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

STUDENT'S ITEM RESPONSE ANALYSIS REPORT ON THE FORM TWO NATIONAL ASSESSMENT (FTNA) 2020

GEOGRAPHY

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013 GEOGRAPHY

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FOREWORD

The National Examinations Council of Tanzania (NECTA) has prepared a report on the Students Item Response Analysis for the Form Two National Assessment (FTNA) of 2020 for a Geography subject. The aim of this report is to provide feedback to different education stakeholders including: students, teachers, parents, policy makers and the public on the performance of students, it also shows the extent to which the subject instructional goals and objectives were met.

The Form Two National Assessment is a formative evaluation which among other things assesses the effectiveness and efficiency of the education system. Generally, students' responses to the assessment questions form a strong indicator of what the education system was able or unable to provide to students in their two years of studies.

The report highlights the factors, which contributed to student's failure to attempt some of the questions correctly. In this report, the analysis of each question has been done by using statistical figures and graphs. A good performance was determined by the student' ability to understand the demands of the questions. Others were having adequate knowledge of the subject matter, possessing computing skills, good mastery of English language and essay writing skills. Students who scored low marks revealed contrary attributes.

The National Examinations Council of Tanzania belief that, this report shall serve as a basis for enabling all educational stakeholders to take proper measures in order to improve students' performance in this subject

Finally, the National Examinations Council of Tanzania is grateful to all Examination Officers and other stakeholders who provided valuable assistance in the preparation of this report.

Dr. Charles E. Msonde

EXECUTIVE SECRETARY

1.0 INTRODUCTION

This report is based on the analysis of the item responses for students who sat for the 013 Geography assessment in 2020 FTNA. The analysis mainly addresses the areas in which the students faced difficulties and those in which they performed well when answering the assessment items. Finally, it provides a conclusion, recommendation and an attachment which shows the percentage of students' performance in each question and topic wise.

In 2020, a total of 646,195 students were registered for the Geography subject, of which 601,233 (93%) sat for the assessment out of which 299,993 (49.9%) passed while, 301,240 (50.1%) failed. Generally, the performance in 2020 decreased by 14.06 percent compared to 2019 whereby 63.99 percent of the students passed and 36.01 percent failed.

The assessment paper had three sections: A, B and C with ten (10) questions. Sections A and B contained compulsory questions. Section A consisted of three questions (1, 2 and 3). Question 1 carried 10 marks, question 2 carried 5 marks and question 3 carried 10 marks. The total marks for section A were 25. Section B consisted of 3 questions; question 4, 5 and 6 each carried 15 marks. The total marks for section B were 45. Section C had 4 questions and the students were required to answer any two. Each question carried 15 marks, making a total of 30 marks.

In this report, the students' performance in each question was considered *good*, *average* or *weak* if the percentage of students who scored at least 30 out of 100 percent is 65 – 100, 30 – 64 or 0 – 29 respectively.

In presenting the data; red, yellow and green colours are used in both figures and the appendix to represent good, average and weak performance respectively. Finally the report gives the conclusion and recommendations that will help students, teachers and the government to improve the performance of the students in future Geography assessments.

2.0 ANALYSIS OF STUDENTS' PERFORMANCE IN EACH QUESTION.

2.1 SECTION A: OBJECTIVE QUESTIONS

There were three compulsory questions in this section. Question 1 consisted of 10 multiple-choice items carrying 10 marks while question 2 consisted of 5 matching items which carried a total of 5 marks. Question 3 had 10 true and false items, each carrying 1 mark and thus making a total of 10 marks.

2.1.1 Question 1: Multiple Choice Items

The multiple choice items question was compulsory, and it aimed at testing the students' knowledge in the topics of *Weather, The Solar System, Map Work and Major Features of the Earth's Surface,* from Form One Syllabus. The question had ten (10) multiple-choice items. The students were required to choose the correct answer among the four alternatives given for each item

601,250 students (100%) attempted this question where by 12.3 percent scored from 7 to 10 marks, 66 percent scored from 3 to 6 marks and 21.7 percent scored from 0 to 2 marks. The general performance in this question was good since 78.3 percent of the students scored 3 marks and above. This performance indicates that the students had good knowledge on the assessed topics.

In item (i) students were required to identify the causes of wind on the Earth's surface. Those who chose the correct answer 'C'*Temperature difference on the Earth's surface* had knowledge on the concept of weather specifically on how temperature influences pressure and how pressure differences influence wind direction. Moreover, these students were able to identify elements of weather and their impacts on the Earth's surface. The

students who chose alternative 'A' *The speed of the Earth around the sun,* related the Earth's rotation and the speed of the Earth around the sun whereby earth rotation can cause planetary winds and ocean currents on the Earth's surface. The students who opted for 'B*' The revolution of the moon around the earth* lacked knowledge on the concept of weather in relation to wind movement. Furthermore, those who chose 'D' *The movement of the overhead Sun* lacked knowledge on the concept of weather as they thought that the apparent movement of the overhead Sun northward and southwards cause wind movement.

Item (ii) demanded the students to identify the event which is **not** affected by Earth's rotation. The students who opted for the correct answer 'D' *changes in seasons* had knowledge on the effect of Earth's revolution and **not** rotation. Earth's rotation means *the spinning of a body on its axis*. In reality the effects of the Earth's rotation are *Changes of day and night, Direction of the prevailing of winds, movement of ocean currents* etc. The students who opted for distractor 'A' *Movement of the ocean currents*, 'B' *Direction of prevailing winds* and 'C' *Changes of day and night,* lacked knowledge on the concepts of Earth's rotation, since all the three alternatives describe the effects of the Earth's rotation.

Item (iii) required the students to identify the rate at which temperature decreases with increase in altitude. The students who chose the correct answer 'B' *0.6^0* c *for every 100 meters* were knowledgeable on the factors affecting temperature including *altitude* as; *Altitud*e *is the height above the sea level whereby temperature decreases with increasing altitude at the rate of 0.6^0 c for every 100 meters*. The students who opted for incorrect answers 'A' *1.6^0 c for every 100 meters*, 'C' *6^0 c for every 100 meters* and 'D' *16^0 c for every 100 meters* failed to recognize that altitude is the height above the sea level, and temperature deceases with increasing in altitude at the rate of 0.6^0 C for every 100 meters.

In item (iv), the students were required to identify the place which would experience sunrise earliest on any day. Those who chose the correct answer 'B' *Tanga (5^0 S, 39^0 E)* had enough knowledge on the concept of the importance of Parallels and Meridians, specifically on calculating local time when given two Longitudes and Time of one of the Longitudes. The students who chose 'A' *Kasese ($10^{0,}$ 300 E),* 'C' *Kitale (1^0 N, 35^0 E),* lacked knowledge of Longitude and Time, especially on recording differences in time from different time zones.

Item (v) required the students to identify the causes of the seasons of the year from among the alternatives given. The students who chose the correct answer 'C' *Revolution of the Earth* revealed that they were aware of the results of Earth's revolution around the Sun whereas season is one among them. The students who opted for alternative 'A' *Rotation of the Earth* lacked relevant knowledge of the Earth's movement that causes the seasons of the year. Moreover, the students who opted for 'B' *lunar eclipse* and 'D' *solar eclipse* lacked knowledge on the other geographical event, which takes place on the Earth's surface.

Item (vi) required the students to calculate and identify the extent to which 4cm representing 18 km on the Earth's ground can represent a fraction scale from the alternatives given. Those who chose correct answer 'A' *1:450,000* had skills on scale conversion, hence they were able to calculate and identify the correct representative fraction. The students who opted for alternative 'B' *2:900,000*, 'C' *1:900,000* and 'D' *1:800,000* lacked skills on scale conventions and calculations.

In item (vii), students were required to identify when the Summer Solstice in Northern Hemisphere occurs. The students who chose the correct answer 'A' *21^{st} June* had knowledge on the concept of apparent movement of the overhead Sun (solstice) whereby solstice *is a time in a year when the sun is directly overhead at noon over the tropic of Cancer or the tropic of Capricorn around 21^{st} and 22^{nd} December*. The Northern Hemisphere

solstice which occurs in 21st June is commonly known as the summer solstice in the tropic of Capricorn. Those who opted for 'B' *23rd September* and 'D' *22nd December* were not able to recognize that during solstice the Sun is vertically overhead in respective tropic on specific date. The southern hemisphere gets the maximum Sun's rays on 22nd December which is the summer solstice in the Tropic of Capricorn, and in the Northern Hemisphere it occurs on 21st June as Summer Solstice in the tropic of Cancer. These areas experience overhead Sun at different times of the year, the situation that results into the seasons of the year, which are *Solstice* and *Equinox*.

Item (viii) required the students to identify a feature which is formed because of a long fairly narrow stretch of land that extends through plains, hills or mountain. The students who chose the correct answer 'C' *valley* revealed to have a good knowledge on the major features of the Earth's surface, and how they are formed. The students who opted for incorrect answers 'A' *basin*, 'B' *plateaus* and 'D' *depression* lacked knowledge on how the diverse feature is formed as a result of a long and fairly narrow stretch of land that extends through plains, hills or mountains.

In item (ix), the students were required to calculate the local time at which Greenwich Meridian is 12:00 noon, and identify what will be the local time at Mikindani which is 10^0 S 40^0 E. The students who chose the correct answer 'C' *2:40 pm* had skills and knowledge on the concept of longitudes and time, when given two lines of longitudes whereby one longitude has time and another has not. The analysis shows that students who opted for distractors 'A' *2:40 am*, 'B' *2:30 pm* and 'D' *2:20 am* failed to realize that all places on the same longitude record the same time which is determined by Earth's rotation. The time is known as local time, since longitude 0^0 is called the Greenwich Meridian. As a result time increases by 4 minutes for every 1^0 of longitude when one travels from West to East and when one

travels from East to West, the time decreases by 4 minutes for every 1^0 of longitude.

Item (x), required the students to identify the longitude in which one gain time by 60 minutes for every 15 of longitude travel. The students who chose the correct answer 'C' *West to East* had knowledge and skills of determining longitudes to calculate local time of different places on the Earth's surface. The students who opted for incorrect answers 'A' *North to South,* 'B' *East to South* and 'D' *East to West* had insufficient knowledge about longitudes and time. In addition, they failed to realize that the Earth rotates on its axis from West to East is once after every 24 hours. This means that the Earth turns through 360^0 in 24 hours or 15^0 in one hour or 1^0 in 4 minutes.

2.1.2 Question 2: Matching Item

The question required the students to match the five items in List A with the correct responses from List B by writing a letter of the correct answer in the space provided. This question tested knowledge of students in topic of Agriculture.

LIST A		LIST B	
(i)	The system of livestock keeping dominant in areas with high population.	A.	Nomadism
(ii)	The seasonal movement of farmers with their animals searching for pastures.	B.	Peasant farming
(iii)	The system whereby a cultivator pastoralist keeps animals and cultivates some crops.	C.	Semi Nomadism
(iv)	The system of keeping livestock by moving from one natural pasture land to another.	D.	Shifting cultivation
(v)	The large scale rearing livestock.	E.	Ranching
		F.	Transhumance
		G.	Zero grazing

The question was attempted by 599,696 (100%) students out of which 41,956 (7%) scored 4 to 5 marks, 167,908 (28%) scored from 2 to 3 marks and 389,832 (65 %) scored from 0 to 1 mark. The performance in this question was average as 470,582 (35%) students scored from 2 marks and above. Figure 1 illustrate the students' performance in this question.

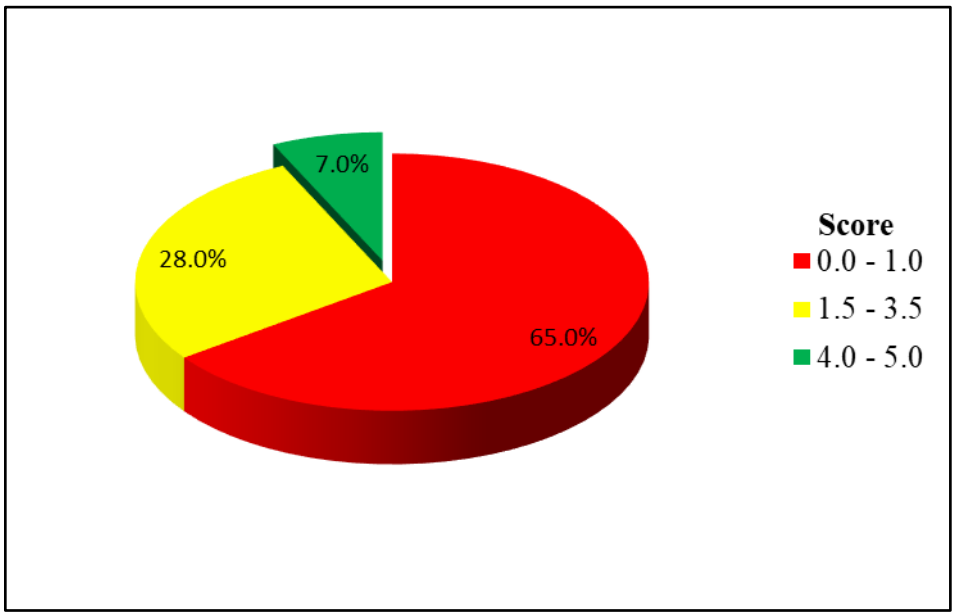


Figure 1: *Students' Performance for Question 2.*

In item (i) the students were required to match the system of livestock keeping dominant in areas with high population with the correct concept from list 1. The students who managed to choose the correct answer 'G' *Zero grazing* had knowledge of the system of livestock keeping which discourages the movement of livestock from one area to another. Those who opted for 'A' *Nomadism* failed to realize the system which deals with keeping livestock by moving from one are to another in search for water and pasture. Furthermore, those who opted for destructor 'B' *Peasant farming* failed to recognize that peasant farming does not involve livestock keeping instead it deals with small-scale crop farming. Moreover, those who selected answer 'C' *Semi Nomadism* lacked knowledge of the system

because *Semi Nomadism* involves keeping animals and cultivating crops. Similarly, those students who chose 'D' *shifting cultivation* were not aware that shifting cultivation does not involve keeping livestock, but it is a system of crop cultivation where by farmers move to another fresh area when the yields are low. Furthermore, students who chose destructor 'E' *Ranching* confused it with zero grazing as *Ranching* is *large scale livestock rearing and takes place in less populated areas while, zero grazing takes place in high populated areas.*

Item (ii) required the students to identify the seasonal movement of farmers with their animals searching for pasture. The students who had enough knowledge on transhumance chose the correct answer 'F' *Transhumance.* The students who chose incorrect answers 'A' *Nomadism* and 'C' *Semi Nomadism* were aware that all these involves movement of livestock but lacked sufficient knowledge of other types of the animal keeping according to pasture and weather condition of an area. In real sense, Transhumance involves seasonal movements of farmers and their livestock from one grazing land to another, especially to lowlands in Winter and highlands in Summer. Furthermore, the students who opted for 'B' *Peasant farming* and 'D' *Shifting cultivation* had insufficient knowledge on livestock keeping hence they matched answers by guessing.

Item (iii) required the students to identify the system whereby a cultivator pastoralist keeps animals and cultivates some crops. The correct answer was 'C' *Semi Nomadism*. Students who chose this answer were aware of the transitional system between total nomadism and sedentary livestock keeping which involves crop cultivation during rainy season to sustain their life. Those who opted for 'A' *Nomadism* and Semi *Nomadism* failed to differentiate the two systems hence they choose incorrect answers. Moreover, the students who chose alternative 'B' *Peasant farming*, 'D' *Shifting cultivation* were attracted by the word cultivate some crop in the

stem of the question. The students who opted for ‘E’ *Ranching*, ‘F’ *Transhumance* and ‘G’ *Zero grazing* were aware of the system of livestock keeping but failed to relate a system of keeping animals which involve both keeping animals and cultivating crops.

Item (iv) required the students to identify the concept which describes the system of keeping livestock by moving from one natural pasture land to another. Some students managed to match the correct answer ‘A’ *Nomadism* as they were knowledgeable of the traditional system of livestock keeping where livestock keepers move over a long distance searching for pasture and water. The students who opted for ‘B’ *Peasant farming*, ‘D’ *Shifting cultivation,* ‘E’ *Ranching,* ‘F’ *Transhumance* and ‘G’ *Zero grazing* had limited knowledge on livestock keeping and crop farming/cultivation concepts.

Item (v) required the students to identify the large scale rearing of livestock. The students who have sufficient knowledge on the commercial livestock keeping which takes place in large areas chose the correct answer ‘E’ *Ranching*. The students who chose incorrect answer ‘A’ *Nomadism,* ‘F’ *Transhumance* and ‘G’ *Zero grazing* had inadequate knowledge of the system of livestock keeping, especially the commercial one. Students who opted for ‘C’ *Semi Nomadism* failed to identify the system that involves both animal keeping and crop cultivation. Moreover, the students who opted for destructor ‘B’ *Peasant farming* and ‘D’ *Shifting cultivation* failed to differentiate various systems of livestock keeping and crop cultivation because *peasant farming* and *shifting cultivation* deal with crop cultivation only.

2.1.3 Question 3: True and False Items

The question was compulsory, and it consisted of ten (10) True or False items (i-x). Each item carried 1 mark, making a total of ten (10) marks. The items were set from various topics of Form One and Form Two syllabi. The students were required to write True if the statement is correct and False if the statement is not correct.

The question was attempted by 600,949 (100 %) students of which 120,855 (20.1%) scored from 7 to 10 marks, 453,988 (75.6%) scored from 3 to 6 marks and 26,106 (4.3%) scored from 0 to 2 marks. The analysis shows that students' performance in this question was good as 574,843 (95.7%) scored 3 marks and above. Figure 2 illustrates the students' performance for this question.

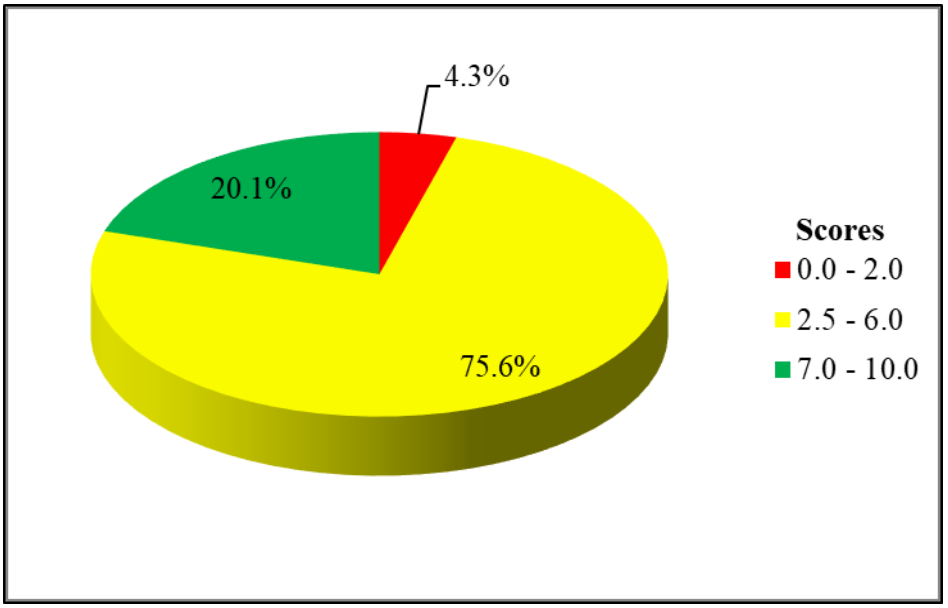


Figure 2: *Students' performance for question 3.*

In item (i), the statement given was: *Saturn is the third planet in the solar system from the Earth*. This item was intended to test the students' knowledge in identifying and arranging the positions of planets in the Solar

System. The correct answer was *True*. *S*tudents who had adequate knowledge on locating position of the planet in relation to the distance from the Sun got it right.

Item (ii) was intended to test the knowledge of the students on the days taken by the Moon to revolve around the Earth. The statement given was; *it takes 3651/4 days for the moon to revolve around the earth*. The students who wrote the correct answer *False* had sufficient knowledge of the revolution of the Earth, and the actual days taken to revolve around the Sun. The students who wrote *True* had insufficient knowledge of the Earth's revolution.

Item (iii) aimed at testing knowledge of students in identifying the difference in the reading of the dry bulb and wet bulb thermometer. The statement given was; *when the difference in the readings of the dry bulb and wet bulb thermometer is high, humidity is high*. The students who wrote the correct answer *False* had sufficient knowledge on reading thermometers. Those who wrote *True* had limited knowledge of the two types of thermometers and how they work.

Item (iv) tested students' ability to identify the results of Earth's revolution ,especially when it is in eclipses. The statement given was: *Penumbra is not part of the shadow in which the light source is completely blocked*. The students who wrote the correct answer *True* had knowledge of the solar and lunar eclipses and how they occur. Moreover, the students who wrote *False* lacked enough knowledge of eclipses and the occurrence of Penumbra .

Item (v) stated that; *Hydrological cycle is a continuous circulation of water from the earth's surface to the atmosphere*. The correct answer was *True*, which was chosen by the students who were knowledgeable of the processes involved in the hydrological cycle such as *evaporation*,

condensation and precipitation. The students who wrote *False* showed insufficient knowledge about hydrological cycle.

Item (vi) stated that; *Wind is air in motion from low pressure to high-pressure area*. The students who wrote *False* were familiar with behavior of winds to blow from areas of high pressure to areas of low pressure while the students who wrote *True* lacked knowledge on behavior of winds.

Item (vii) tested the ability of student's in identifying effects of tourism. The statement given was; *tourism can affect negatively the culture of the host countries*. The correct answer was *True*. Tourism as human economic activity in some cases may lead to cultural interference and bring unacceptable behaviors to the host country when measures and intervention are ignored. For example, ways of dressing, food style and language. The students who provided the incorrect answer *False* were not able to state the negative impact of tourism in host countries.

Item (viii) tested knowledge of student in relief rainfall. The statement given was; *the side of the mountain facing the direction of the wind is known as leeward side*. The students, who had adequate knowledge on the effects of wind on relief rain formation, chose *False*. Furthermore, the students who wrote *True* lacked enough knowledge of the concept of leeward side of the mountain that does not face the direction of the winds while windward side faces the direction of wind.

Item (ix) tested the ability of students in identifying the challenges facing small-scale agriculture. The statement stated that; *Capital is the only solution to improve small-scale agriculture*. The students who wrote *False* were aware that there are diverse problems facing small-scale agriculture, which need solutions. The students who wrote *True* had insufficient knowledge on the problems facing small-scale agriculture.

Item (x) aimed at testing students' knowledge on the scale of a map. The statement given was*; the scale of a map is the ratio between the distance on the map and the actual distance on the ground*. Those who had knowledge of a map scale managed to provide the correct answer *True*. On the other hand, the students who wrote *False* lacked knowledge on relations between map distance and ground distance. Extract 3.1 shows an example of good answer.

3. In each of the items (i)-(x), write **True** if the statement is correct or **False** if the statement is not correct.

(i) Saturn is the third planet in the solar system from the earth...True.....

(ii) It takes 365¼ days for the moon to revolve around the earth...False.....

(iii) When the difference in the readings of the dry bulb and wet bulb thermometer is high, humidity is high...False:.....

(iv) Penumbra is **not** part of the shadow in which the light source is completely blocked....True:.....

(v) Hydrological cycle is a continuous circulation of water from the earth's surface to the atmosphere....True.....

(vi) Wind is air in motion from low pressure to high pressure area....False.....

(vii) Tourism can affect negatively the culture of the host countries....True.....

(viii) The side of the mountain facing the direction of the wind is known as leeward side..False:.....

(ix) Capital is the only solution to improve small scale agriculture....False.....

(x) The scale of a map is the ratio between the distance on the map and the actual distance on the ground...True:.....

Extract 3.1 A sample of a good answers from one of the students.

Some students who scored few marks failed to follow the requirements of the question. Extract 3.2 illustrates the sample of poor answers.

3. In each of the items (i)-(x), write **True** if the statement is correct or **False** if the statement is not correct.

(i) Saturn is the third planet in the solar system from the earth. Keeping by livestock

(ii) It takes 365¼ days for the moon to revolve around the earth. pasture land

(iii) When the difference in the readings of the dry bulb and wet bulb thermometer is high, humidity is high. Sem Nomadism

(iv) Penumbra is **not** part of the shadow in which the light source is completely blocked. days solar

(v) Hydrological cycle is a continuous circulation of water from the earth's surface to the atmosphere. the following

(vi) Wind is air in motion from low pressure to high pressure area. arth aroth Sun

(vii) Tourism can affect negatively the culture of the host countries. movement

(viii) The side of the mountain facing the direction of the wind is known as leeward side. overthead

(ix) Capital is the only solution to improve small scale agriculture. Currents

(x) The scale of a map is the ratio between the distance on the map and the actual distance on the ground. day and night

Extract 3.2; An incorrect response from one of the students in question 3.

In extract 3.2, the student picked up some of the words from the question paper and wrote them as answers instead of writing *True* if the statement was correct and *False* for incorrect statement.

2.2 SECTION B: SHORT ANSWERS QUESTIONS

2.2.1 Question 4: Features of the Earth's Surface

This question had three parts (a), (b) and (c). The students were required to (a) briefly describe four layers of the atmosphere, (b) name any two boundaries separating one layer of the atmosphere from another layer and (c) explain how temperature changes in each layer of the atmosphere mentioned in 4(a).

The question was attempted by 529,690 (100 %) students. About 525,513 (99.2 %) scored from 0 to 4 marks, 3,517 (0.7%) scored from 4.5 to 9.5 marks and 660 (0.1%) scored from 10 to 15 marks. The performance in this question was poor as majority of the students scored below average. Figure 3 illustrates the students' performance for this question.

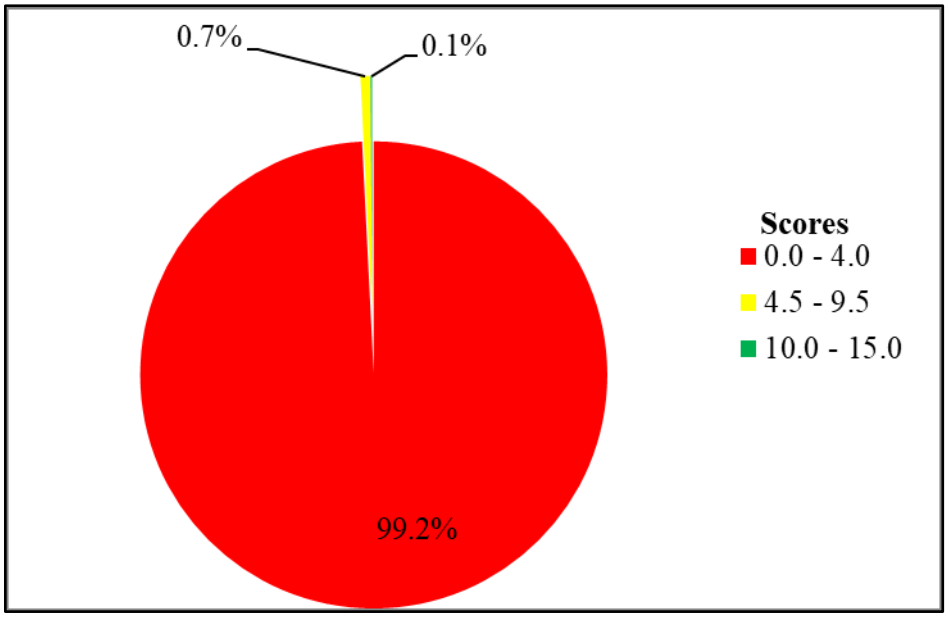


Figure 3: *Students' Performance for Question 4.*

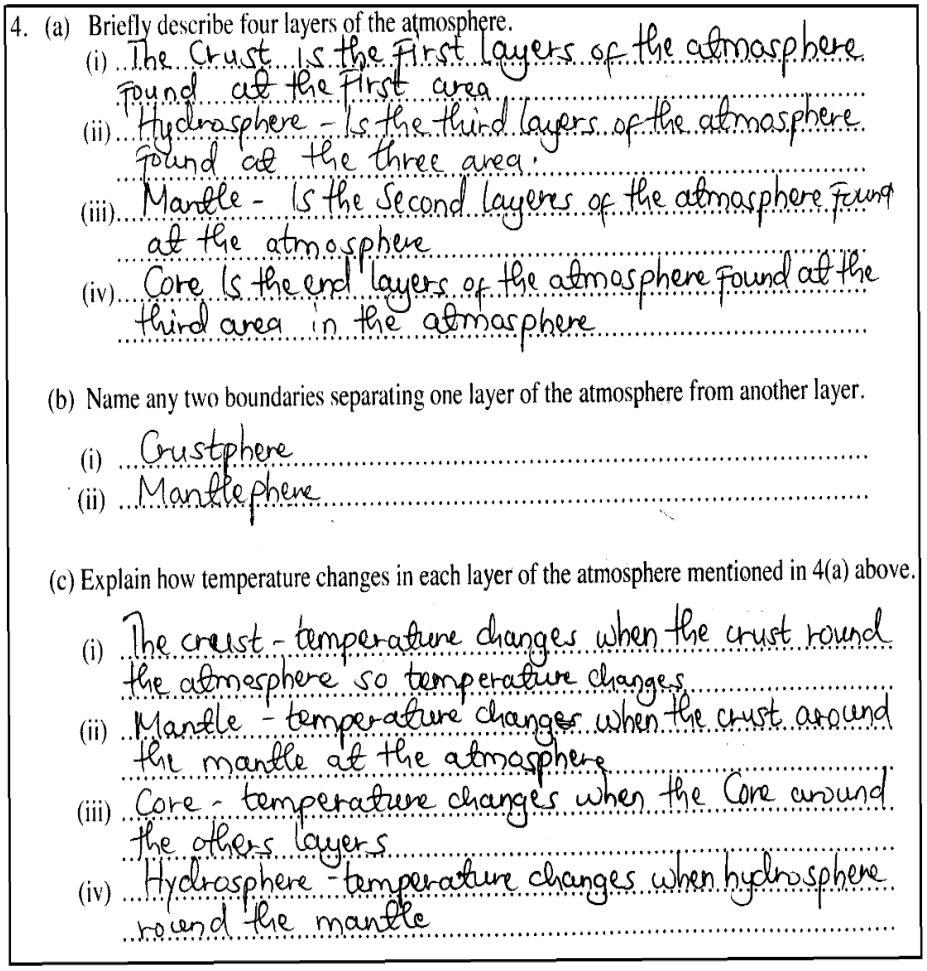
The students who scored from 0 to 4 marks attempted some parts of the question incorrectly, as they had little knowledge or none to all the concepts of the atmosphere. Most students failed in Part (a) which tested their

knowledge on the layers of the atmosphere. This part required them to describe briefly four layers of the atmosphere. Some answers revealed that some students misinterpreted the demands of the question, as they did not score any mark. For example, some mentioned internal structure of the Earth such as; *crust, mantle and core* others mentioned components of the Earth's crust such as; *hydrosphere, lithosphere, atmosphere* and *biosphere. Moreover,* some students mentioned *ozone layer, gas layer, dust layer* and *rainfall layer* others wrote *ozone layer, cloud layer* and *sky layer,* while some mentioned *ozone layer, middle layer, cloud layer* and *top layer* instead of layers of atmosphere which are *troposphere, stratosphere, mesosphere and thermosphere.*

In part (b), some students provided wrong names of the two boundaries separating one layer of the atmosphere from another layer. For example, one of the students wrote *Greenwich* and *Equator* which are the Great Circles dividing the Earth into two equal spheres. Another student mentioned ways of locating positions of places on the maps such as; *Latitudes* and *Longitudes*. Others mentioned weather elements such as; *clouds cover and precipitation,* some mentioned *biosphere* and *lithosphere* while others mentioned *continent and ocean.* Moreover, some students mixed correct and incorrect answers. For example, one of the students wrote *Mesopause* and *Mesosphere* while another one wrote *Ozone layer* and *Tropopause* instead of correct responses, which were M*esopouse*, *Stratopause or Tropopause.*

In part (c), some students failed to describe the temperature changes in each layer of the atmosphere as mentioned in part 4 (a). For example, one student wrote factors affecting the temperature of an area such as; *latitude*, *altitude, ocean currents* and *wind*. Another one mentioned the internal structure of the Earth such as; *crust* and *core,* while another student mentioned irrelevant answers which had no any relation with the subject

matter such as; *climatic change, global warming, land reduction* and *soil erosion.* Furthermore, some students provided partial explanations on the way temperature changes in each layer of the atmosphere. For example, one student wrote, "*as you go up temperature decreases".* Furthermore, other students provide wrong answers such as: *Crust has the lowest temperature in all layers since it is the outer, Core has the temperate temperature since temperature increases as you go inner*. Extract 4.1 shows a sample of such incorrect answers.



4. (a) Briefly describe four layers of the atmosphere.

(i) The Crust is the First layers of the atmosphere found at the first area

(ii) Hydrosphere - Is the third layers of the atmosphere found at the three area.

(iii) Mantle - Is the second layeres of the atmosphere found at the atmosphere

(iv) Core is the end layers of the atmosphere found at the third area in the atmosphere

(b) Name any two boundaries separating one layer of the atmosphere from another layer.

(i) Crustphere

(ii) Mantlephere

(c) Explain how temperature changes in each layer of the atmosphere mentioned in 4(a) above.

(i) The creust - temperature changes when the crust round the atmosphere so temperature changes

(ii) Mantle - temperature changes when the crust around the mantle at the atmosphere

(iii) Core - temperature changes when the Core around the others layers

(iv) Hydrosphere - temperature changes when hydrosphere round the mantle

Extract 4.1 A sample of incorrect answer for question 4 from the student.

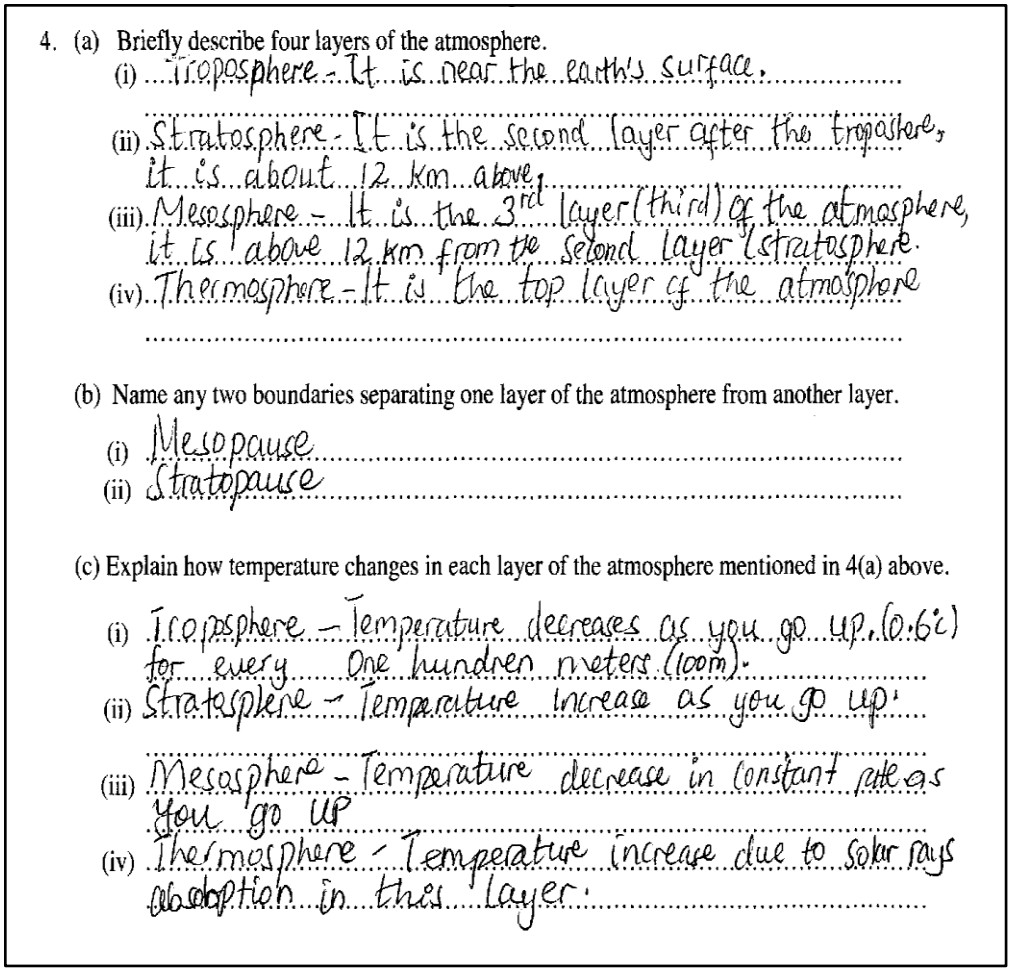
Extract 4.1 shows that the student explained on hydrosphere and internal structure of the Earth in part (a), instead of describing layers of the atmosphere such as; *Troposphere, Stratosphere, Mesosphere and Thermosphere.* In part (b), he/she mentioned irrelevant concepts in Geography instead of names of boundaries of layers of the atmosphere which are; *Mesopause, Stratopause* or *Tropopause.* However in part (c) she/he described *mantle, core, crust and hydrosphere* instead of describing temperature changes in each layer of the atmosphere such as: *the decrease* in *temperature with altitude for* $0.6^{0}c$ *for every 100 meters in Troposphare, increases in temperature with altitude in Stratosphere, constantly decrease in temperature from the base (Stratopause) to the Mesopause at the top in Mesosphere and increases in temperature due to the absorption of shorter solar rays in Thermosphere.*

Moreover, the answers from the students who scored average (from 4.5 to 9 marks) shows that they were able to answer some parts of the question correctly. For example, in part (a), some students described few layers of the atmosphere correctly, while others gave partial explanations. Furthermore, some student mixed correct and incorrect answers such as; *Troposphere, Stratosphere, Mesosphere* and *Ozone layer*. In part, (b) some students failed to name the two boundaries separating one layer of the atmosphere from another layer, while others managed to name only one boundary correctly. For example, one student mentioned *Tropopause* and *Ozone layer,* while another student wrote *Tropopause* and *Sun*. In part (c), most students were not able to describe the temperature changes in each layer of the atmosphere. For example, one of the students wrote *temperature decreases with altitude,* while another wrote *in the second layer temperature increases because of Ozone layer*. Few of them provided partial answers while others failed completely.

On the other hand, students who scored from 9.5 to 15 marks had adequate knowledge of the subject matter, and they understood the demands of the question. Though, there were some minor variations in their scores which were influenced by strengths and clarity of their answers. For example, in part (a) students were able to describe four layers of the atmosphere as; *Troposphere is the layer of the atmosphere near the earth, it is found between 0 to 12 km, Troposphere is the layer of the atmosphere near the earth, Stratosphere is the second layer, which lies above the troposphere, Mesosphere is third layer that lies above the stratosphere and Thermosphere is the uppermost layer of the atmosphere*.

In part (b), some students managed to name the two boundaries separating one layer of the atmosphere from another such as; *Tropopause is the boundary between Troposphere and Stratosphere*, *Stratopause is the boundary between Stratosphere and Mesosphere* and *Mesospause is the boundary between Mesosphere and Thermosphere.*

In part (c), students were able to explain how temperature changes in each layer of the atmosphere as mentioned in question 4 part (a). The answers are ; *In Troposphere temperature decreases with altitude, increase in 0.6 for every 100 meters. For Stratosphere temperature increases with altitude increase, Mesosphere temperature decreases constantly from the base (Stratopause) to the Menopause at the top and in Thermosphere temperature increases due to the absorption of shorter solar rays.* Moreover, some students explained few points on how temperature changes in each layer of the atmosphere instead of four, while others managed to identify four points but mixed correct and incorrect explanations. Extract 4.2 represents such a good answers.



4. (a) Briefly describe four layers of the atmosphere.
(i) Troposphere - It is near the earth's surface.
(ii) Stratosphere - It is the second layer after the troposhere, it is about 12 km above.
(iii) Mesosphere - It is the 3rd layer (third) of the atmosphere, it is above 12 km from the second layer (stratosphere.
(iv) Thermosphere - It is the top layer of the atmosphere

(b) Name any two boundaries separating one layer of the atmosphere from another layer.
(i) Mesopause
(ii) Stratopause

(c) Explain how temperature changes in each layer of the atmosphere mentioned in 4(a) above.
(i) Troposphere - Temperature decreases as you go up. (0.6°c) for every one hundren meters (100m).
(ii) Stratosphere - Temperature increase as you go up.
(iii) Mesosphere - Temperature decrease in constant rate as you go up
(iv) Thermosphere - Temperatue increase due to solar rays absorption in this layer.

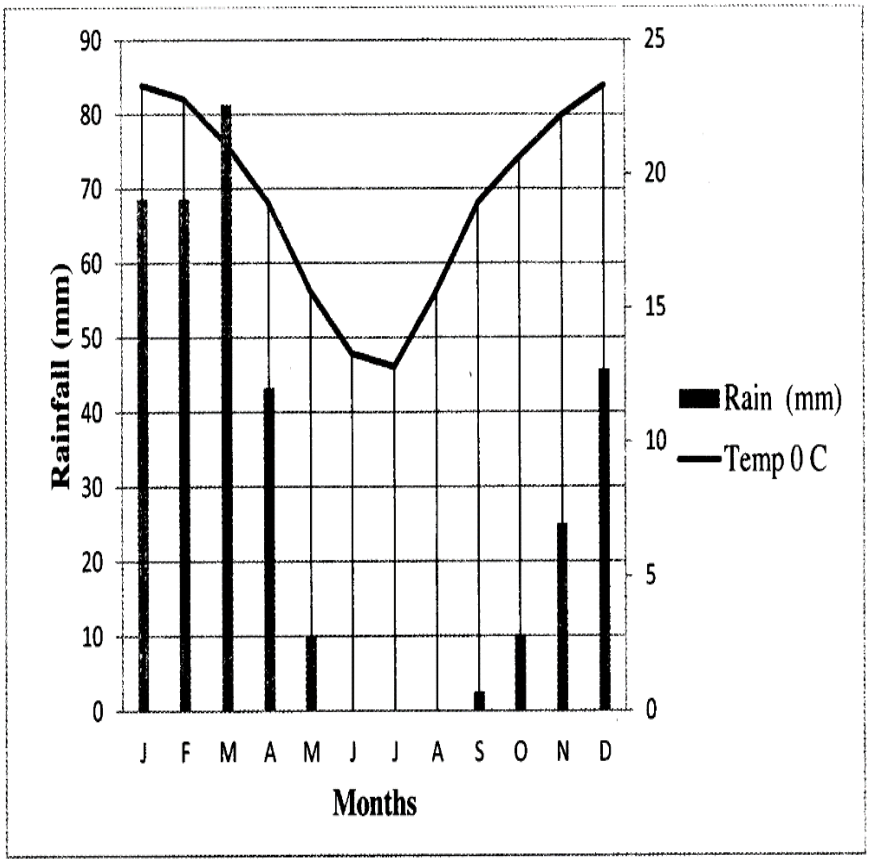
Extract 4.2 A sample of relevant answers for question 4.

2.2.2 Question 5: Climate

This question was compulsory and tested students' knowledge on Climate. The question had five parts (a), (b), (c), (d) and (e), in which the students were required to study the Climograph provided then answer the question that followed.

CLIMOGRAPH

5. Study the following climograph and then answer the questions that follow:



The students were required to (a) name the type of climate, (b) give three reasons to support the choice of the climate mentioned in 5 (a), (c) name the part of Africa in which the climate is possibly found, (d) list three crops which can be grown in the area and (e) state the relationship between temperature and rainfall.

The question was attempted by 582,449 (100 %) students of all 514, 674 (88.4%) scored from 0 to 4 marks, 66,076 (11.3%) scored from 4.5 to 9.5 marks and 1,699 (0.3%) scored from 10 to 15 marks. The performance in

this question was generally poor as 67,775 (11.6%) students scored 4.5 marks and above. Figure 4 illustrates performance for this question.

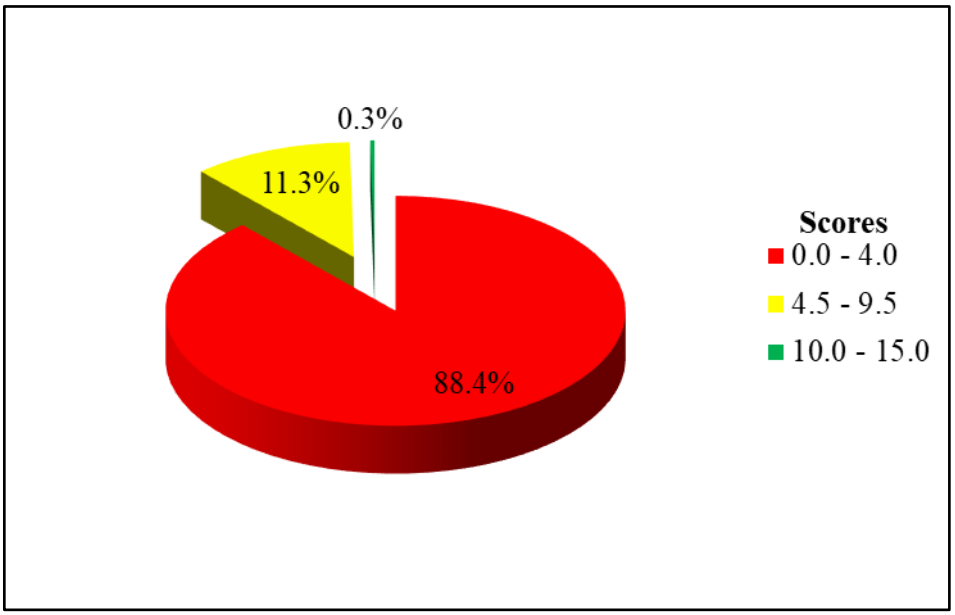


Figure 4: *Students' performance for question 5.*

The students who scored from 0 to 4 marks had insufficient knowledge on the climate topic, as they were not able to study and understand the climograph. For example, in part (a) some students failed to name the correct type of climate as they were not able to use the information displayed in the climograph to identify the climate of an area. For example, the wrong answers provided by the students were such as: *Mediterranean climate, Tropical climate* and *Equatorial climate* instead of *Tropical desert/Semi desert/ Semi-arid* which was the correct answer as a result, they failed to get any mark. Moreover, some students managed to give the correct answers.

In part (b), some students were not able to give three reasons to support the choice of the climate mentioned in 5 (a). For example, some of them provided characteristics of Mediterranean climate such as; *temperature ranges from 21^0 c in summer to 10^0 c in winter, winters are rainy and mildly*

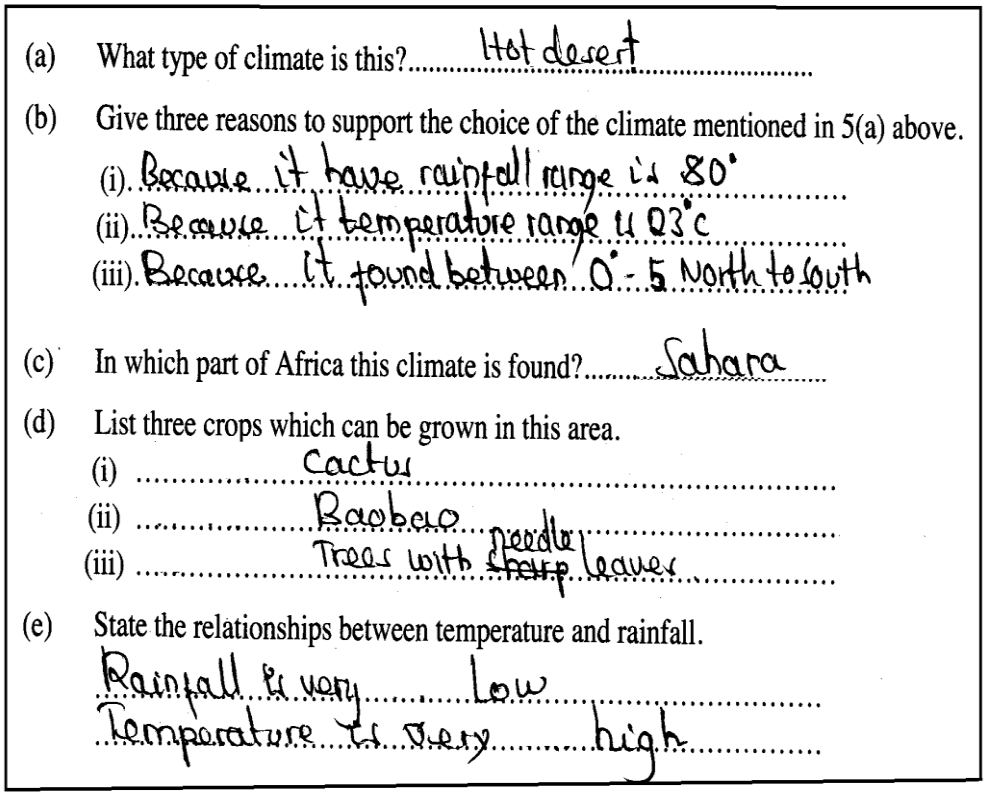
and summer are hot and dry, others wrote: *low humidity during dry season, the type of rain is conversional and annual range of temperature is 8 ^{0} c* while another wrote on characteristics of Equatorial climate such as; *high temperature, heavy rainfall and high humidity*. On the other side, some students had partial knowledge and provided correct and incorrect reasons to support the choice of the climate mentioned in 5 (a). For example, one student wrote: *temperature is high, low rainfall* and *high humidity* instead of giving reasons to support the choice of the climate mentioned such as: *seasonal rainfall, annual temperature range is high, the graph shows the higher the temperature, the higher the rainfall and the lower the temperature, the lower the rain/absence of rainfall, little annual rainfall and natural vegetation is very scant.*

In part (c), most students in this group failed to mention parts of Africa where that climate is found. For example, some student mentioned *Tanzania and Congo regions* which are located in *Equatorial region* and the others mentioned *Singida* and *Dodoma.* Furthermore, some students managed to mention some parts of Africa such as *North of Equator* and *South of Equator,* which were contrary to demands of the question instead of correct answer, which was *Tropical areas covering North and South of Equator in Africa.*

In part (d), some students failed to list three crops which can be grown in that area. For example, one student wrote *fruits, vegetation* and *flowers,* another student mentioned *pumpkin, yams* and *rubber* while another student wrote *tomatoes, onions and vegetables*. However, some students were able to list few correct crops, which can be grown in that area. For example, some student wrote *maize, rice* and *potatoes rice, yams* and *groundnuts* while others mentioned the crops which are grown in *Equatorial climate such as rubber, cocoa and oil palms* instead of *date palm, cotton, rice, sugar*

cane, vines, millet, wheat, barley, cassava, beans, sunflower, sorghum and maize.

In part (e), most students failed to state the relationship between temperature and rainfall due to inadequate knowledge of climate and weather. They failed to realize that, if the average annual rainfall is 20mm and temperature is 22^0 C, this is the climate of an area which is characterized by low rainfall and high temperature. For example, some students wrote *all are the elements of weather*, another student wrote *all are drawn in the same graph*, while one student wrote *all are located in the line of the Latitudes and Longitudes*. Moreover, some of the students failed to state the relationship between temperature and rainfall due to incompetence in English language, while others misunderstood the question demands. Example one student, stated relationship between temperature and rainfall by giving the *meaning of temperature and rainfall* instead of stating the relationship between temperature and rainfall such as: *when the temperature is high, the amount of rainfall is also high, when temperature decreases the amount of rainfall decrease and when temperature increases the amount of rainfall increases.* Analysis indicates that few students scored low marks because they partially stated the relationship between temperature and rainfall. Extract 5.1 is a sample of poor response.



Extract 5.1 A sample of incorrect answers for question 5.

Extract 5.1 shows that, in part (a) the student failed to provide the correct type of climate, which was *semi desert/desert* in part (b) the student failed to give reasons to support the choice of climate mentioned in 5 (a) which were: *high annual range of temperature, annual rain fall is little and natural vegetation is very scant.* In part (c)he/she wrote Sahara as a part in Africa where that climate is found instead of *Kalahari desert or Namib desert* and in part (d) he/she wrote *cactus, baobao* and *trees with needle leaves* as crops grown in the area instead of *dates, sorghum, millet, cotton* and *palms*. In part (e) he/she wrote rainfall is very low and temperature is very high instead of stating the relationship between rain fall and temperature in that station.

Some students who scored from 4.5 to 9.5 marks were able to understand the demand of some parts of the question. For example, in part (a) some

students managed to name the type of climate, while others gave incorrect answers such as *desert climate and cool desert* In part (b), the majority of students mixed correct and incorrect reasons to support their choice of the climate mentioned in 5 (a). The answers provided were such as: *vegetation is scarce, rainfall is low, humidity is high, seasonal rainfall,* and *range of temperature is high.*

In part (c), some students managed to name part of Africa where that climate is found, while others failed to provide the correct answers. For example, one student wrote *North and South of the Equator.*

In part (d), most students mentioned all the three crops which can be grown in that area, while others managed to give only one or two crops such as *maize and beans, millet and wheat, rice* and *water melon.*

Part (e) was poorly performed as only few students were able to state the relationship between temperature and rainfall, while others stated the relationship partially. For example, one student wrote; *if there is high temperature, it is easy to have high rainfall* and *low temperature will lead to low rainfall.*

The analysis indicates that the students who scored higher marks from 9.5 to 15 had adequate knowledge and skills on the concept of types of climate and their characteristics. For example, in part (a) some students managed to name the correct type of climate as; *Tropical desert, Semi-arid and Semi desert.*

Similarly in part (b) most students were able to provided reasons which to support the climate mentioned in (a) such as; *seasonal rainfall, annual temperature range is high, the graph shows the higher the temperature, the higher the rainfall and the lower the temperature, the lower the rain/absence of rainfall, little annual rainfall and natural vegetation is very*

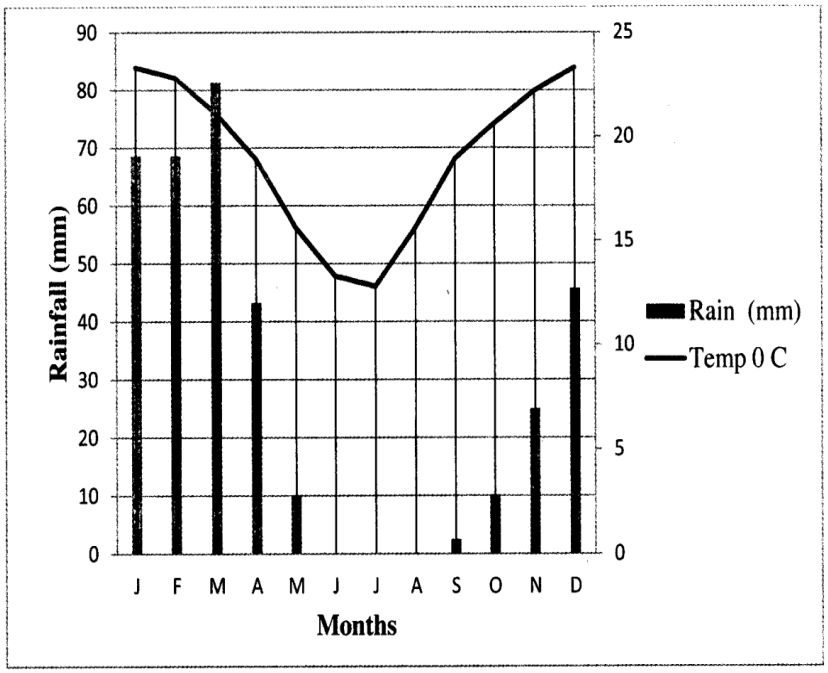
scant. The variation of their scores was determined by the number of correct reasons provided by individual students in relation to the demand of the question.

In part (c), further analysis indicates that most students were able to name the part of Africa in which this climate is found as; *Tropical areas covering North and South of Equator in East Africa.* Other students mentioned the part of Africa by their actual name and location, while others provided location only such as North and South of Equator.

Moreover, in part (d), most students managed to list crops which can be grown in this area such as; *date palm, cotton, rice, sugar cane, vines, millet, wheat, barley, cassava, beans, sunflower, sorghum, maize, tea etc.* Others provided few crops contrary to the demands of the question while, other students mixed correct and in correct crops.

On the other hand, in part (e), most students were able to state the relationship between temperature and rainfall such as; *when the temperature is high, the amount of rainfall is also high, when temperature decreases the amount of rainfall decrease and when temperature increases the amount of rainfall increases.* However, variation of the students' scores was determined by relevant presentation of the correct answers. Extract 5.2 shows a sample of a student with good scores.

5. Study the following climograph and then answer the questions that follow:



(a) What type of climate is this? Desert climate.

(b) Give three reasons to support the choice of the climate mentioned in 5(a) above.

(i) Because there is low amount of rainfall.

(ii) There is low temperature during the night

(iii) There is no trees and high temperature during the day.

(c) In which part of Africa this climate is found? Central Africa.

(d) List three crops which can be grown in this area.

(i) Cassava.

(ii) Dates

(iii) Coconut trees.

(e) State the relationships between temperature and rainfall.

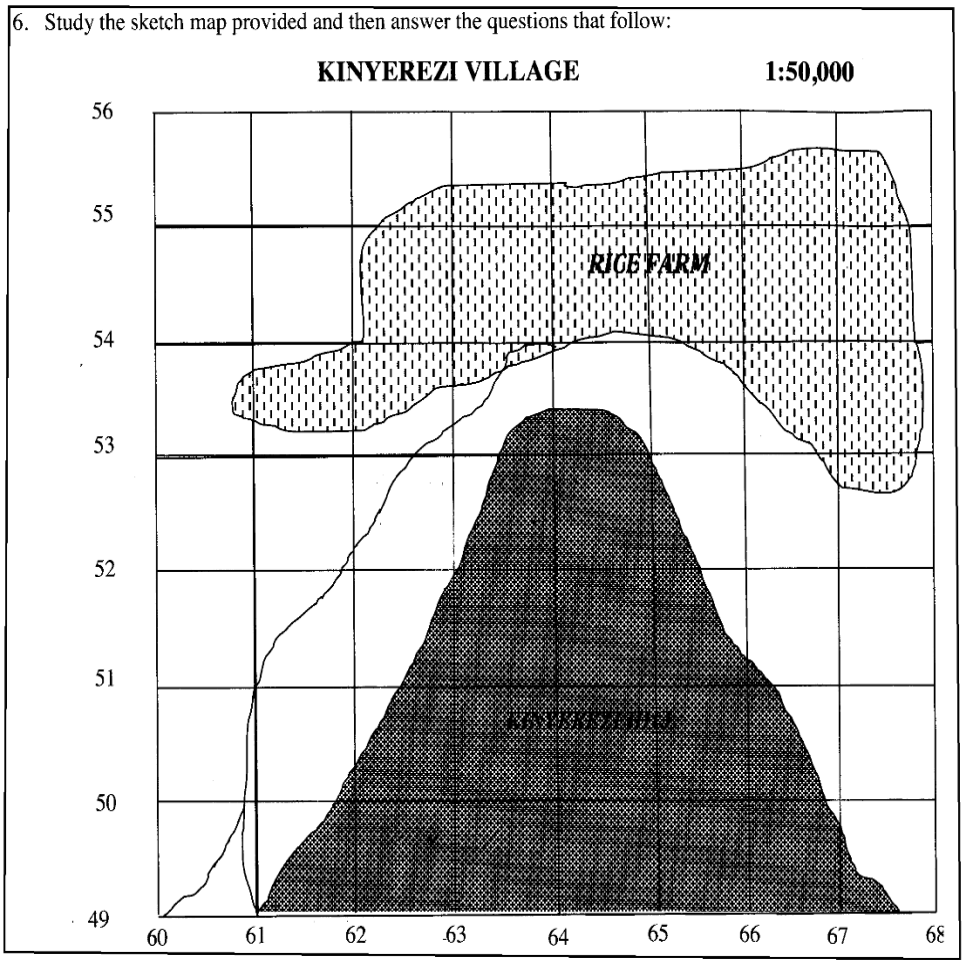
When there is high rainfall there will be low temperature so; the higher the rainfall the lower the temperature.

Extract 5.2 A sample of good answer for question 5.

2.2.3 Question 6: Map Work

This question consisted of five (5) parts in which students were required to study the sketch map provided, and then answer the questions that followed.

SKETCH MAP



Students were required to (a) calculate the length of the river from grid reference 600490 to 640540 in Km, (b) calculate the area covered by Kinyerezi hill in Km^2, (c) mention three methods which can be used to calculate the area of the rice farm in the given map, (d) list any two essentials of map which have not been applied to draw the sketched map and (e) convert the given map scale into statement scale.

The question was attempted by 571,667 (100 %) students. About 477,612 (83.5%) scored from 0 to 4 marks, 80,459 (14.1%) scored from 4.5 to 9.5 marks and 13,596 (83.55) scored from 10 to 15 marks. The performance in this question was generally poor as 94,055 (16.5%) students scored from 4.5 to 15 marks. Figure 5 illustrates the students' performance for this question.

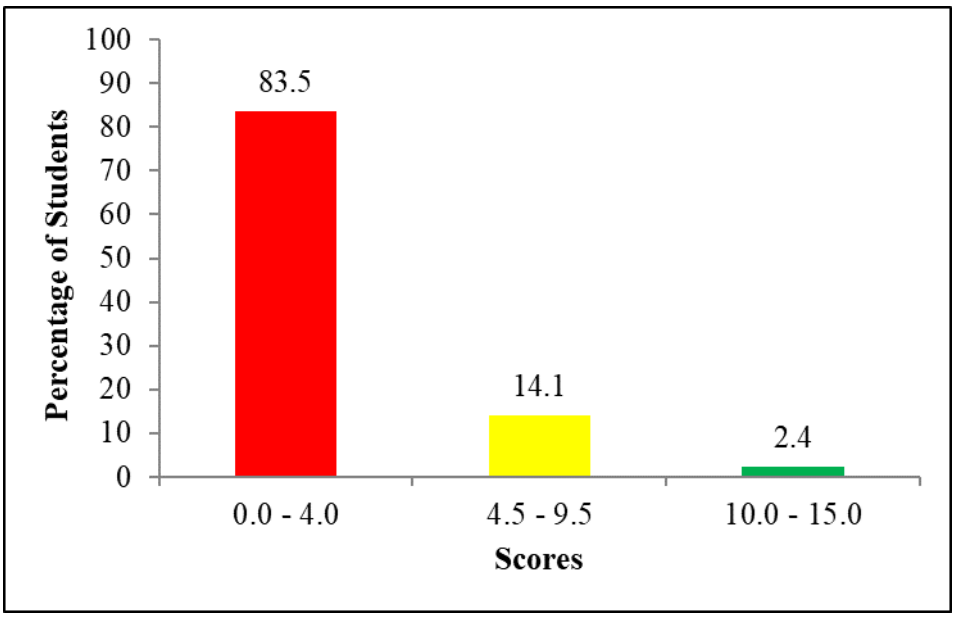


Figure 5: *Students' Performance for Question 6.*

The analysis indicates that a total of 477,612 (83.5%) students scored from 0 to 5 marks. Some of them had inadequate knowledge and skills in map work, while others misconceived some parts of the question as they provided incorrect answers. In part (a), some students failed to measure and calculate the length of the river from grid reference 600490 to 640540 in Km. This indicates that they lacked knowledge of locating positions on a map by using grid references. Moreover, other students skipped some parts of the question, which required application of mathematical skills. Some students were able to measure a distance along the river using the procedures of measuring distances on the map but failed to convert it in

actual ground distance due to poor mathematical skills. For example, one student wrote the correct length of the river as *13.1cm* but failed to convert into actual ground distance into *km* which was *13.1 km*.

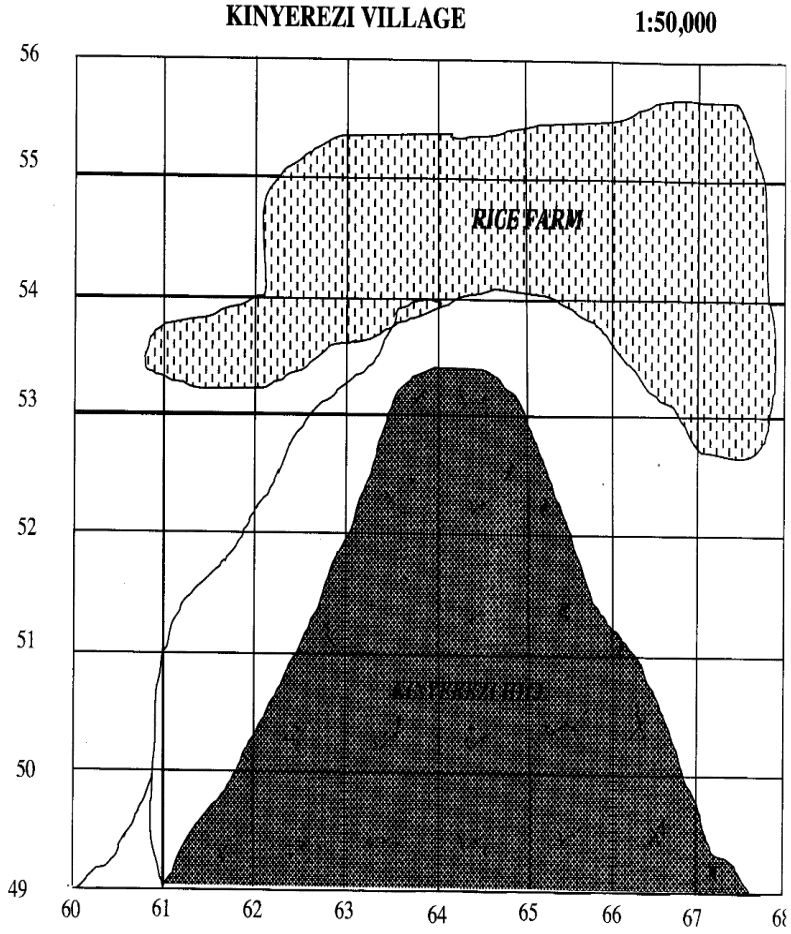
In part (b), some of the students misconceived some parts of this question as they provided incorrect answers. For example, some students were able to identify the number of complete and incomplete squares, but failed to calculate the area of Kinyerezi hill in Km^2. Some students failed to provide the correct answers due to poor application of mathematical skills in measurement of areas on a map by using square or tracing methods. For example, one student provided incorrect answers such as; *full squares 12* and *half squares 16/2* instead of *full squares 8* or *4* and *half squares 15/2* as as a result he/she ended up calculating the wrong area. Furthermore, some students managed to calculate the area of a corresponding square on the ground as 1km x1km = $1km^2$ by using tracing method which required them to count all the full and half squares, and then divide the total number of square by 2 to get full squares. As a result, they ended up with wrong area calculations. Generally, poor computation skills resulted to incorrect answers.

Analysis in part (c) indicated that some of the students were not able to mention the three methods, which can be used to calculate area of the rice farm in the given map. For example, some student provided ways of showing relief of an area such as; *contour, spot height* and *benchmark*, while others provided methods of measuring distance of a place such as; *pair of divider, paper* and *thread*. However, few students managed to mention at least one to two methods, while others mixed correct and incorrect answers. For example, one student wrote: *square method, division method* and *a pair of divider* instead of *division method*, *stripping method*, and *square method*

In part (d), some students failed to identify two essentials of a map which have not been used to draw the sketch map given. For example, some students misinterpreted the demand of the question. As a result, they provided essentials of map which had been applied to draw the sketched map such as; *title* and *scale* while few provided correct answers such as; *key* and *North direction*.

Part (e) tested the ability of the students to convert a given map scale into statement scale. Majority of the students provided incorrect answers due to poor mathematical skills, which was proven by their inability to show the procedures. For example, one student presented *0.5 cm = 1km*, while another student wrote *1km = 0.5cm* instead of: $Scale = \frac{Map\ distance}{Actual\ ground\ distance}$.They further put a given scale into statement scale: *Actual ground distance* $\frac{50000}{1000000} \times 1km$ and *Ground distance = 0.5 Km*. Extract 6.1 represents a sample of such poor response.

6. Study the sketch map provided and then answer the questions that follow:



(a) Calculate the length of the river from grid reference 600490 to 640540 in Km.

Soln.

length of river = 15cm 1km = 50,000cm

15km 1km x 15 ? = 15cm ∴ the length of a river in km is

50000 50,000 0·0003km

(b) Calculate the area covered by Kinyerezi hill in Km^2.

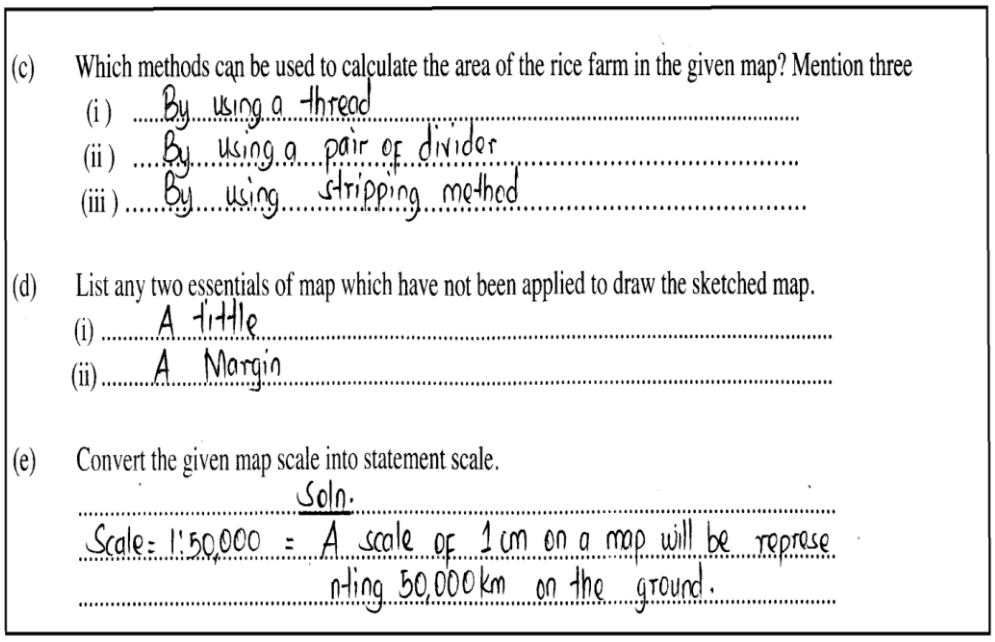
Soln.

Full square + Half square = 15 + 8

0 2 2

= 23

2 = 11·5km^2 Area covered by Kinyerezi hill is 11·5km^2


(c) Which methods can be used to calculate the area of the rice farm in the given map? Mention three

(i) By using a thread

(ii) By using a pair of divider

(iii) By using stripping method

(d) List any two essentials of map which have not been applied to draw the sketched map.

(i) A tittle

(ii) A Margin

(e) Convert the given map scale into statement scale.

Soln.

Scale: 1:50,000 = A scale of 1 cm on a map will be represe nting 50,000 km on the ground.

Extract 6.1 A sample of incorrect answers for question 6.

In Extract 6.1 part (a), the student obtained *15.5cm* as the length of the river in a map instead of a correct distance which ranged from *13.1 to 13.5cm.* Then he/she used the scale provided to calculate the distance of the river in km as a result he/she provided *0.0003km* instead of a correct distance which ranged from 6.6 km to 6.8 km. In part (b), he/she provided wrong average of full and half squares (11.5), instead of the correct average of 15.5 for full and half squares which results to a distance of *15.5 km*^{2} as an area of Kinyerezi hill. In part (c), the student mixed a method are used to calculate area of rice farm (*stripping method*) with two methods which are used to measure distance of linear features (*using a pair of divider and using a thread*), instead of three methods used to calculate area of a rice farm such as *division method*, *stripping method,* and *square method*. Furthermore, in part (d), the student provided essentials of a map, which were available in the map such as; *tittle* and *margin,* instead of two map essentials that have not been applied in that sketch map such as a *compass direction* and *a key*. In part (e) the student copied the ratio scale provided in the map and presented a wrong scale conversion as: *a scale of 1 cm on the map will be*

representing 50,000 on the ground instead of correct conversion which was: *One centimeter on the map represents half kilometer on the ground.*

Furthermore, the analysis shows that the students who scored 4.5 to 9 marks had moderate knowledge in map work and applications of mathematical skills in calculating, measuring, converting scales and identifying essentials of maps. In part (a), some students were able to calculate the length of the river from grid reference 600490 to 640540 in Km due to competence in applying mathematical skills. Others students skipped some procedures hence provided wrong answers. For example, some students wrote the length of the river *13.5cm*, while others wrote between *10.3 and 13.3 cm.* Furthermore, some students converted the distance of the river in order to obtain actual ground distance of which they got a distance ranging from *4.5 to 6.8 km* instead of a distance ranging from *13.1 to 13.5km.*

Analysis indicates that in part (b), some students managed to provide correct answers after applying procedures required for calculating complete and incomplete squares of Kinyerezi Hill. Others provided complete squares only, hence they ended up with wrong area. Furthermore, some of the students failed to provide correct units used to present area such as km^2 instead they use *km* while others wrote the correct area without a unit instead of correct complete *squares 4* and *half squares 15/2*, then when converted into km^2 the answer was $13.5km^2$.

In item (c), most students responded correctly on the methods which can be used to calculate the area of the rice farm in the given map, while others mixed ways of calculating area of an irregular shape with the methods of measuring straight distance on a map such as*: using a piece of paper, cotton threat, cotton thread or a pair of divider*. For example, one of the

student wrote correct methods such as; *stripping method, square method* and *a division method*.

In part (d), some students managed to mention one or two essentials of the map which were applied to draw the sketch map, while others misconceived the demands of the question. Hence, they provided the essentials of the map which were used in that map instead of *north direction, scale* and *key*.

In part (e,) some students managed to convert the scale of the given map into statement scale, while others converted it into ratio scale. Moreover, some students misconceived the demands of the question by providing wrong formula for computing a scale such as: $Scale = \frac{Map\ distance}{Actual\ ground\ distance}$ while, others wrote the word *Linear scale* as the answer. For example, one student wrote *1cm to 0.5 km* as a result she/he scored few marks. Similarly other student wrote *one centimeter on the map represents half kilometer on the ground.*

Further analysis indicates that, students who scored from 10 to 15 marks had adequate knowledge in map work and skills of measuring distances of linear features, calculating areas of various shapes, identifying essential of maps and conversion of scales. Most of these students were able to provide correct responses. In part (a), the students were able to measure the length of a river from grid reference 600490 to 640540 in cm, which was *13.1 to 13.5.* They also managed to convert the map distance into actual ground distance by taking *13.1 x 0.5 = 6.6 Km or 13.5 x 0.5 = 6.8 Km.*

In part (b) the students were able to calculate the area covered by Kinyerezi hill in Km^2. They were also able to follow the procedures and applied correct formula in determining the area whereby in the first step they counted the total number of full squares:

Complete squares = *8* or *4*

Incomplete squares = $Incomplete\ square = \frac{15}{2} = 7.5$ or $\frac{19}{2} = 9.5$

Total complete square = *8+7.5 = 15.5* In the second step they calculated the area of one (1) square, the length of each side of the square was *2cm*, and the map scale was *1:50000*. Therefore, the area of 1 square is equal to *side x side = side*^{2}. This implies that the area of 1 square is equal to *1 km x 1 km = 1km*^{2}. Finally they calculated the area covered by Kinyerezi Hill 15.5 x 1 km^2 = 15.5 km^2 or 13.5 x 1 km^2 =13.5 km^2

Further analysis shows that, in part (c) majority of the students were able to provide relevant methods which could be used to calculate the area of the rice farm such as; *tracing methods/geometrical method, stripping methods* and *division method*, while others mixed the methods of calculating area with those of measuring straight distances on maps such as *piece of paper or pair of divider.*

However, in part (d) the students were able to identify two essentials of a map which were not used to draw the sketch map provided such as; *North direction, key, map identification (series, sheet, edition), publisher and date of publication, latitudes and longitudes* and *conversion table.*

Nevertheless, in part (e) they were able to convert the given scale into statement scale by giving relevant formula such as;

$;Scale = \frac{Map\ distance}{Actual\ ground\ distance}$

They further put a given scale into statement scale

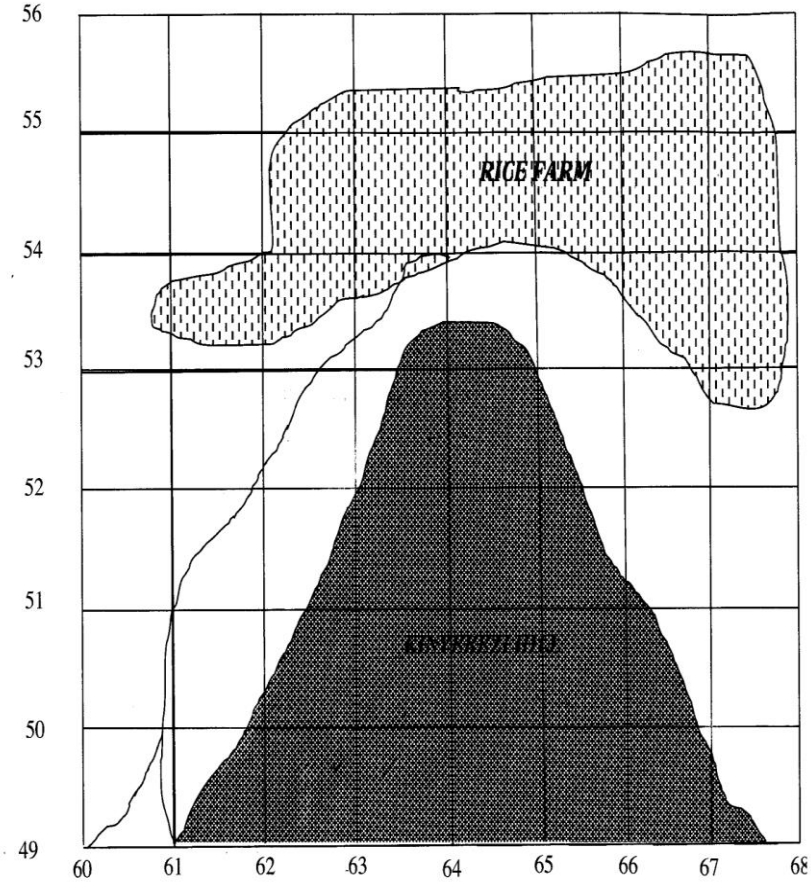
Actual ground distance$\frac{50000}{1000000} \times 1km$

Ground distance = 0.5 Km

Therefore, the statement is *one centimeter on the map represents half a kilometer on the ground*. However, there were variations in the quality of their explanations, which resulted into disparity of the individual scores. Extract 6.2 represents a sample of a good response.

6. Study the sketch map provided and then answer the questions that follow:

KINYEREZI VILLAGE **1:50,000**



(a) Calculate the length of the river from grid reference 600490 to 640540 in Km.

Soln.

1cm = ½ km | 13·5 x ½ = 6·7 km

13·5 = x ?

∴ length of river is 6·7 km

(b) Calculate the area covered by Kinyerezi hill in Km^2.

Soln.

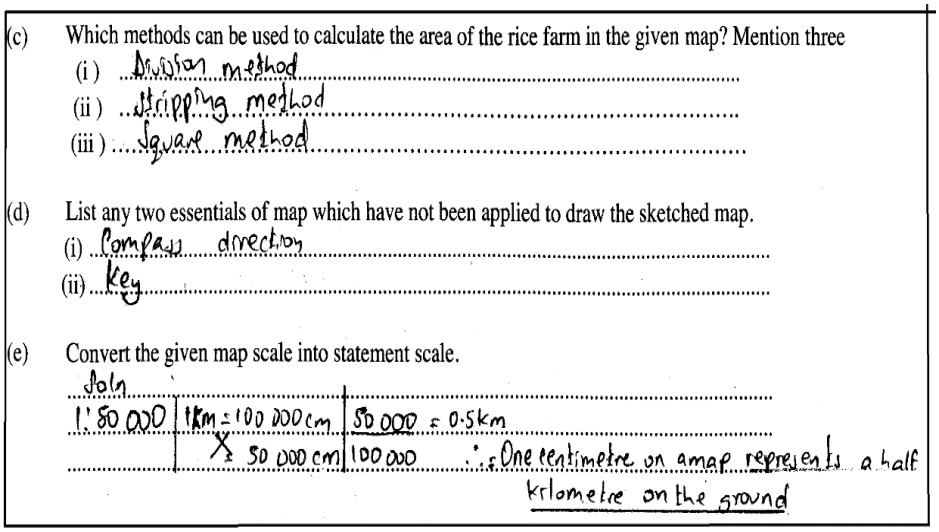
Full squares = 8 | 7·5+8 = 15·5 | 2cm x 2cm = 4cm² | 1cm² = ¼ km²

Half squares = 16 | 4cm² x 15·5 = 62cm² | 62cm² = x ?

2 | 2cm | (1cm = ½ km)² | 62 x ¼ = 15·5 km²

= 7·5

∴ Area covered is 15·5 km²



Extract 6.2 A sample of correct answers for question 6.

2.3 SECTION C: REGIONAL FOCAL STUDIES

2.3.1 Question 7: Sustainable Use of Power and Energy Resources

The question required students to analyse six conditions, which influence the development of Hydro Electric Power production in a given area.

The question was opted by 59,314 (100%) of which 35,945 (60.6%) scored from 0 to 4 marks, 13,875 (23.4%) scored from 10 to 15 marks and 9,494 (16%) scored from 4.5 to 9.5 marks. The performance of this question was average as 23,369 (39.4%) students scored 4.5 marks and above.

The analysis shows that the students who scored from 9.5 to 15 marks had adequate knowledge of the subject matter, and a clear understanding of the demand of the question. Most of these students were able to analyse the six conditions which influence development of Hydro Electric Power. The students were able to provide the correct introduction of Hydro Electric Power as; *the power generated by making use of moving water falling from higher to lower level(water falls) and extracted by means of water wheel or hydraulic turbines.* Also they managed to provide the conditions which

influence the development of HEP such as: *presence of hills or mountains, availability of water sources such as lakes, rivers, springs etc, existence of good market, availability of sufficient capital, availability of science and technology, presence of both skilled and unskilled labour, presence of suitable landscape where the HEP plant can be sited* and *the presence of water reservoirs such as dams for storing water.* They also ended up with relevant conclusion. However, the variations of the scores were determined by relevant descriptions of their points. Extract 7.1 represents a sample of a student with correct answers.

7. Hydro-electric power is power produced by the force of moving water. It is also a renewable source of Energy producing Hydro Electricity. For the development of this sector there different factors to be considered which can influence it. These are as follows.

Availabity of market. If market is available can encourage the producers that we are going to meet a need of certain people in the society and be benefited. Also know where to sell power produced

Advanced technology. This will help in a high production of the Hydro-electric power which is going to be a benefit to the producers. And it can meet the need of many people

Availability of capital. You can not start generating this electricity when you don't have money required for the Controlling of your power station

Presence of Water bodies. As it is termed Hydro electric power, Hydro meaning water you can't generate water electricity if there is no water. So presence of water influence generation of electricity

Steep Slope. The water body should have a steep Slope not flat so as the water to move for the generation of Electricity

Skilled Labour. Presence of skilled labour will influence development of Hydro-electric power because they will use the knowledge they have in generating of electricity

The above are factors which can influence g hydro Electric power production. If those above (points) are available there will be high generation of hydro electric Power. Hydro electric power can stimulate the growth of Industries and other sectors. We can have to make steep Slope on water bodies so as to influence development Hydro electric power

Extract 7.1 A sample of correct answers for question 7.

On the other hand, the students who scored average marks (4.5 to 9.5) had inadequate knowledge of topic on the Sustainable Use of Power and Energy Resources. Therefore, they were able point out some of the conditions, which influence the development of Hydro Electric Power in a given area. Some students were able to provide relevant introduction, but they explained few points without providing conclusions. For example, one of the student mentioned only four conditions which are; *presence of good market, availability of water, presence of hills or mountains* and *availability of enough capital*. She/he therefore ended up with an incorrect conclusion, while another student managed to provide all the six conditions correctly, but provided partial explanations.

Further analysis indicates that, the students who scored from 0 to 4 marks lacked knowledge of the subject matter. This was proved by the incorrect answers provided. Some students could not provide introduction, main body and a conclusion, for example one student wrote challenges facing power and energy production as; *lack of capital, absence of rainfall, absence of transport and communication, lack of skilled labour* and *deforestation* while another one wrote *seasonal rivers, lack of capital, few skilled labour, lack of science and technology, poor marketing process* and *lack of government support*. On the other hand, some wrote the importance of Hydro Electric Power such as; *helps to run machines, improves transport sector, source of foreign currency* and *provides employment* instead of conditions, which influence the development of Hydro Electric Power. On top of that, some students mixed correct and incorrect points *such as; availability of water, availability of capital, availability of skilled and unskilled labour, good transport and communication, political stability* and *availability of government support*. Extract 7.2 represents such poor answers from a script of a student who misinterpreted the demand of the question.

7. Hydro-electric power is the generation of electricity using power turbines. The following are the Condition which influence the development of Hydro Electric power production in a given area

lack of enough capital to invest. This is one of the condition which influence the development of Hydro-electric power this is that for a given area they must have enough capito to invest for example Tanzania in past years almost 5years ago Tanzania was not able to contribute (H.E.P) in the country but now they are able

lack of enough working labour

This is another conditions which influence the development of Hydro-electric power this

7. is that when the Hydro-electric-Power station have not got enough working labour either skilled labour or unskilled labour the station will not developed.

lack of high and Advanced technology This is another condition which influence the development of Hydro electric power This is that when their at the H.E.P power station there is no Advanced tools the power station will be at the low level not developed

Poor Government Support. This is another condition which influence the development of Hydro electric power. This is that Government must support the Project if their is no support they will be no development

lack of proper water management This is another condition which influence the development of Hydro electric power this is that when the project or the power station is placed where the river or dam has not get good water management they will be no development

~~X~~ Their is no reliable market for the excess electricity. This is another condition which influence the development of H.E.P this is that for the excess electricity they must sell to the nearby country

Generally Hydro electric power after the project at mtera dam is over Tanzania will be in back bone

Extract 7.2 A sample of incorrect answers for question 7.

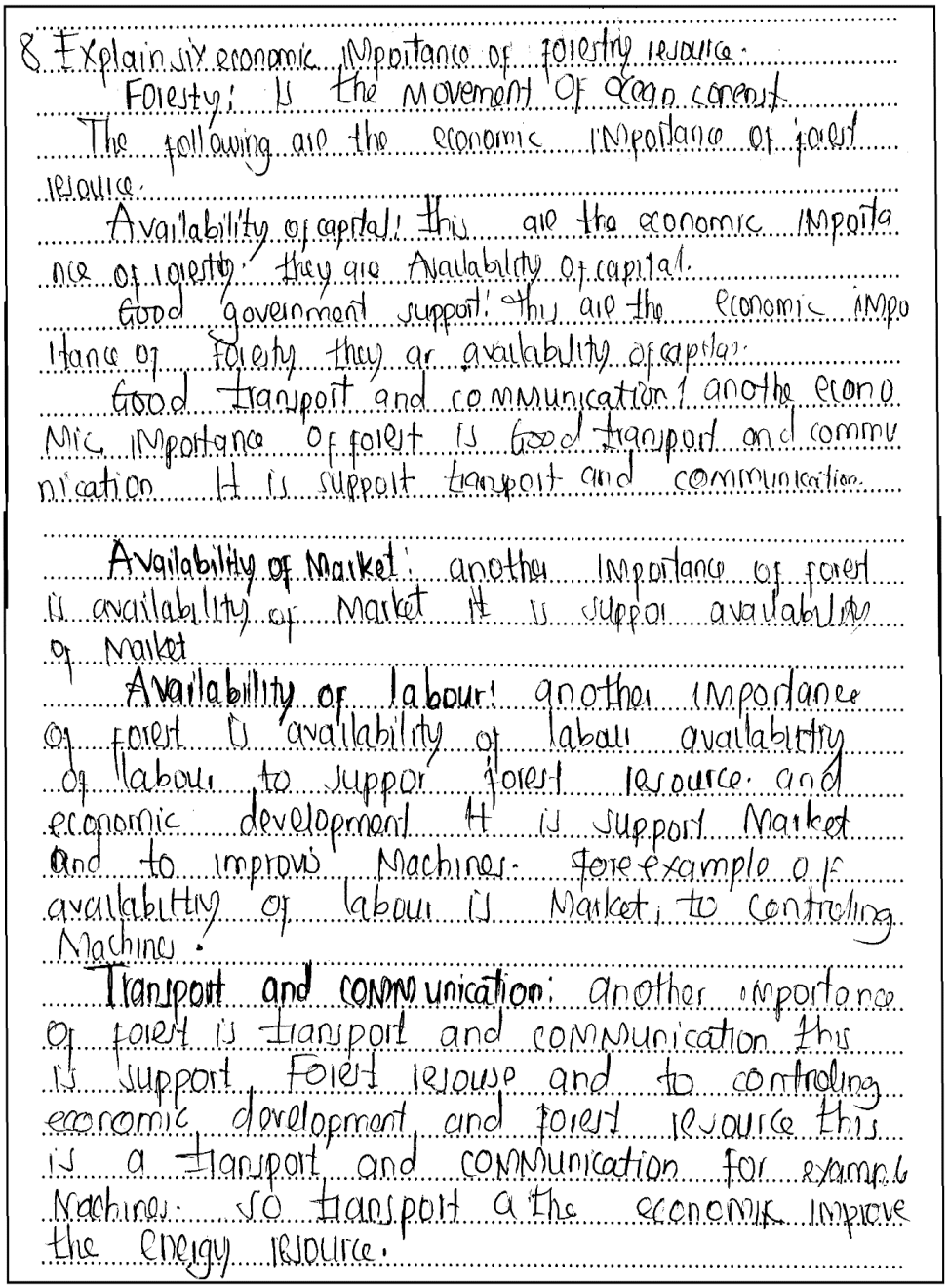
Extract 7.2 shows that the student misconceived the question demand and provided factors affecting Hydro Electric Power development instead of necessary condition which influence the development of Hydro Electric Power HEP such as: *Availability of water sources, existence of good market, availability of sufficient capital, availability of science and technology, presence of both skilled and unskilled labour and presence of water reservoirs.*

2.3.2 Question 8: Sustainable Use of Forest Resources

The question required the students to explain six economic importance of forestry resources. The question was opted by 381,981 (100%) students of which 163,506 (42.8%) scored from 0 to 4 marks, 138,335 (36.2%) scored from 4.5 to 9.5 marks and 80,140 (21%) scored from 10 to 15 marks. The performance of this question was average as 218,475 (57.2%) scored 4.5 marks and above.

Some students who scored from 0 to 4 marks failed to understand the demand of the question while, others had inadequate knowledge and skills of the topic of *Sustainable use of Forest Resources.* For example, some of the student explained importance of forest such as; *source of food, source of bees, source of shadow, prevent strong wind* and *prevent soil erosion* instead of explaining economic importance of forest.

Moreover, some students were able to give relevant introduction and outlined few correct points, while others mixed correct and incorrect points with relevant conclusion. For example, one student provided points such as; prevent *environmental degradation, attracts tourists, source of food, source of vitamin, rise good life standard of people* and *source of timber* while others outlined the relevant points without explanations, thus ended up scoring few marks. Extract 8 represents such a poor performance.


8 Explain six economic importance of forestry resource.
Forestry: is the movement of ocean coreout
The following are the economic importance of forest resource.
Availability of capital: this are the economic importance of forestry: they are Availability of capital.
Good government support: this are the economic importance of forestry they ar availability of capital.
Good transport and communication: another economic importance of forest is good transport and communication it is support transport and communication.
Availability of Market: another importance of forest is availability of market it is suppor availability of market
Availability of labour: another importance of forest is availability of labour availability of labour to suppor forest resource and economic development it is support Market and to improve Machines. forexample of availability of labour is Market, to controling Machine.
Transport and communication: another importance of forest is transport and communication this is support Foiest resouse and to controling ecconomic development and forest resource this is a transport and communication for example Machines: so transport a the economic improve the energy resource.

Extract 8.1 A sample of incorrect for question 8.

In extract 8.1, the student explained factors influencing the development of forest, instead of economic importance of forestry resources such as: *protection of water resources, forest serve as a tourist attraction, environmental*

conservation, supports wildlife conservation sites, provision of employment opportunities, navigation activities in water bodies, agro-forestry activities, generation of government revenue and trading activities such as lumbering

On the other hand, the students who scored average marks from 4.5 to 9.5 had inadequate knowledge on the economic importance of forestry resources, hence they were able to understand the demands of the question. The student's answers showed that some of them were able to provide relevant introduction, explained partially all the points and ended up with relevant conclusions. Others failed to exhaust the required number of points, which hindered them to score higher marks. For example, one student was able to provide relevant introduction, though explained all points partially such as; *attracts tourists, source of timber, support the life of wild animals, source of income, provide employment* and *source of bees,* and ended up with a relevant conclusion.

Students who scored from 10 to 15 marks had adequate knowledge on the economic importance of forestry resources. Moreover, the majority of students in this category had good essay writing skills. These students were able to provide relevant introduction such as; *Forestry as the management of forestlands for maximum yield of forest resources and benefits.* Furthermore, they managed to explain six economic importance of forestry resources such as; *protection of water resources, forest serve as a tourist attraction, timber industry has stimulated the development of transport networks, supports wildlife conservation sites, generation of government revenue, provision of employment revenue, agro forestry activities such as bee keeping and crop cultivation can raise economic status of people around the area, trading activities such as lumbering* and *navigation activities in water bodies,* and they ended up with relevant conclusion. Strengths and clarity of explained points determined the variation of their scores. Extract 8.2 shows such a good answers.

8. Forest is an extensive area of land with undergrowth covering with many trees. Forestry is the process of managing forest resources while forestry resources are resources obtained from forests. Many items are made out of forest resources including furnitures and also other things like medicines come from forest. In that fact forests plays a great important role in economic status of development. The following are the economic importance of forestry resources in our environment.

Firstly, forestry resources are the source of employment opportunities. Many people are employed on forestry wether directly or indirect. For example, people are employed directly on forestry as forest managers and officers while others are indirectly employed such as carpenters making furnitures. The employment brings income in the family and let childrens get education. Thus, resources are importance in the improvement

8 of standard of living.

Also, helps to earn foreign currency. The government get foreig money after selling the resources like timber and medicine as well as natural food obtained from forest which helps to increase the countri economic status. Also through visiting forestry for recreation the forei money from the foreigners is used.

Moreover, forestry resources are useful as raw materials. Industries need raw materials for manufacturing of various products. Forexample, the barks of trees are used for making rubber and also papers are obtained from forests as forest resources. The raw materials are needed for the constru of ways and bridges such as wood. Timber is used for building house and as the item material for furnitures.

In addition, they helps in the attraction of tourists. There are so forests with unique characteristics of having a certain kind of species and plants which cannot be found in any place of that country such a count like Tanzania, at Gombe game reserve has unique characteristics of having chimpazee. Tourists are attracted by that species as need to understand more about those species.

Ontop of that, the resources are important in provision of source of energy. Forests produce products like woods which are used to make fire especially on household areas. About 9% of wood forest resources is used as fuel in all over the world due to the presence of biogas. This ki of fuel is mainly used in Africa where technology is not very highly impro especially in rural areas.

Lastly, helps and important in the improvement of infrastructur Infrastructures are important so as to ensure the proper conduction of trade and commerce. Forestry recources have to be transported to industry manufacturing therefore good transport and communication to the place wher products are to be transported, are highly need. Hence, forestry influence the availability of good transport and communication network.

Generally, forest resources are economically very important because facilitates many activities including manufacturing, and transp

Extract 8.2 A sample of correct answer for question 8.

2.3.3 Question 9: Transport

In this question, the students were required to elaborate six problems of water transportation.

The question was opted by 197,830 (100%) students. Of all, 173,178 (87.5%) scored from 0 to 4 marks 18,903 (9.6%) scored from 4.5 to 9.5 marks and 5,749 (2.9%) scored from 10 to 15 marks. The performance in this question was poor as 24,652 (12.5%) students scored 4.5 marks and above. Figure 6 illustrates the students' performance for this question.

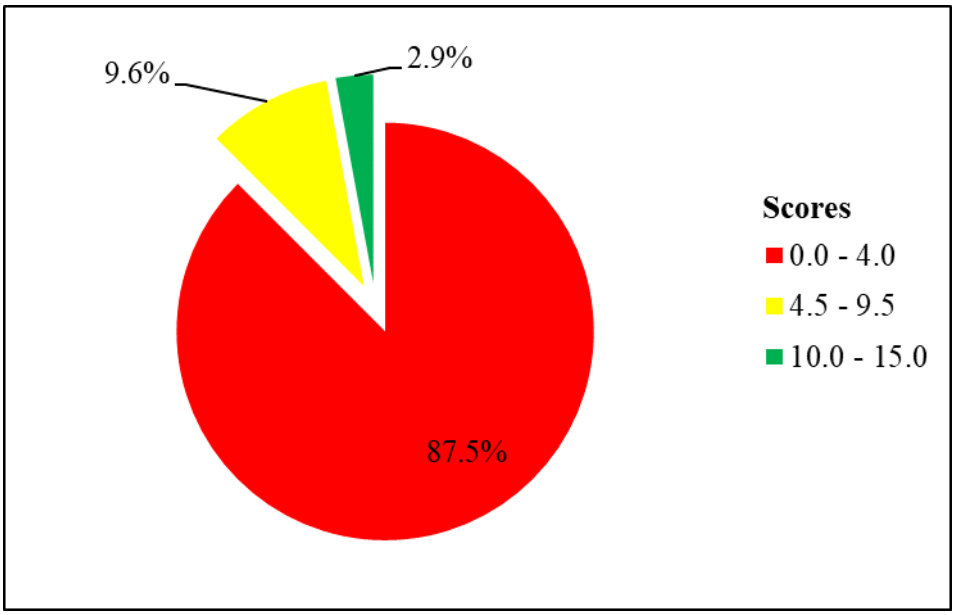


Figure 6: *Students' performance for question 9.*

The analysis indicates that the students who scored high marks (ranged from 10 to 15) were able to understand the demands of the question, they demonstrated adequate knowledge on problems of water transportation. These students were able to provide relevant introductions such as; *water transport includes lakes, big rivers and ocean transport and is the cheapest of all forms of transport*. Also, they managed to elaborate problems of water transport such as; *river regime, presence of dangerous animals like*

crocodile, hippopotamus, poisoned snake etc, presence of water falls in some rivers, ships crossing big water masses with no inhabitation, ocean currents harm ships and sometimes cause death of people when they sink, costs are high in modifying routes, dredging and marking channels, nature of rivers, traditional beliefs, competition from other types of transport such as land transport, high risks and *most of rivers are located in remote areas.* Moreover, they ended up with relevant conclusions. The strengths of their answers varied leading to have different scores. Extract 9.1 shows a sample of a good answers from one of the student.

9/ PROBLEMS FACING WATER TRANSPORT

Water transport refers to the movement of people or goods through water example: Through boats, ships, ferries, elhows and others, Water transport faces a lot of problems when being operated.

The following are problems facing water transport

Shallowness of the rivers: Most rivers are not navigable mostly because they are not deep but they are shallow and since they are shallow transporting activities cannot be carried out because it is impossible to use boats, elhows or ships on shallow water and hence transporting activities are limited and hindered.

Remoteness of the areas: Most areas where transporting activities can take place nowadays are remoted areas meaning that they are placed in villages and places where transporting activities by the use of boats, ships, elhows and others cannot take place and hence transporting activities cannot take place.

Growth of vegetation: Areas where transport activities through water can be carried out are hindered due to growth of vegetation in that particular area example hyacinth plants and water weeds are good examples of vegetation which growth of their kind takes place on water and hinders transport.

Presence of rapid waterfalls: Presence of rapid waterfalls can hinder transport activities since waterfalls can cause severe injuries and even death and this implies that transport activities on waterfalls should not be carried out so as to avoid the injuries and death of people and hence transportation is hindered.

Presence of wild animals: Another problem is presence of wild animals on rivers, these wild animals may include, hippos, crocodiles, alligators which may harm the people carrying out transport activities on that particular river and hence transport activities will not be carried out and water transport is hindered.

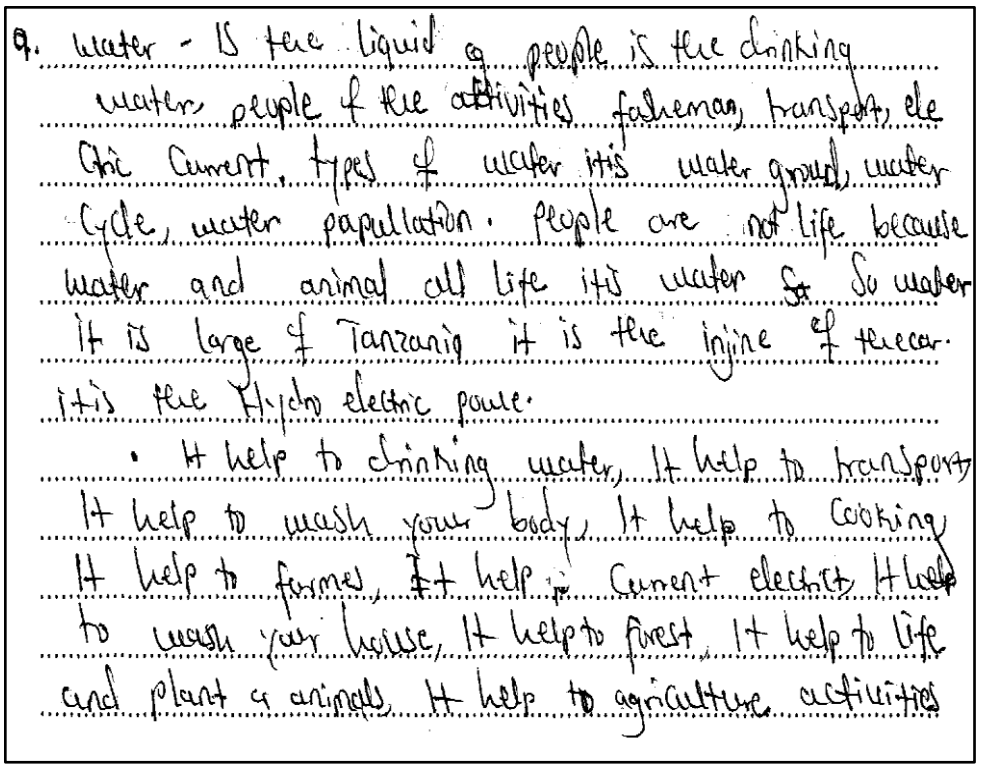
Presence of economic activities that take place on the water bodies: Different economic activities such as fishing and extraction of petroleum from rivers or from larger water bodies may take place on that particular water body and hence water transport will be hindered on that area.

Conclusively water transport is very important since it enables easy movement of people and goods to another area and hence these problems can be removed if there is good cooperation between the government and its people.

Extract 9.1 A sample of correct answer for question 9.

Students who scored from 4.5 to 9.5 marks had some strengths and weaknesses in their answers. This showed partial knowledge on the subject matter, but they were able to point out problems of water transport with relevant introductions and conclusions. However, they were incapable of scoring high marks because of inadequate explanations of the points. Some of them provided partial elaborations, which affected their performance as well as their scores. For example, one of the students provided a partial introduction of water transport; *presence of water falls, ocean currents, high costs* and *traditional beliefs*, with partial conclusion.

Further analysis indicates that, the students who scored from 0 to 4 marks revealed that they had limited knowledge on the concept of water transport. Some of them misconceived the demands of the question, as a result they provided irrelevant introductions, incorrect elaborations and conclusions. For example, one of the students outlined the importance of transport as; *provides employment, improve standard of living, source of foreign exchange* and *facilitate transportation* instead of problems of water transport. However, some understood the demands of the question but they managed to provide partial elaborations of the points, mixing correct and incorrect points. For example, one of the students gave relevant introduction with partial elaborations of points such as; *high costs, presence of rocks* and *presence of waterfalls* without a conclusion. Extract 9.2 illustrate such poor answers.


9. water - is free liquid a people is the drinking water, people of the activities fahemen, transport, ele the current, types of water itis water ground, water cycle, water papullation. people are not life because water and animal all life itis water & so water it is large of Tanzania it is the injine of the car. itis the Hydro electric powe.
• It help to drinking water, It help to transport It help to wash your body, It help to Cooking It help to farmes, It help in Current electrict It help to wash your house, It help to forest, It help to life and plant & animals, It help to agriculture activities

Extract 9.2 A sample of incorrect answers for question 9.

Extract 9.2 shows that the students lacked skills in essay writing, with poor English Language command. He/she also failed to understand the demand of the question. The student wrote different words related with water such as: *water is a liquid, drinking water, types of water, water cycle, water pollution, it help in drinking water, it help in transport, it help in wash your body, it help in cooking, in farms, electricity, wash house, help to forest, help to life and plant animals, help to agriculture* instead of problems of water transport such as; *river regime, presence of dangerous animals in some water bodies, presence of waterfalls, ocean currents and high cost in maintenance.*

2.3.4 Question 10: Agriculture

The question required the students to explain six problems affecting the development of agricultural activities in Tanzania. The question was

attempted by 388,703 (100%) students, and the general performance was average as 241,205 (62.1%) scored 4.5 marks and above. The analysis shows that 116,593 (30%) scored 10 to 15 marks, 124,612 (32.1%) scored from 4.5 to 9.5 marks and 147498 (37.9%) scored from 0 to 4 marks.

Students who scored from 10 to 15 marks had adequate knowledge of the subject matter, and understood the demands of the question. These students were able to provide relevant introductions of agriculture; *as the system of farming, which involves cultivation of crops and the rearing of livestock.* Furthermore, they were able to explain the problems affecting the development of agriculture in Tanzania such as; *climate, soil, capital, education, land tenure, relief, pest and diseases, conflicts between farmers and livestock keepers, inadequate infrastructures, price fluctuation i.e. cashewnuts , price, inadequate skilled personnel* and *inadequate agricultural inputs i.e. fertilizers, seeds, insecticides and pesticides.* Moreover, they ended up with relevant conclusions. However, some student had some weaknesses particularly in the introductory part. Some students failed to provide in deep explanations of points, while others explained few points. Variation of their marks was influenced by the strengths and weaknesses of explanations they provided by individual student. Extract 10.1 represents a sample of such a good answer.

Agriculture is a science of keeping livestocks and growing crops. the crops produced can be cash or food crops, there are two types of agriculture large scale and small scale agriculture, large scale involve cultivating or keeping livestock in a large area using advanced technology like ranching and plantation while small scale takes place in a small area 1 to 5 hectares. most Tanzanians depend on agriculture in order to rise their living standards, but there are problems affecting the development of agriculture namely.

Shortage of capital, In Tanzania most agriculturalists lacks capital which is very necessary in agriculture since it is used to buy tools used for cultivation and preservation of livestocks, money to pay wages to labours who work, money to buy chemicals for treating crops and livestocks, also for buying fertilizers, and the money used to transport raw materials from the farm to the market or industries, therefore lack of capital leads to underdevelopment of agriculture.

Poor market, most agriculturalists in Tanzania faces the problem of market, where they can sell their products, and in most cases the one who buys the crops to farmers need to get the products in low prices which bring loss to the farmers, therefore lack of stable market in Tanzania hinder the existence of agriculture.

Shortage of labour, both skilled and unskilled labour are in low supply in Tanzania, where by they play a vital role in agriculture by cultivating, preserving and taking care of the livestock, they transport raw materials from the farms to the industries and markets also they treat crops, so in Tanzania no enough labour for agriculture.

Poor transport and communication system, In Tanzania there is lack of good transport and communication systems where crops and livestocks products like skin, milk are to be transported to the industries for manufacturing processes and to the market for selling, therefore poor transport network hinder development of agriculture.

Poor storage facilities, There is no good storage facilities where the products obtained can be preserved for future use, the fa-

Extract 10.1 A sample of correct answers for question 10.

Most students who scored from 4.5 to 9.5 marks showed inadequate knowledge on the topic, while others failed to understand the demands of the question. Some of these students in this category provided relevant introductions but gave unsatisfactory explanations of the points. Others were able to explain the points but failed to give relevant introductions and a conclusion. For example, one student provided relevant introduction and explained points correctly such as; *shortage of capital, lack of education, climatic problem, poor soil, price fluctuation, lack of skilled labour* and *pest and diseases,* but failed to give a relevant conclusion.

Few students who scored from 0 to 4 marks failed to understand the demands of the question, while others lacked knowledge of the subject matter. For example, one student wrote Agriculture *as the process of cultivating crops only* while another one wrote *agriculture is the science of small scale production and large scale production*. However, some students who scored few marks outlined correct points, but failed to explain the answers. Most students in this group did not provide relevant introductions and conclusions. For example, one student managed to provide relevant introduction with unclear explanations of the points such as; *lack of capital, lack of education* and *problem of climate.* Extract 10.2 is a sample of a poor response.

ESSAY QUESTION NUMBER 10

10 Agriculture is the domestication of animals and of the plants. the following are the problem affecting the development of agriculture Activities in Tanzania

epod is poor transport and communication; if if the place of agriculture it will be and transport and communication if will be no epod transport and communication Crop does not transportation because there is no transport for transportation and the crop does not buybuy because does not transport and communication so in agriculture good transport and communication is very important

Availability of market; if the place of agriculture it will be and good market for buying and selling crops. if will be of good market crops does it buying because there is poor good market for buying and selling crops so market is very important in our agriculture of our environment

Availability of water; if the place of keeping agriculture it will be a water because water is very important to every something water is a uhai because is very important and if you want to get water you will be with very water or keep at the source of water then you can get uhai so water is very good something so water is very importance if you can keep at the place of water or at the source of water so water is very important for every something

Availability of skilled labour; labour is very important because you do keep crop if is labour for doing that work to because labour is very important in agriculture so if do labour work of Agriculture does work ing because there is no labour for doing that work so labour is very important in agriculture

Extract 10.2 A sample of correct answer for question 10.

Extract 10.2 shows that the student provided incomplete definition of agriculture, and explained the factors for development of agriculture, instead of problems affecting the development of agricultural activities in Tanzania such as; *poor climatic condition, poor soil, insufficient capital, lack of agricultural education, land tenure system, poor topography, pests and diseases, lack of market, inadequate agricultural inputs and shortage of labor force.*

3.0 PERFORMANCE OF STUDENTS IN EACH TOPIC

The analysis of student's performance in Geography, in the 2020 FTNA topic wise shows that out of 11 topics assessed, question 3 had the highest performance (95.7%). This was a True/False question constructed from the topics of *Solar system, Weather, Tourism, Agriculture and Map work.* The second well performed question was number (1) which had 78.3 percent. It consisted of multiple-choice items constructed from the topics of *Weather, The Solar System, Map Work and Major Features of the Earth Surface*.

The topics with average performance were *Sustainable use of Forest Resources* with the performance of 57.2 percent, *Agriculture* (48.5%), *Sustainable Use of Power and Energy Resources* (39.4%). The topics with poor performance were *Features of the Earth Surface* (0.8%), *Climate* (11.6%), *Transport* (12.5%) and *Map Work* (16.5%). See the attached summary of students' performance per topic in the *Appendix.* The students' poor performance is presented by red color, average in yellow color and good by green color. The percentage of students' scores ranged from 30 percent or above while below 30 percent was considered as a poor performance.

4.0 CONCLUSION

The level of performance for FTNA, 2020 decreased by 14.06 percent in relation to that of 2019. The analysis shows that the students had good performance in questions 3(95.7%) and 1 (78.3%). The average performance was observed in the questions 10 (62.1%), 8 (57.2%), 7 (39.4) and 2 (35%). However, the students performed poorly in questions 4 (0.85), 5 (11.65), 9 (12.5%) and 6 (16.5%)

The analysis reveals that the poor performance in some topics was caused by lack of knowledge and skills in map reading, measuring, calculating, poor skills in reading and interpreting statistical information. Other factors were inability of students to identify the demand of the questions and poor proficiency in English Language that affected effective presentation of the correct answers. However, some students demonstrated knowledge and showed good proficiency of English Language and essay writing skills.

5.0 RECOMMENDATIONS

In order to improve the performance of the students in the Geography subject in the future assessment, it is recommended that;

(a) Teachers should build and develop student's habit of reading questions carefully in order to identify the demands before attempting them. This will eradicate the problems of misinterpreting the questions to the majority of students.

(b) Teachers and students are advised to direct and give more efforts during the teaching and learning process of the topics of *Map work*, *Transport*, *Climate* and *Features of the Earth's Surface* because they give challenges to most students.

(c) The teachers should train or teach students how to read and interpret map information, and statistical information. This will help them to provide correct information required in different types of questions.

(d) Teachers should employ varieties of appropriate teaching and learning techniques to facilitate effective learning. For example, use of group discussions and group work assignment questions and answers so as to enable students to acquire adequate knowledge and skills in Geography. This is particularly in Map work (interpreting, calculating and measuring), Features of the Earth's Surface, and on Climate (reading statistical information and interpreting) where the majority of students failed.

(e) Teachers should encourage students to read both fiction and non-fiction books in order to improve their English Language proficiency in writing. This will help them organise and present meaningful answers specifically to the questions, which require adequate illustrations or clarifications of the answers.

Appendix

Summary of the Students' Performance topic Wise

013- GEOGRAPHY

S/N	Topic	Question number	Percentage of the students who scored an average of 30% and above	Remarks
1.	Solar system, Weather, Sustainable tourism, Agriculture, Map work	3	95.7	Good
2.	Weather, Solar system, Map work, Features of the earth's surface	1	78.3	Good
3.	Sustainable use of forest resources	8	57.2	Average
4.	Agriculture	2 &10	48.5	Average
5.	Water management for economic development	7	39.4	Average
6.	Map work	6	16.5	Poor
7.	Transport	9	12.5	Poor
8.	Climate	5	11.6	Poor
9.	Features of the earth's surface	4	0.8	Poor