* (31.13%). However, the topics with weak performance included *Basics of Farm Management* (15.42%), *Crop Husbandry* (11.16%), *Introduction to Soil Science* (10.40%), and *Principles of Crop Production* (7.02%). The students' performance on each topic is summarised in the Appendix.

4.0 CONCLUSION AND RECOMMENDATIONS

This section provides a summary of the analysis and offers suggestions aimed at improving the teaching and learning process to enhance students' performance in future assessments.

4.1 Conclusion

Results of the 2024 assessment indicate that 34.50 per cent of students passed, reflecting an overall average performance. The data further reveal that the majority of students (89.05%) scored low grades (D and F), with only a small proportion (10.95%) achieving higher grades (A, B, and C).

An analysis of students' responses identified several factors contributing to the low performance among most students. These included inadequate understanding of concepts, a complete lack of understanding of certain concepts, and misconceptions. Additionally, a poor command of the English language was observed as a persistent issue affecting performance across various areas.

Inadequate understanding of the concepts was a result of the students to grasp only superficial aspects of a topic without fully understanding its depth or applications. This limited their ability to tackle questions, leading to low scores.

Moreover, lack of understanding of the concept caused students fail to comprehend the fundamental principles of a topic. This suggests the students had poor preparation for the assessment. Likewise, misconceptions resulted from incorrect ideas about a topic that led to students answering questions incorrectly.

Additionally, poor command of English language caused students not to understand fully the questions being asked. This resulted into misinterpretation of what is being required, causing them to answer incorrectly or fail to address the question's key points. Furthermore, students lacked the language skills needed to articulate their knowledge effectively. This led to vague, incomplete, or poorly structured answers that did not fully convey their understanding.

On the other hand, the students who scored high marks demonstrated good understanding of the concepts. They were able to answer questions, and make connections between ideas, leading to higher-quality responses.

4.2 Recommendations

To improve performance in the topics with low scores, the following recommendations are proposed:

- (a) Teachers should employ more effective and interactive teaching methods, such as
 - (i) Group teaching
Students should be divided into groups and assigned tasks that involve analyzing the impacts of risks and uncertainties on agricultural production, particularly in the topic of *Basics of Farm Management*.
 - (ii) Practical teaching
Students should engage in hands-on activities such as growing different crops as part of the learning process in the *Crop Husbandry* topic.
 - (iii) Experiments
Students should conduct lab or field experiments to identify different soil structures, which will enhance their understanding in the topic of *Introduction to Soil Science*.
 - (iv) Field Visits
Students should be facilitated to visit nearby farms to observe pests and their effects on crops, especially in the *Principles of Crop Production* topic, allowing for real-world learning.
- (b) Administer Diagnostic Assessments
Teachers should regularly conduct diagnostic assessments to identify students' learning gaps early and address them before they impact overall performance.
- (c) Enhance English Language Proficiency
Teachers should enable students to improve their English language proficiency through various methods, such as language workshops, peer tutoring, and using English in daily academic discussions.
- (d) Use of Multimedia and Technology
Incorporate multimedia tools and educational technology to engage students more effectively and help them visualize complex concepts in agriculture.

(e) Encourage Active Learning

Teachers should encourage active learning techniques, such as debates, presentations, and discussions, to help students internalize knowledge and improve critical thinking skills.

By implementing these strategies, students can improve their understanding of the Agriculture subject and ultimately achieve better performance in their assessments.

Students Performance in Various Topics in FTNA 2024

No.	Topic	Question Number	Percentage of Students who Scored an Average of 30% or Above	Comments
1.	Factors of Production, Basics of Farm Management, Introduction to Soil Science, Crop Husbandry, Introduction to Agriculture, Introduction to Livestock Production, Principles of Crop Production, Mechanisation in Agriculture, and Introduction to Crop Production	1	82.79	Good
2.	Introduction to Livestock Production	2.10	67.98	Good
3.	Introduction to Crop Production	8	33.33	Average
4.	Mechanisation in Agriculture	9	31.13	Average
5.	Basics of Farm Management	4	15.42	Weak
6.	Crop Husbandry	5	11.16	Weak
7.	Introduction to Soil Science	3	10.40	Weak
8.	Principles of Crop Production	6.7	7.02	Weak

