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

CANDIDATES' ITEM RESPONSE ANALYSIS REPORT ON THE ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION (ACSEE) 2022

GEOGRAPHY

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113 GEOGRAPHY

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FOREWORD

The report on the Candidates' Item Response Analysis (CIRA) for the 2022 Advanced Certificate of Secondary Examination (ACSEE) for Geography subject has been prepared by the National Examinations Council of Tanzania (NECTA). The aim of this report is to provide feedback to different educational stakeholders including; students, teachers, parents, education administrators, school managers, policy makers and the general public on the performance of candidates in Geography subject. It also aims to show the extent to which the instructional goals and objectives were met. The National Examinations Council of Tanzania believes that, this report shall serve as a basis for enabling all educational stakeholders to identify proper measures to take in order to improve the candidates' performance in future examinations administered by the Council.

The analysis shows that the general performance of the candidates on this subject was good (69.2%). The good performance was observed in 8 out of the 13 topics examined. The candidates had good performance in the following topics; Agricultural Development, Sustainable Fishing, Population and Development, Study of Soils, Transport and Communication, Manufacturing Industries, Environmental Friendly Tourism and Water Masses. However, the candidates had an average performance in the following topics; The Dynamic Earth and Consequences, and Simple Survey and Map making, while the weak performance was observed in the Field Research Strategies, Space Dynamics and Topographical Map Interpretation topics.

Factors that may have contributed to the candidates' higher performance in this examination include; the ability to understand the demands of the questions, having basic knowledge of the subject matter, possessing skills in computing, good mastery of the English Language and essay writing skills. The candidates who scored lower marks depicted contrary attributes. In this report, the analysis of each question has been done, and different categories of information have been shown by figures and graphs.

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

Athumani S. Amasi
EXECUTIVE SECRETARY

1.0 INTRODUCTION

This report intends to evaluate the performance of candidates in Geography subject on the Advanced Certificate of Secondary Education Examination (ACSEE) 2022. The Geography examination consisted of two papers (Paper One and Paper Two).

Paper One consisted of two sections; A and B, with a total of seven (7) questions. The candidates were required to attempt five (5) questions. Section A had three (3) questions from the following topics; *Simple Survey and Map Making, Field Research Strategies* and *Topographical Map Interpretation*. The candidates were required to choose two (2) questions. Question number 1 was compulsory. Section B has four (4) questions which were set from the following topics; *Study of Soils, Space Dynamics, Dynamic Earth and Consequences* and *Water Masses*. The candidates were required to answer any three (3) questions from this section.

Paper Two also had a total of seven (7) questions which were set from the following topics; *Population and Development* and *Regional Focal Studies.* Two questions were set from the topic of *Population and Development. The* 5 questions were set from these subtopics; *Sustainable Fishing, Environmental Friendly Tourism, Manufacturing Industries, Transport and Communication* and *Agricultural Development.* The candidates were required to attempt a total of five (5) questions, again, question number one (1) was compulsory.

This report provides analysis on the performance of the candidates in each question by showing what the candidates were required to do, as well as the strengths and weaknesses of their responses. Samples of the candidates' answers have been extracted from their scripts, and are on the display to illustrate their responses. In the analysis, the performance in each topic is ranked as weak, average or good if the performance of candidates' scores lies in the range of 0 to 34, 35 to 59 and 60 to 100 percent respectively. The candidates' performance has been summarized in the appendix whereby green, yellow and red colours have been used to represent good, average and weak performances respectively.

A total of 46,866 candidates sat for the ACSEE 2022 Geography subject out of which 46,635 (99.87%) passed while 59 (0.13%) candidates failed. Generally, the performance of the candidates in the Geography Examination 2022 decreased by 0.05% compared to that of 2021 in which 99.92% of candidates passed while 0.08% failed.

It is expected that the report will be useful to all educational stakeholders. It will also enable teachers and students to improve the teaching and learning processes in the Geography subject.

2.0 ANALYSIS OF THE CANDIDATES' PERFORMANCE IN EACH QUESTION

The Advanced Certificate of Secondary Education Examination (ACSEE) in Geography subject is designed to test the candidates' ability to grasp and apply knowledge in various situations. It also tests the ability to reason, demonstrate, analyse and interpret various Geographical phenomena such as*; Survey, Field Research, Map, Soil, Space Dynamic, Dynamic Earth and Consequences, Water Masses* and *Regional Focal Studies*.

2.1 113/1 GEOGRAPHY PAPER ONE

Section A: Simple Survey and Map Making, Field Research Strategies, and Topographical Map Interpretation Topics

2.1.1 Question 1: Simple Survey and Map Making

Candidates in this question were required to study carefully the information given and then answer the questions that followed. The information was "*A team of surveyors moved from point A to B marking an angle of 45^0 and a distance of 400 m, from point B to C marking an angle of 100^0 and a distance of 300 m, from point C to D marking an angle of 60^0 and a distance of 450 m and lastly from point D to E marking an angle of 80^0 and distance of 500 m.*

The question consisted of five parts (a), (b), (c), (d) and (e). The candidates were required to; (a) tabulate the information with its back bearings, (b) plot the traverse using a scale of 1:10000 or 1cm represents 100 m, (c) put the data from the traverse into the double entry column book sheet, (d) use the traverse plotted in (b) to explain five possible causes of errors , for (e) show how to fix the errors in (d) in five points. This question was compulsory and carried 25 marks.

This question was was answered by 46,866 (100%) candidates. The general performance was average since only 16,689 (35.6%) candidates who attempted it scored 9 marks or above. Data analysis showed that 3,479 (7.4%) candidates scored from 15 to 25 marks, 13,210 (28.2%) scored from

9 to 14.5 marks and 30,176 (64.4%) scored from 0 to 8.5 marks. Figure 1 illustrates the performance for this question.

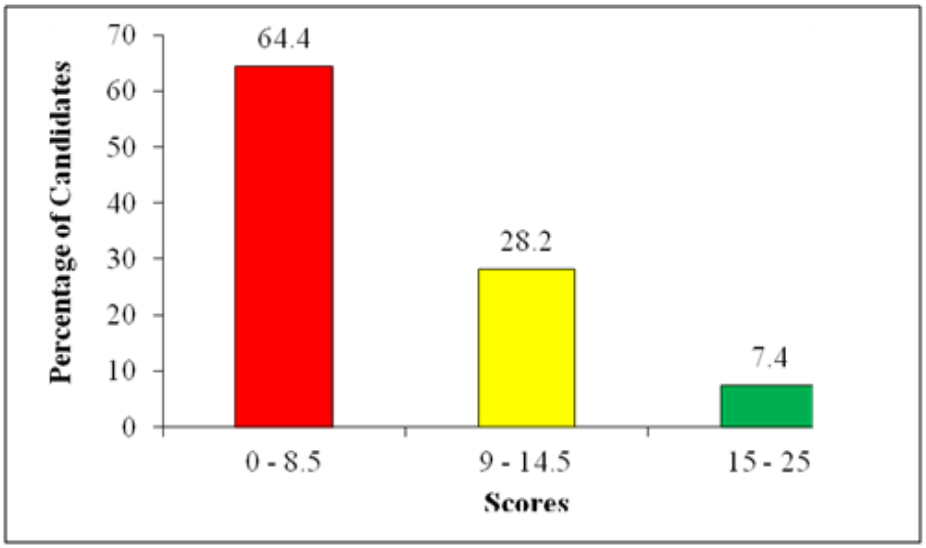


Figure 1: *Candidates' Performance for Question 1*

Analysis showed that, 3,479 (7.4%) candidates who scored from 15 to 25 marks had good knowledge of Simple Survey and Map Making topic, particularly on how to tabulate, plot and make double entry column book sheet. Also, they were aware on the causes and ways of reducing errors in surveying processes.

Some candidates scored higher marks because in part (a), they were able to tabulate the information with its back bearing by using the scale of 1:10000 or 1cm represents 100 m. In the first step, they were able to change the distance from meters into centimeters. Also, they managed to find the back bearing by taking the forward bearing provided and add 180^0 (FB + 180^0 = BB).

For example, one candidate provided correct responses as follows;

Leg / Station / Line	***Forward Bearing***	***Backward Bearing***	***Distance in meters***
AB	45^0	225^0	*400*
BC	100^0	280^0	*300*
CD	60^0	240^0	*450*
DE	80^0	260^0	*500*

Also, they changed the distance given from meters into centimeters using a scale of 1:10000 or 1cm represents 100 m as follows;

(i) Step 1: Change the distance from meters into centimeters

AB: 1cm = 100 m
x = 400 m
= 4 cm

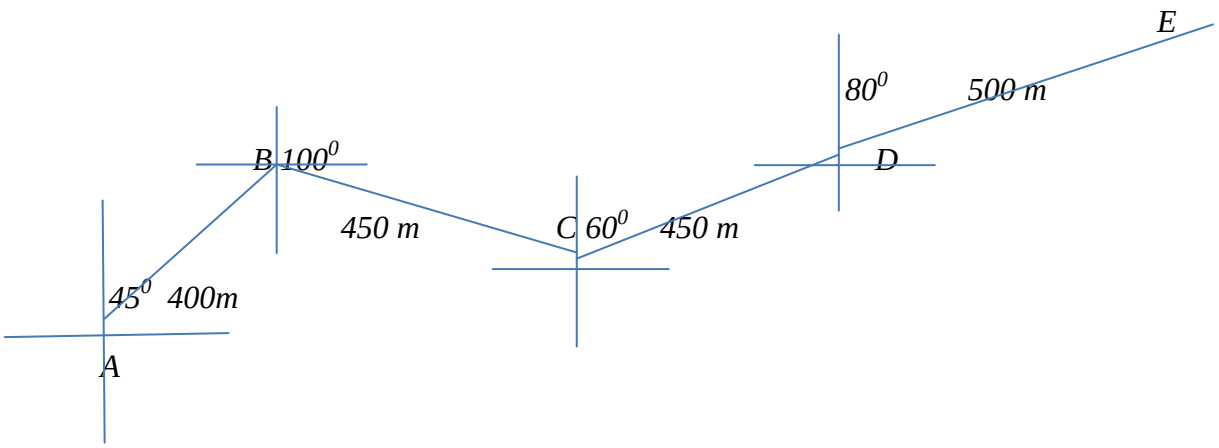
BC: 1cm = 100 m
x = 300 m
= 3 cm

CD: 1 cm = 100 m
x = 450 m
= 4.5 cm

DE: 1cm=100 m
x=500 m
= 5 cm

Leg / Station / Line	***Forward Bearing***	***Backward Bearing***	***Distance in Centimeters***	***Distance in Meters***
AB	45^0	225^0	*4*	*400*
BC	100^0	280^0	*3*	*300*
CD	60^0	240^0	*4.5*	*450*
DE	80^0	260^0	*5*	*500*

In part (b) they plotted the traverse using the forward bearings and the distance in centimeters. For example, one candidate wrote;



In part (c), they located the data from the traverse into the double entry column booking sheet. For example, one candidate wrote;

260º 80º	E 500m D	260º 80º
240º 60º	450m C	240º 60º
280º 100º	300 m B	280º 100º
225º 45º	400 m A	225º 45º

In part (d), they explained correctly the possible causes of errors. For example, one candidate wrote;

(i) The presence of local attractions materials in the surveyed field such as aluminum, iron and zinc.

(ii) Wearing of metal materials such as steel watches, bangles and necklace.

(iii) Inaccurate reading and recording of the book.

(iv) Fault in the instrument used, for instance the bending of the needle, not being at the centre of the graduated circle.

(v) Inaccurate centering of the magnetic compass over the station occupied.

(vi) Magnetic changes in the atmosphere influenced by storms or clouds.

(vii) Irregular variations due to magnetic storms, earthquakes, sun spots, lunar perturbation.

(viii) Nature of the geology of the surveyed area.

(ix) Sluggish of the magnetic needle due to the loss of its magnetism.

In part (e) they explained on how to fix such errors in (d). For example, one candidate wrote;

(i) Avoid areas with local attraction materials like aluminum, iron and zinc.

(ii) Avoid wearing metal materials such as steel watches, bangles and necklaces.

(iii) Be smart / accurate in reading and recording the book.

(iv) Fix the fault in the instrument used so that the needle is at the centre of the graduate circle.

(v) Centre the magnetic compass accurately over the station occupied.

(vi) Check the atmosphere on a stormy or cloudy day if it is conductive to conduct survey.

(vii) Consult a geologist or information in the surveyed area before conducting survey.

However, their scores ranged from 15 to 25 depending on the strengths and the accuracy of their responses, as some candidates failed to write the correct formula, while others skipped some parts of the question or provided fewer points contrary to the demands of the question. Extract 1.1 represents such good responses for this question.

1. Solution.

(a) Table of Data.

STATIONS	LENGTH	FB	BB.
AB	400m	45°	225°
BC	300m	100°	280°
CD	450m	60°	240°
DE	500m	80°	260°

(b) From scale

1 : 10000

Therefore

Station AB

1 cm = 100 m

? = 400m

= 4 cm

Station BC

1 cm = 100 m

? = 300m

= 3 cm

Station CD

1 cm = 100m

? = 450m

= 4.5cm

Station DE

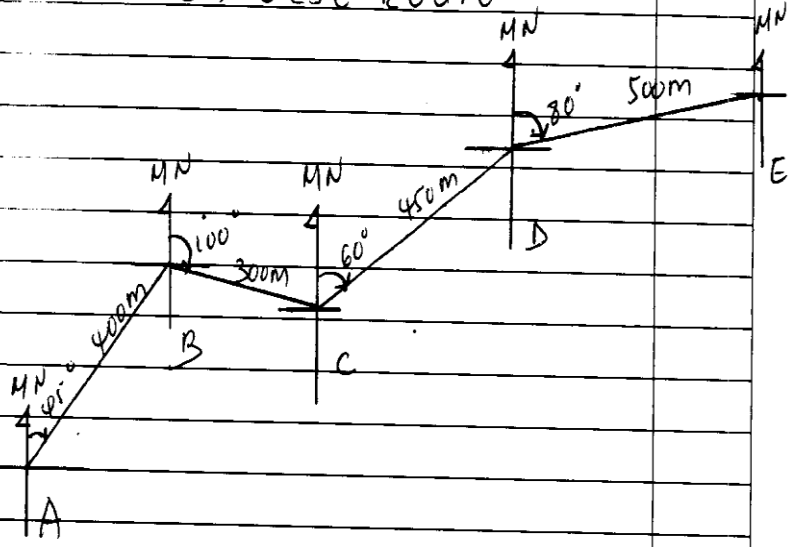
1 cm = 100m

? = 500m

= 5cm.

1. (b) The Traverse line.

THE TRAVERSE ROUTE.



1. (d) Possible of Errors in Prismatic Compass survey are.

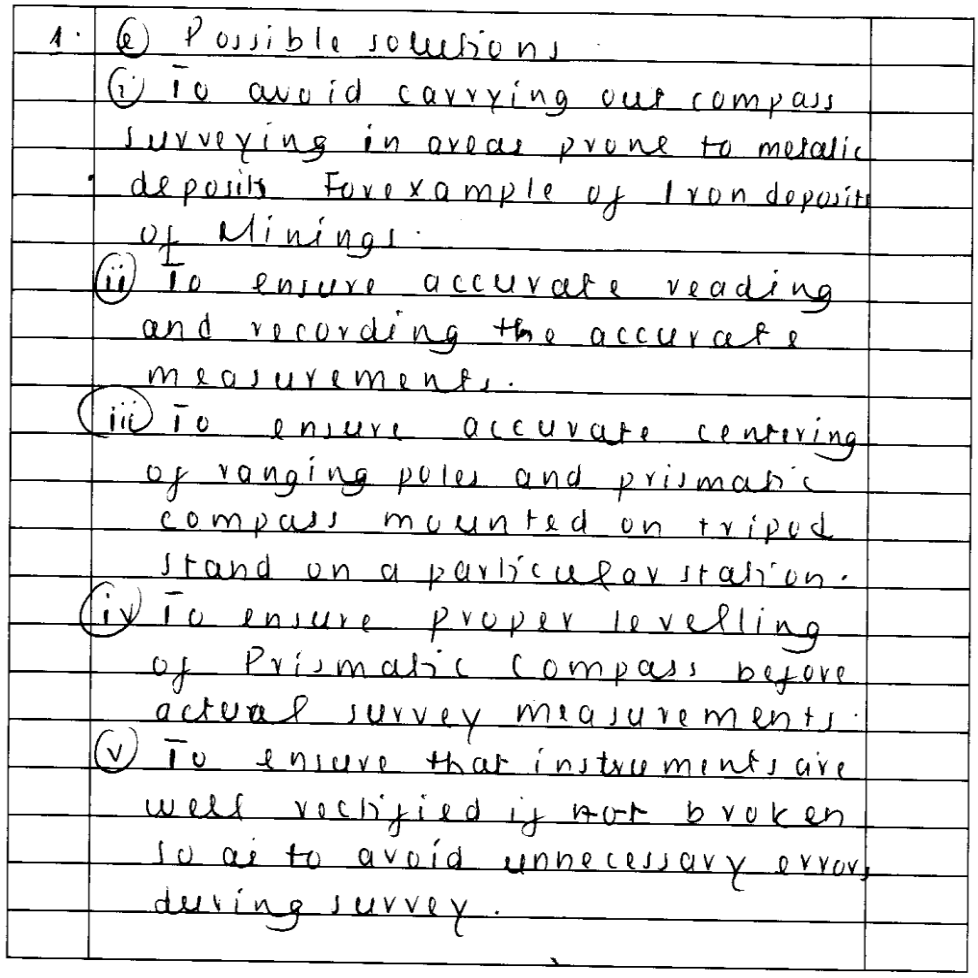
(i) Presence of Metal deposits or Metallic minerals on the area these lead to local attraction whereby the magnetic needle fail to point to the true reading as influenced by metallic materials like watches.

1. (ii) Inaccurate centering of the prismatic compass on a particular station using a plumb bob.
This can led to the occurence of errors because inaccurate centering lead to the failure in reading correct measurement.

(iii) Imperfection in reading and recording the accurate measurement.
Some surveyors fail to read accurate measurement may be due to eye imperfection or by their negligence hence this can lead to errors in a traverse.

(iv) Inaccurate levelling of the of the prismatic compass using the spirit level.
Errors in the plotted traverse can be possibly caused by inaccurate levelling of the prismatic compass mounted on the tripod stand, hence wrong reading can be obtained.

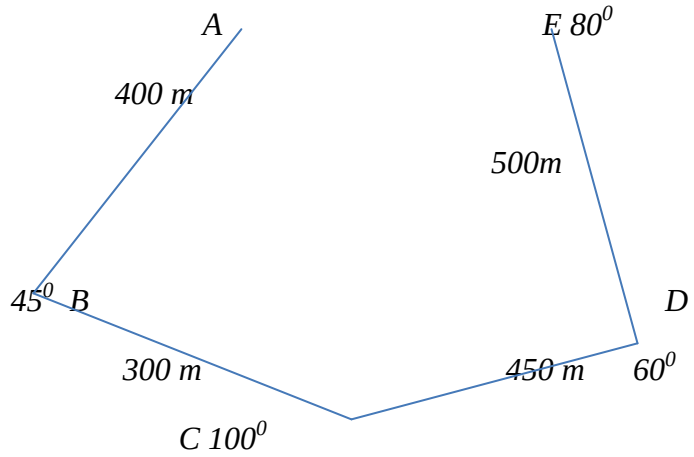
(iv) The failure of the magnetic needle to read the accurate measurement due to lost of its Magnetism.



Extract 1.1: A sample of a correct response for question 1

Furthermore, 13,210 (28.2%) candidates who scored from 9 to 14.5 marks answered correctly few parts of the question. This indicated that some candidates had moderate knowledge on the topic of Simple Survey and Map Making. In part (a), some candidates succeeded to make a table of information with its back bearings. Those candidates changed the distances from meters into centimeters and found the back bearing by taking the forward bearing provided and adding 180^0, while others failed because they took 180^0 - FB instead of FB + 180^0.

In part (b), some candidates used the given scale and calculated distances, but they failed to plot the traverse. For example, one candidate changed the distances correctly from metres into centimeters, but plotted incorrectly the traverse as follow;



In part (c), some candidates put correctly the backward bearing and forward bearing from the traverse into the double entry column book sheet, but they failed to enter the distances. Others provided the double entry column booking sheet without distances.

In part (d), some candidates explained the causes of errors correctly, while others mixed correct and incorrect ones such as; *presence of roads*, *railways* and *settlements.*

In part (e), some candidates explained correctly how to fix the errors in (d). Others provided the ways of overcoming obstacles in chain survey such as; *the use of parallel line and similar triangle method*. He/she failed to understand that these are the ways of overcoming obstacles in chain survey.

Moreover, 30,176 (64.4%) candidates with scores from 0 to 8.5 marks demonstrated a lack of knowledge and skills on the topic of Simple Survey and Map Making. Those candidates failed to put into practice the knowledge of survey in Geography. Few candidates were able to study the given information correctly and provided few correct responses while others were not able. Some candidates managed to tabulate the information, but did not provide back bearings in part (a). For instance, one candidate made a table without back bearing as follows;

Leg / Station / Line	*Forward Bearing*	*Distance in Metres*
AB	45^0	*400*
BC	100^0	*300*
CD	60^0	*450*
DE	80^0	*500*

In part (b), some candidates correctly plotted the traverse using a scale of 1: 10000 or 1 cm represent 100 m and some plotted closed traverse instead of open traverse. In part (c), some candidates located the data from the traverse into the double entry column book sheet while, others recorded both forward and backward bearing in a single column entry sheet. For example, one candidate drew a single column sheet, instead of double column sheet.

In part (d), some candidates provided few causes of errors in survey; some mixed correct and incorrect responses, while others mentioned common errors during the chain survey process. For example, one candidate wrote; *improper arrangement of poles, reading centimetres* instead of *metres and the use of outdated chain or tape,* instead of the causes of errors in prismatic compass survey.

In part (e), some candidates provided ways of fixing the errors in prismatic compass survey. Some mixed correct and incorrect responses, some mentioned methods of conducting plane table survey while others skipped this part of the question. For example, one candidate wrote; *resection, intersection, radiation and traversing survey method*s. The variation of their scores was attributed to the way they responded to the question. Extract 1.2 demonstrates incorrect responses for this question.

1.

(a)

Back Bearing (BB) = 180° − Forward Bearing (FB)

If $FB < 180^\circ$

- A to B, $FB = 45^\circ$

$BB = 180^\circ - FB$

$= 180^\circ - 45^\circ$

$\therefore BB = 135^\circ$

- B to C, $FB = 100^\circ$

$BB = 180^\circ - FB$

$= 180^\circ - 100^\circ$

$\therefore BB = 80^\circ$

- C to D, $FB = 60^\circ$

$BB = 180^\circ - FB$

$= 180^\circ - 60^\circ$

$\therefore BB = 120^\circ$

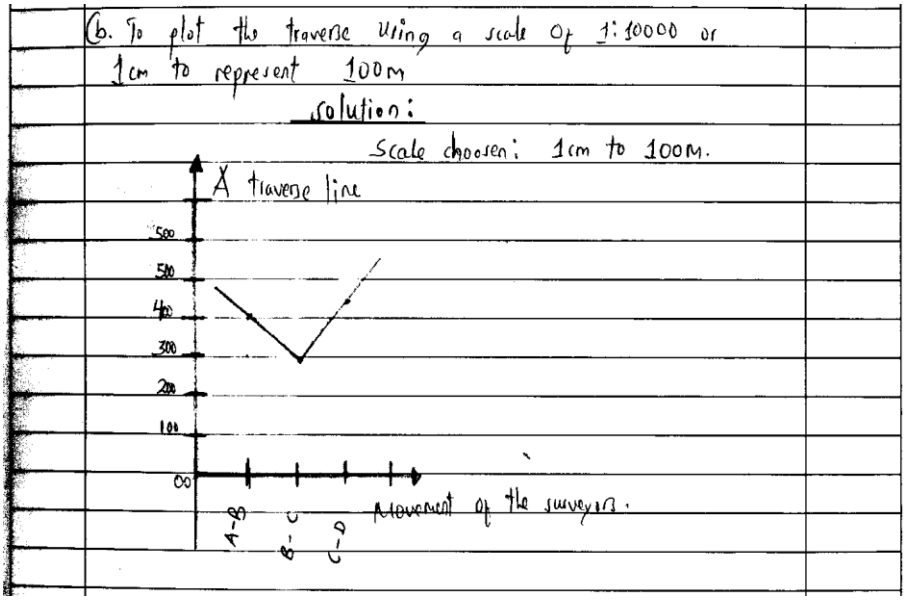
- D to E, $FB = 80^\circ$

$BB = 180^\circ - FB$

$= 180^\circ - 80^\circ$

$\therefore BB = 100^\circ$

Points	Angle (FB)	Distance	Back Bearing (BB)
A to B	45°	400 m	135°
B to C	100°	300 m	80°
C to D	60°	450 m	120°
D to E	80°	500 m	100°



Extract 1.2: A sample of an incorrect response for question 1

In extract 1.2, the candidate in part (a) applied an incorrect formula for calculating back bearing by subtracting the forward bearing from 180^0, instead of adding. The candidate was not aware of the difference between open traverse and line graph as he/she drew a simple line graph instead of the open traverse in part (b).

2.1.2 Question 2: Field Research Strategies

The candidates were given the following statement; "*a quality Geography research study depends on a well and elaborative research proposal*". Then in six points, they were required to *explain the rationale for the quality research proposal in producing reliable research output*. The total marks allocated for this question were 15.

This question was answered by 4,892 (10.4%) candidates. The general performance was weak since only 1,371 (28.0%) candidates scored 5.5 marks or above. Data analysis showed that 688 (14.1%) candidates scored from 9 to 15 marks, 683 (13.9%) scored from 5 to 8.5 marks and 3,521 (72.0%) scored from 0 to 4 marks. Figure 2 illustrates the performance for this question.

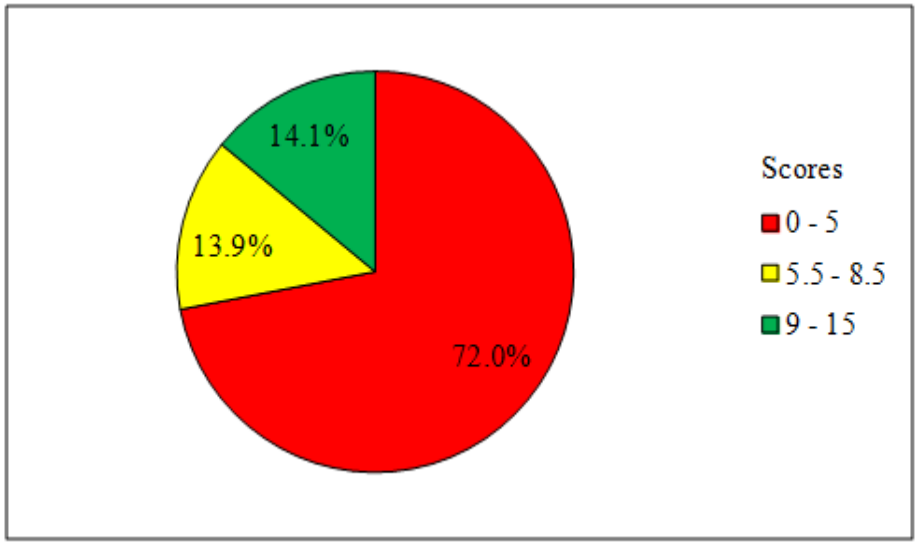


Figure 2: *Candidates' Performance for Question 2*

Further analysis showed that, 688 (14.1%) candidates who scored from 9 to 15 marks revealed knowledge of the Field Research Strategies topic particularly on research techniques. Some of them scored higher marks because they wrote relevant introductions of research proposal. For example, one candidate wrote that; *it is a research plan after identifying the research problem and defining it. The well elaborate research plan must consist of a well stated research problem, clear objectives, well defined research concepts, the research approach, techniques in dealing with data, target population, the time frame and the budget.*

Also, they explained the rationale for producing reliable research output. For example, one candidate wrote;

(i) It helps the researcher to organize ideas on all important issues about the research such as data collection procedure, to suit the study.

(ii) It provides the inventory of what must be done and which materials have to be created in the preliminary stage.

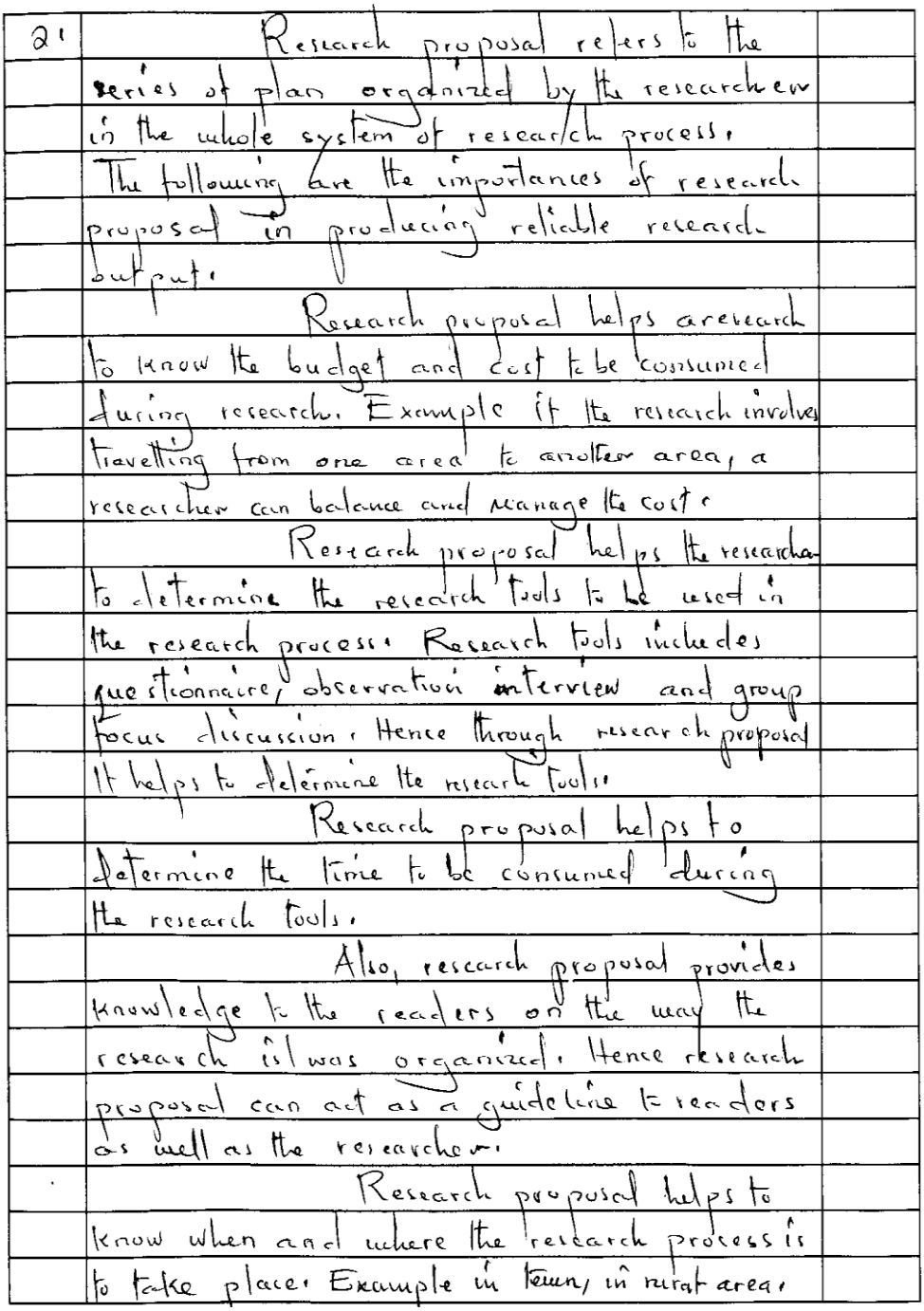
(iii) It paves the way for preliminary recommendation on the research work.

(iv) Time limit in various stages of the research can be alerted since various activities in the research process are structured with time limit.

(v) Cost awareness is well analyzed. Therefore, the researcher will be aware of the existing limits in the expenditure associated to the research.

(vi) It paves the way for improvement based on previous studies.

Likewise, they finally provided relevant conclusions. The variations of their marks were due to the difference in the strengths and accuracy of their responses. Extract 2.1 reveals such correct responses for this question.


2. Research proposal refers to the series of plan organized by the researcher in the whole system of research process. The following are the importances of research proposal in producing reliable research output.

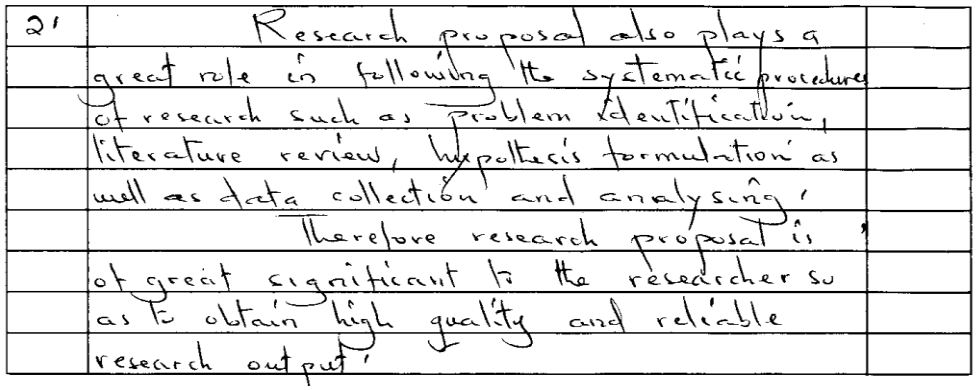
Research proposal helps a research to know the budget and cost to be consumed during research. Example if the research involves travelling from one area to another area, a researcher can balance and manage the cost.

Research proposal helps the researcher to determine the research tools to be used in the research process. Research tools includes questionnaire, observation interview and group focus discussion. Hence through research proposal it helps to determine the research tools.

Research proposal helps to determine the time to be consumed during the research tools.

Also, research proposal provides knowledge to the readers on the way the research is/was organized. Hence research proposal can act as a guideline to readers as well as the researcher.

Research proposal helps to know when and where the research process is to take place. Example in town, in rural area.



Extract 2.1: A sample of a correct response for question 2

On the other hand, 683 (13.9%) candidates who scored from 5 to 8.5 marks had insufficient knowledge and skills on the topic of Field Research Strategies, particularly on research techniques. Some candidates provided relevant introductions of research proposal, but gave out few explanations on the rationale for the quality research proposal in providing reliable research output. Some provided irrelevant introductions with few correct points, while others gave relevant introductions but mixed up correct and incorrect explanations on the rationale for the quality research proposal that would provide the reliable research output. Other candidates explained the criteria for a good research such as; *should be systematic* and *should be logical,* instead of the rationale for a quality research proposal.

Moreover, 3,521 (72.0%) candidates who scored from 0 to 4 marks had inadequate knowledge and skills on the topic of Field Research Strategies, mostly on research techniques. Their weak responses showed that they failed to understand the demands of the question as some of them provided irrelevant introductions with incorrect points on the rationale for the quality research proposal in producing reliable research output. Some of them gave characteristics of a good research instead of the rationale for the quality research proposal while, others wrote introductions without any explanations. For example, one candidate wrote; *should be simple and clear, should be testable, should be precise* and *should be researchable*. This candidate was not aware that these are the characteristics of a good research problem. Another candidate mentioned the characteristics of a good research such as; it *should be systematic, it should consist of chapters, it should start with an introduction, it should consists of main body, methodology and conclusion,* instead of the points related to the rationale for the quality research proposal such as *organization of ideas,*

providing the inventory of what must be done, It paves the way for preliminary recommendation, time limit alerted, cost awareness is well analyzed and paving the way for improvement. Extract 2.2 is a sample of incorrect responses for this question.

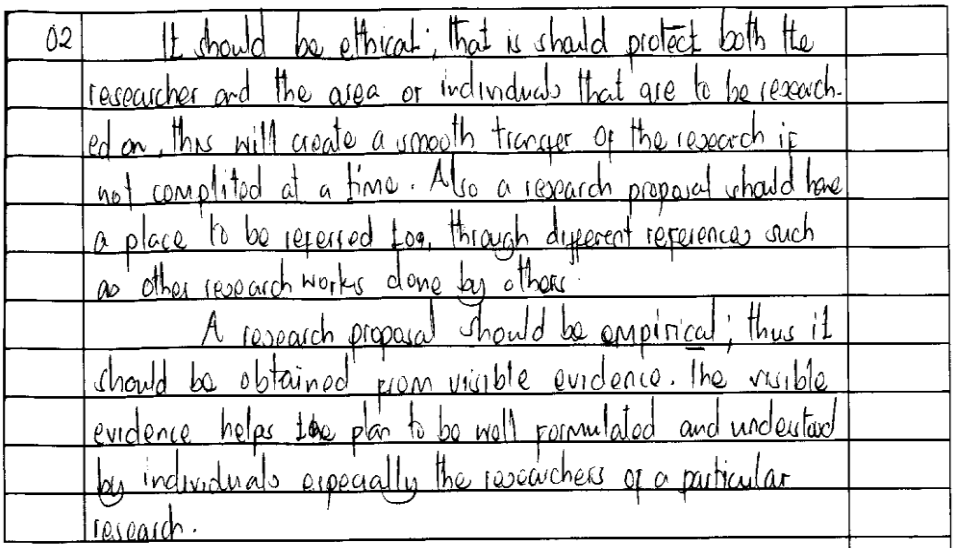
02 A research is a detailed plan on how the research should be done. A research proposal should be made on an appropriate time before the research should be conducted, so as the colleagues on the research ~~prop~~ praces can be aware of the research. The following are the rationale for the ~~ration~~ quality research proposal in producing reliable research output:

A research proposal should be detailed; a good research proposal should be detailed in terms that it's should include all the necessary information that is useful or can be useful during research. Such information include the hypothasis that could be used, the area where the research is to take place and the time, if necessary the participants in the research process.

It should be systematic; a research proposal should follow all the necessary procedures that are required during research, the research proposal should show how the different research procedures are to be conducted and how can they be used to attain a certain achievement of the research.

It should be of clear language; a good research proposal should have a simple language that will make anyone understand easily once read. The clear language does not eliminate the biasness but it reduces some biasness since people are able to understand on what is written on the research proposal.

It should have an objective; also a good research proposal should have an objective thus to carry a goal, maybe after a certain performance of research something should be achieved, so as the research could proceed on smoothly.


02 It should be ethical; that is should protect both the researcher and the area or individuals that are to be research-ed on, thus will create a smooth transfer of the research if not completed at a time. Also a research proposal should have a place to be referred for, through different references such as other research works done by others.

A research proposal should be empirical; thus it should be obtained from visible evidence. The visible evidence helps the plan to be well formulated and understood by individuals especially the researchers of a particular research.

Extract 2.2: A sample of an incorrect response for question 2

In extract 2.2, the candidate explained the qualities of a good research such as*: it should be detailed, it should be systematic, it should be of clear language, it should have objectives, it should be ethical* and *it should be empirical* instead of explaining the rationale for the quality research proposal.

2.1.3 Question 3: Topographical Map Interpretation

Candidates in this question were required to study carefully the map extract of Mto wa Mbu (sheet 53/4) provided and then answer the questions that followed. The question consisted of four parts; (a), (b), (c) and (d). The candidates were required to: (a) use two evidences from the map to propose the type of climate of the mapped area, (b) describe two relief features that are found on the map with relevant examples, (c) describe the site and three functions of Mto wa Mbu township and (d) assume the Magnetic Variation (MV) of Mto wa Mbu as at July 2018 was 120^0 36' W and its True Bearing (TB) was 180^0 44'. If there was annual change of 4' positively and then to: (i) calculate Bearing as at January 2022 and (ii) calculate Magnetic Variation as at January 2022. This question had 15 marks.

This question was answered by 41,940 (89.5%) candidates. The general performance was weak since only 7,856 (18.7%) candidates scored 5.5 marks or above. Data analysis showed that 1,097 (2.6%) candidates scored from 9 to 15 marks, 6,759 (16.1%) scored from 5.5 to 8.5 marks and 34,084

(81.3%) scored from 0 to 5 marks. Figure 3 illustrates the performance for this question.

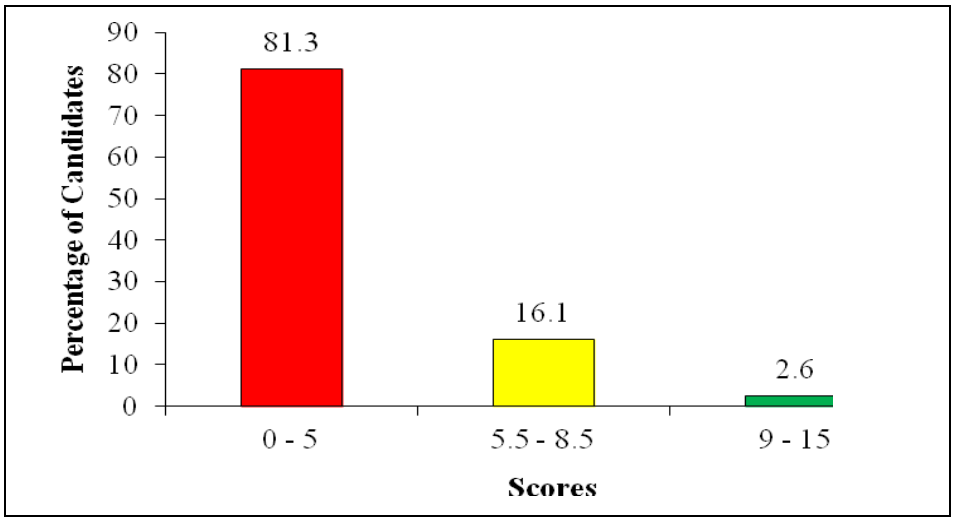


Figure 3: *Candidates' Performance for Question 3*

Further analysis showed that 1,097 (2.6%) candidates who scored from 9 to 15 marks had knowledge on Topographic Map Interpretation topic particularly on identifying the type of climate, describing relief features on map, describing the site, functions and calculating the bearing. Some candidates scored higher marks because in part (a) they managed to identify the type of climate. For example, one candidate wrote: *modified equatorial* and gave some reasons or evidences such as:

(i) It is modified equatorial because its latitude position is 3^0 20', but it has characteristics features of the tropical climate.
(ii) The presence of seasonal swamps in the South eastern part.
(iii) The presence of scrubs to the North, West and South Western part of the mapped area.
(iv) The presence of woodland tree at Mahali pa Nyati indicates moderate rainfall.
(v) The presence of scattered trees in the north eastern part of the mapped area.
(vi) The presence of many seasonal rivers which flow from the northern part of the mapped area towards the South *eastern part of the mapped area. Also this indicates that the area receive high rainfall.*
(vii) The presence of forest around the swamp which indicates that the area receive high amount of rainfall.

In part (b) they described relief features on the mapped area. For example, one candidate wrote:

(i) Ranges of escapements which are Kilima cha tembo at the North West and Mto wa Mbu arranged from North East through central East to the South.

(ii) V-shaped valleys which are found in numerous areas along the escarpment and areas covered by plateau. Also at Mto wa Simba Northern Eastern part of Kilimanjaro and at the Southern Western part as Mto wa Mchanga.

(iii) Plateau which are found in between the escarpments.

(iv) Spurs which are found beside the valleys.

(v) Seasonal swamps which are found near Lake Manyara.

(vi) Depressions beside Mahali pa Nyati to the East.

In part (c), they described the site and functions of Mto wa Mbu township. For example, one candidate wrote:

(i) Site *is the locations of an area with reference to the physical features surrounding it.*

Therefore, Mto wa Mbu township is:

- *Located at the foot of the Mto wa Mbu escarpment in the eastern part.*
- *Located between Mto wa Simba and Mto wa Mbu rivers.*
- *Located beside National Park HQ*
- *Located in the western part of the forest camp site park.*

(ii) Functions of Mto wa Mbu township;

- *Social functions such education, health and religious services and means of communication (post office and telephone).*
- *Political functions such as defense and security due to the presence of the police post and government offices such as the National Park Headquarters.*
- *Economic functions such as tourism, transport and communication due to the presence of roads.*

In part (d), they calculated bearing in;

(i) Magnetic Bearing as at January 2022.

(ii) Magnetic Variation as at January 2022 as follows;

For example, one candidate wrote;
Given data
Magnetic variation (MV1) = 120^0 36'W
Time before change (T1) = July 2018
True Bearing (TB) = 180^0 44'
Annual change = 4' positively.
Time after change (T2) = January 2022
Second Magnetic bearing = required
Second magnetic variation = required

Step 1: They found the MB1 by adding MV since is in the West to TB. For example, one candidate wrote;

- *First Magnetic Bearing (MB1) i.e. MB1 = MV + Tb*
  Since the Magnetic Variation is to the West of True bearing, therefore, MB1 = 120^0
  36' + 180^0 44' = 301^0 20'.
- *First Magnetic Variation: Must be calculated by the rate change of annual (ATXAA) = (T2 – T1) XAA = January 2022 – July 2018 = 3.5 yrs X 4' = 14'.*

Step 2:

- *Second Magnetic Bearing (MB2) = MB1 + Rate change of annual = 301^0 20' + 14' = 301^0 34'*
- *Second magnetic Variation (MV2) = MV1 + Rate change of annual = 120^0 36' + 14' = 120^0 50'.*

However, their scores ranged from 9 to 15 marks depending on the strengths and accuracy of their responses, as well as the exhaustion of all the points demanded by the question. Extract 3.1 is a sample of the correct responses for this question.

03. a/. The climate of the mapped area is Modified Equatorial climate.

Evidences;

i/. Presence with few forests on the mapped area. Example Papyrus swamp around 185225, scrub on the south-western part of the mapped area and few forests example around 160268

ii/. Presence of few water bodies example the seasonal swamp on the southern part of the mapped area which covers around the grid reference 150218.

b/. i/. Valleys.

- This is evidenced by the presence of rivers on the mapped area example Mto wa Mchango, Mto wa Mtindu and Mto wa Mbu on the southern part of the mapped area which direct water to the lake.

ii/. Basins

- This is evidenced by the presence of depressions on the mapped area example the basin on the waterbody (lake) on the southern part of the mapped area, and the depression under the seasonal swamp around 150218

03. c/. → The site of Mto wa Mbu township is at the central and eastern side of the mapped area. It is sited at the plain due to presence of a flat & land which encourages settlement, good climatic condition of the area and drainage of the area as the area is not too swampy and has few rivers passing hence encourage the settlement and construction activities.

→ Functions of Mto wa Mbu township.

i/. Administrative function due to the presence of permanent buildings on the Mto wa Mbu township which can be used for administration. This might involve the governmental actions.

ii/. Social service providing function. This includes education services due to presence of schools such as School (Sch) on 170264, health services due to presence of health centre example on grid refrence 176264

iii/. Residential settlement function. This is due to the availability of settlement on the Mto wa Mbu township example due to the presence of houses along the roads and also nucleated settlement around the permanent building on grid refrence 172270.

03. ii). Given;

- Old magnetic variation (OMV) = 120° 36' W
- True bearing (TB) = 180° 44'
- Annual change = 4' positively
- Time initial = 2018 July
- Time final = 2022 January

Hence;

ii). • Difference in time

$\Delta T = T_2 - T_1$

ΔT = Jan 2022 - July 2018

$\Delta T = 3\frac{1}{2}$ years

• Total rate of change (R)

R = Difference in time x Annual change

$R = 3\frac{1}{2} \times 4'$

$R = 14'$

$R = 0° 14'$

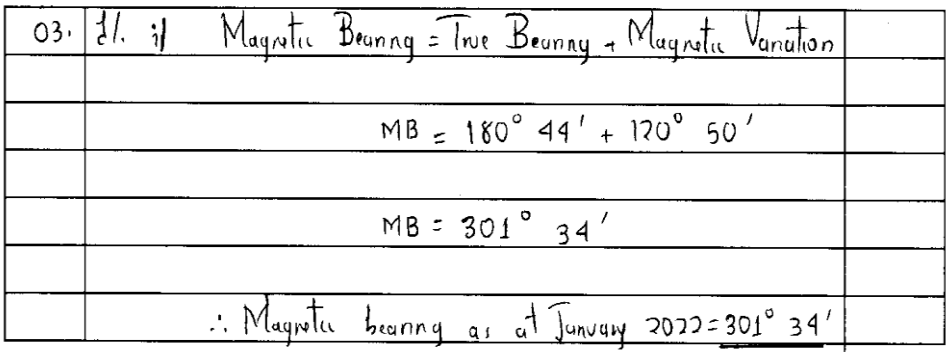
• New Magnetic Variation (NMV);

NMV = OMV + 0° 14'

NMV = 120° 36' + 0° 14'

NMV = 120° 50'

∴ Magnetic Variation as at January 2022 = 120° 50'



Extract 3.1: A sample of a correct response for question 3

On the other hand, 6,759 (16.1%) candidates who scored from 5 to 8.5 marks answered correctly some parts of the question. This indicated that they had moderate knowledge on the topic of Topographical Map Interpretation particularly on the tested items. However, their scores varied from 5 to 8.5 due to the strengths and weaknesses of their responses.

In part (a), some candidates provided the correct name of the type of climate without evidences, while others mentioned the correct type of the climate, but mixed up correct and incorrect evidences. Examples of incorrect evidences were as follows: *presence of few forests due to the presence of low rainfall and low temperature.* Those candidates failed to recognize that these are the characteristics of hot desert climate. Moreover, some candidates gave incorrect answers such as; *Semi-arid climate, Hot desert, or Mediterranean.* These revealed that they were not aware of the locations and typical characteristics of the climatic types.

In part (b), some candidates identified relief features on the mapped area with relevant examples. Some mentioned relief features on mapped area without relevant examples, while others mixed correct and incorrect responses. For example, some candidates wrote correct relief features such as; *valleys* and *seasonal swamps* without providing relevant examples.

In part (c), some candidates described correctly the site and functions of Mto wa Mbu township. Some provided the correct site and explained the roles/importance of roads and rivers, instead of the functions of Mto wa Mbu township.

In part (d), some candidates correctly calculated both Magnetic Bearing and Magnetic Variation as at January 2022, while others calculated incorrectly both Magnetic Bearing and Magnetic Variation.

Moreover, 34,084 (81.3%) candidates who scored from 0 to 4 marks were not well informed on the topic of Topographical Map Interpretation. In part (a), some candidates mentioned the correct type of climate without evidences, while others failed to identify the correct types of climate with evidences. For example, some candidates provided incorrect type of climate as; *Tropical climate* with the evidences of hot desert climate such as; *the area receives low rainfall due to the presence of few forest* and *presence of seasonal swamps*.

In part (b), some candidates provided the names of the relief features on mapped areas, but failed to give evidences. Some provided incorrect names of the relief features without evidence while, others did not answer this part of the question. For example, one candidate gave incorrect relief features with incorrect evidences like; *presence of schools* and *health centres due to the presence of population*.

In part (c), some candidates gave the site of Mto wa Mbu township without its functions. Some failed to identify the site but were able to mention the functions of Mto wa Mbu township. Others were not able to identify the site and functions of Mto wa Mbu township. For example, one candidate provided incorrect site of Mto wa Mbu such as; *it is located almost all over the map,* but the candidate identified its functions.

In part (d), most candidates did not calculate the angle of Magnetic Bearing and Magnetic Variation as at January 2022. For example, one candidate was not able to calculate both Magnetic Bearing and Magnetic Variation as evidenced in the following incorrect steps;

$$\begin{array}{rl} & MB - MV \\ & M2 - M1 \\ & 1 \quad 2022 \\ - & \underline{8 \quad 2018} \\ & 5 \qquad 3 \end{array}$$

Extract 3.2 is a sample of an incorrect response for this question.

3 (a) Type of climate

- Tropical climate

Due to range 20°

(b) Relief of Map

- Presence Mountain / Hills

due to the presence of the highland

- Presence of River

- due to the presence of the Mto wa mbu River

from grid 150224

(c) Site of Mto wa mbu

- It ~~from grid 44~~

- Is sited in Eastern part of Kilimanjaro (Manyara)

FUNCTION

=> used in Agricultural activities

- due to presence of Forest

=> Used for the domestic activities

- like, school drinking cooking

=> Used for Construction and Transportation

- due to presence of Market, schools

(d) Data given

Magnetic variation (mv) July 2018 120° 36'w

True bearing 180° 44'

Annual change = x

Magnetic variation 2022 = x

Manetic Bearing jan 2022 = x

from the formulator

3 (i) MB = TB + MU

solution

$T_2 - T_1$

T_2 2022 Jan

T_1 2018 July

4 ya

Annual change 4'

4 × 4'

= 16'

60

= 0° 2' 40"

MB = 180° 44' 00"

+ 0° 02' 40"

180° 46' 40"

∴ TB Magnetic Bearing at January 2022 is 180° 46' 40"

(ii) Magnetic Variation

MV = MB + TB

sol

MU = $T_2 - T_1$

2022 Jan

2018

4 ya

4 ya × 4 = 16'

16/60

= 0° 2' 40"

Add 120° 36' 00"

000° 02' 40"

120° 38' 40° W

∴ The magnetic variation of 2022 is 120° 38' 40" W

Extract 3.2: A sample of an incorrect response for question 3

Section B: Study of Soils, Space Dynamics, Dynamic Earth and Consequences and Water Masses

2.1.4 Question 4: Study of Soils

The candidates in this question were given the following statement *"You have been invited to a workshop organized by farmers whose harvests have been decreasing in quantity and quality over the years due to soil degradation"*. Then, they were required to advise the farmers in six points on how they can improve both quality and quantity of their harvest. The question carried 20 marks.

This question was answered by 46,623 (99.5%) candidates. The general performance was good since 44,793 (96.0%) candidates scored 7 marks or above. Data analysis showed that 36,729 (78.8%) scored from 12 to 20 marks, 8,064 (17.3%) scored from 7 to 11.5 marks and only 1,830 (3.9%) scored from 0 to 6.5 marks. Figure 4 illustrates the performance for this question.

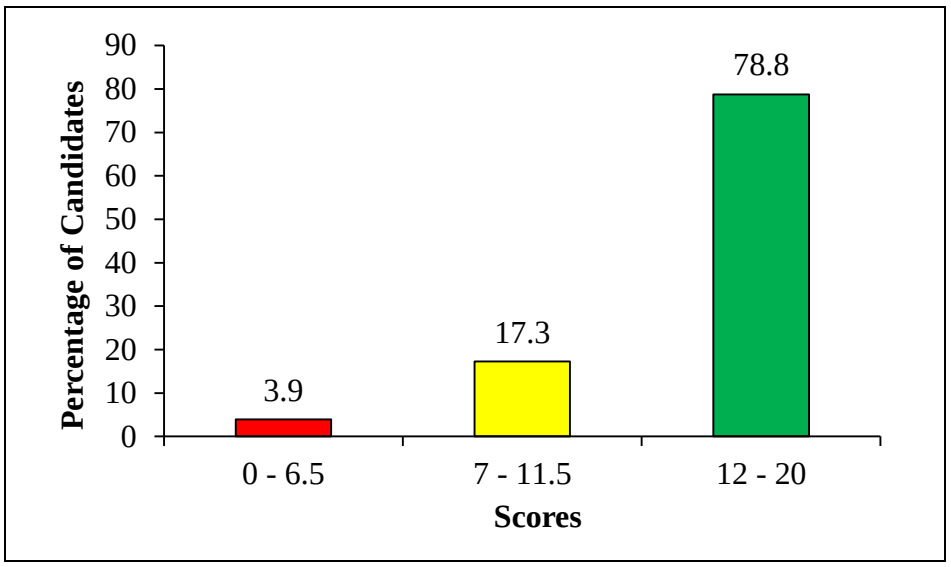


Figure 4: *Candidates' Performance for Question 4*

The analysis showed that 36,729 (78.8%) candidates who scored from 12 to 20 marks had adequate knowledge on the concept of soil degradation, particularly on the loss of soil fertility, soil conservation and management. Those candidates gave relevant introductions of soil degradation. For example, one candidate wrote; *soil degradation is the deterioration of the*

soil quality through erosion, pollution, loss of fertility and mass wasting. This makes the soli to be less productive. Soil productivity is the ability of the soil to support plant growth through the supply of nutrients, water and air almost in a balanced proportion. Soil conservation refers to deliberate measures applied to protect the soil from loss of fertility, erosion and pollution.

Also, they provided the six points on how to improve both quality and quantity of the harvests. For example, one candidate wrote; *contour farming, terracing, afforestation and reforestation, destocking, mulching, cover cropping, strip cropping, application of organic farming, crop rotation and mass education* and ended with a relevant conclusion. Candidates' variation in their marks was caused by varying clarity and accuracy of their responses. Extract 4. 1 shows correct responses for this question.

4. Soil degradation is the destruction in the quality of the soil due to a number of factors such as monoculture, overgrazing such that the soil is no longer able to sustain plant growth. The farmers have been wondering why their harvests have been decreasing in quality and quality. The following are the ways that the farmers can use so as to improve the quality and quantity of soil,

Crop rotation system involves the growing of various crops of legumes like beans, peas to rotate them annually so as to enrich and increase the fertility of the soil. During crop rotation, shallow rotated with deep rooted crops and legumes assist in nitrogen fixation and balance that helps to increase the fertility of the soil. This is done so as to get the soil well enriched. It can be shown by a diagram below

season 1

Beans	cassava
Peas	maize

season 2.

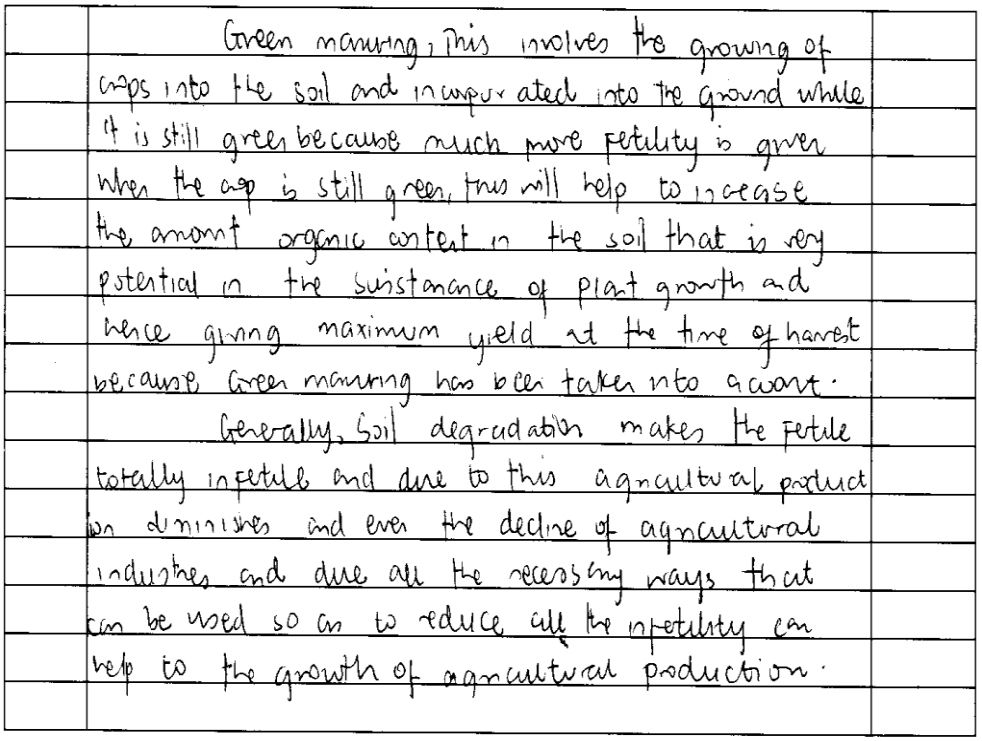
cassava	maize
Beans	Peas

The use of fertilizers, The farmers can decide to use fertilizers like Farmyard fertilizers like cowdung and other animals and compost fertilizer that is from various things in one combination. Despite using only the natural fertilizer, also artycal fertilizers like Ammonium chloride, NPK, CAN can also be used so as to increase the fertility of the soil. This helps to add the rate of organic matter in the soil which is very advantageous for supporting plant growth.

4. Fallowing. This is a period during the agricultural practice where the land is left for some time without planting so that it can regain its fertility before another planting season. This is usually accompanied with the growing of grasses so that it can not be left exactly bare and this helps to increase the fertility of the soil such that the next growing seasons much yield will be obtained in the production.

Mulching. This involves covering the soil with a dry vegetative cover. This is usually termed as a mulch. The logic behind mulching is to prevent the soil from being detached by any agent like wind, water. Because the soil is highly protected then its reasoning enough such that with next planting session the yield will be as larger as before mulching had been done. These mulch can be dry leaf from banana trees that help covering the soil to avoid its destruction.

Destocking. This is the reducing the number of animals that are kept in a piece of land. Regarding that a farmer keeps animals and still grows crops then, with a large number of animals makes it easy for the soil to loose its ability to sustain plant growth. It's essential for the farmer to keep less animals to avoid the deterioration of the soil. The farmers should be adviced to avoid overgrazing because a large group of animals loosens the soil stability and hence makes it easy for fertility to be lost and therefore destocking is the right choice to be made.



Green manuring, This involves the growing of crops into the soil and incorporated into the ground while it is still green because much more fetility is given when the crop is still green, this will help to increase the amount organic content in the soil that is very potential in the suistanance of plant growth and hence giving maximum yield at the time of harvest because Green manuring has been taken into account.

Generally, Soil degradation makes the fetile totally infetile and due to this agricultural product is diminishes and even the decline of agricultural industries and due all the necessary ways that can be used so as to reduce all the infetility can help to the growth of agricultural production.

Extract 4.1: A sample of a correct response for question 4

Apart from that, 8,064 (17.3%) candidates who scored from 7 to 11.5 marks had insufficient knowledge on the topic of Study of Soils, particularly on the concept of soil degradation. Some candidates gave relevant introduction and explained few points on how farmers can improve both quality and quantity of the harvest. Others mixed correct and incorrect responses.

Furthermore, 1,830 (3.9%) candidates who scored from 0 to 6.5 marks indicated limited knowledge on the topic of Study of Soils, particularly on the concept of soil degradation. Some candidates provided irrelevant introductions, explained few points on how farmers can improve both quality and quantity of the harvests with irrelevant conclusion. Some mixed correct and incorrect points, while others mentioned irrelevant points and weak conclusions. These incorrect responses made the candidates to score lower marks. For example, one candidate wrote relevant introduction of soil degradation *as the decline of the value of the soil* but failed to explain on how farmers can improve both quality and quantity of their harvest in a degraded soil, without a conclusion. Another candidate explained the ways to improve agriculture such as; *control of pests and diseases, use of modern tools, use proper farming methods, ensure proper selection of land for*

cultivation and *avoid farming near areas with construction sites* instead of how to improve the productivity of the harvests in a degraded soil.

2.1.5 Question 5: Space Dynamic

Candidates in this question were required to *classify global (Planetary) wind system in three points and assess the effects of wind and ocean currents on the aspects of temperature and rainfall by giving two points in each aspect*. The question carried 20 marks.

This question was answered by 11,640 (24.8%) candidates. The general performance was weak since 2,854 (24.5%) scored 7 marks or above. Data analysis showed that 835 (7.2%) candidates scored from 12 to 20 marks 2,019 (17.3%) scored from 7 to 11.5 marks and 8,786 (75.5%) scored from 0 to 6.5 marks. Figure 5 illustrates the performance for this question.

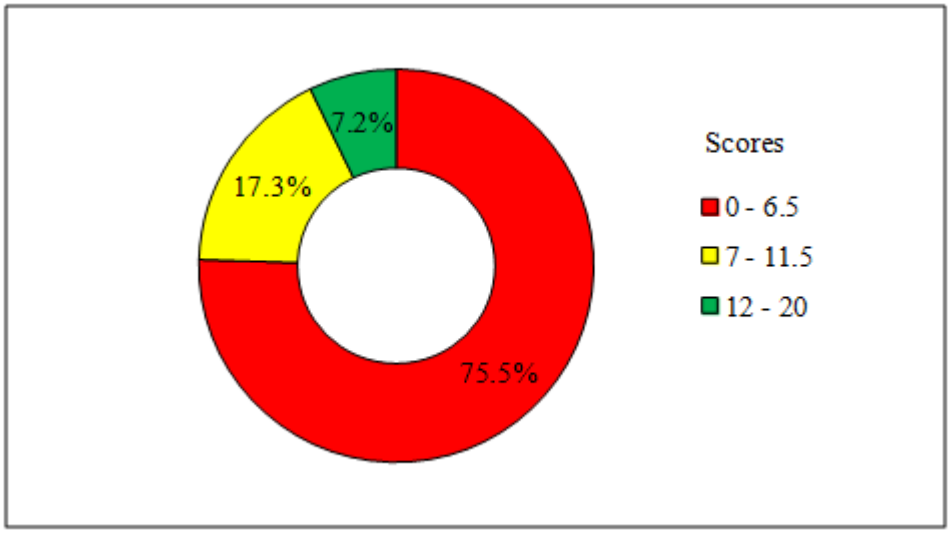
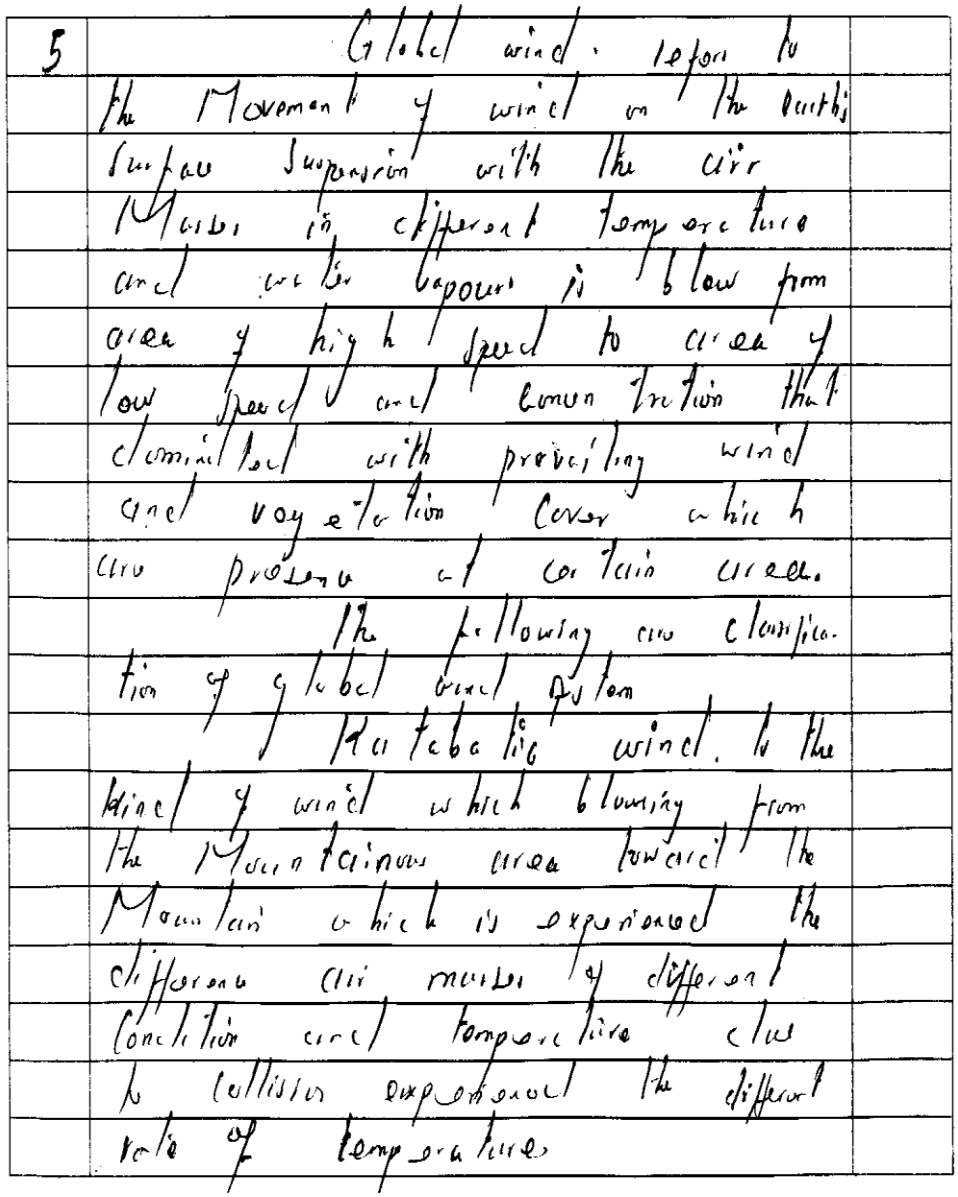


Figure 5: *Candidates' Performance for Question 5*

Analysis showed that 8,786 (75.5%) candidates who scored from 0 to 6.5 marks revealed inadequate knowledge and skills on the topic of Space Dynamic, especially on the concept of global (planetary) wind. They showed lack of mastery of the subject matter. Some candidates provided relevant introductions, but explained inadequately the classes of global wind system, effects of winds and ocean currents on rainfall and temperature. Others gave correct definitions of global planetary wind, but explained other geographical concepts which were not related to the concept of global (planetary) wind. For example, one candidate provided

incorrect classes of global wind systems such as; *monsoon winds, land breeze winds* and *mountainous winds*. Issues pertaining to the effects of winds and ocean currents on rainfall such as *occurrence of floods* and *tsunami, global warming and air pollution* characterized the majority of the candidates' responses in this category. Extract 5.2 is a sample of incorrect responses for this question.



5

Anabatic wind: It the kind of wind which blows and flows from the mountains towards the other area. Normally this is flowing and blow away from the earth's surface towards the mountain. It different wind masses which leading to formation of front and air turbulence.

Monsoon wind: It the kind of wind which occurred during different season happens in the years which experience of the cold and frosts and climbs which destructed the crops and buildings that are blowing in high and strong speed from one area to another

Apart from classification the following are effect of ocean current and wind on rainfall

Occurrence of thunder storms. The wind and oceanic current this resulting to the provision of charges between one cloud and each other when collided together in the atmosphere that leading to formation of formation of sound and lightning when rain is falling which bring the effect in the electric equipment and property

5 Formation of fog, smog and dew as well snow. also, the ocean current and temperature is resulting to the formation of fog, frosty and dew due to presence of cold moisture and silent wind that leading to formation of fog in the atmosphere.

Apart from the effect on the rainfall, the following effect on the temperature

Occurrence of climatic change also oceanic current and wind bring the big effect on the rise of climate due prevailing wind which leading to the change of the temperature and climate of certain area.

Formation of fog, frosty, and snow. also oceanic current and wind leading to the occurrence of fog in the atmosphere due to presence of large amount vapour on the atmosphere bring the difficult in seeing.

Conclusion. the wind system bring the precipitation and the chemical pressure to be using in the life of human body that can leading to regulation of temperature, humidity and precipitation

Extract 5.2: A sample of an incorrect response for question 5

In extract 5.2, the candidate explained in the first part, the incorrect types of local winds such as *catabatic wind, anabatic wind* and *monsoon wind.* In the second part she/he explained the effects of the wind such as; *occurrence of thunderstorms, formation of fog* and *occurrence of climatic change,*

instead of classifying global wind system and assess the effects of winds and ocean currents on temperature and rainfall.

Furthermore, 2,019 (17.3%) candidates who scored from 7 to 11.5 marks lacked enough knowledge and skills on the topic of Space Dynamic, particularly on the concept of Global (planetary) wind. Some candidates provided good introductions on Global (planetary) wind, in the main body they explained insufficiently the classes of global wind system and assessed few points on the effects of wind and ocean currents on rainfall and temperature. Some candidates failed to classify global wind system and explained inadequately the effects of wind and ocean current on rainfall and temperature. Others explained three classes of global wind system and effects of winds and ocean currents on rainfall only. For example, one candidate provided a relevant introduction, explained correctly classes of global wind system and effects of winds and ocean currents on rainfall, but gave incorrect effects of winds and ocean currents on temperature such; as *winds lead to decrease of temperature* and *unstable rainfall* while *ocean currents lead to variation of temperature in different places* and *formation of rainfall.*

Moreover, 835 (7.2%) candidates who scored from 12 to 20 marks had adequate knowledge and skills on the topic of Space Dynamics, especially on the concept of weather and climate. Those candidates scored higher marks because they provided relevant introductions for global (planetary) winds system. For example, one candidate wrote; *planetary winds are winds which blow more frequently on a certain area, normally, they do not change their direction. Global pressure belts are specific zones of the earth marked by uniform pressure characteristics. There are four pressure belts globally which are Equatorial low pressure belt, Subtropical high pressure, Sub polar low pressure belt and Polar high pressure belt.*
Also, they classified global wind system. For example, one candidate wrote;

(a) *Polar winds (easterlies); these winds blow from polar high pressure belts to sub polar low pressure belts. They are known as easterlies because they are deflected from the east. They are divided into northern easterlies operating in the northern hemisphere and the southern easterlies operating in southern hemisphere.*

(b) Westerlies; These are winds which blow from the subtropical high pressure belt (Horse latitude) to the sub polar low pressure belt. These winds are known as westerlies because they are deflected from the west. They are divided into two: the northern westerlies and the southern westerlies.

(c) Trade winds; Winds which blow from the subtropical high pressure belt (Horse latitude) to the equatorial low pressure belt (Doldrums). They are divided into northern east trade wind and southern east trade winds.

In addition to that, such candidates provided the effects of wind and ocean currents on rainfall and temperature. For example, one candidate wrote;

(a) On shore wind cause heavy rainfall on coastal areas because they carry moisture from the sea to the land whereas off shore winds take moisture away from the land causing little or no rainfall in coastal zones.

(b) Warm ocean currents like Mozambique current cause high rainfall in the areas they flow because they contain a lot of moisture which is carried into coastal areas causing high rainfall. In contrast, Cold Ocean current, like the Benguela current, cause low rainfall on coastal areas because they cool warm moist winds that cut across them causing little or no rainfall in the areas.

(c) Winds blowing from areas with high temperature, like the Tropical, have warming effects on the areas they blow to. In contrast, winds blowing from areas with low temperatures, like Polar Regions, have cooling effects on the areas they blow to.

(d) Warm Ocean current like Mozambique current, lead to high temperature in the areas they flow because they flow from hot regions. Hence, they have warning effects on the areas they flow. In contrast, cold ocean currents, like the Benguela current, lead to low temperature on coastal areas because they flow from cooler regions. Hence, they have cooling effects on the areas they flow.

However, the strengths and weaknesses of their responses made their scores to vary.

2.1.6 Question 6: Dynamic Earth and Consequences

Candidates in this question were given the statement that "*You are invited by villagers from Lwandai village in Lushoto District who wonder why muds flow from the mountains to their settlements".* Then, in six points, they were required to educate the villagers on the causes of the situation. The total marks allocated for this question were 20.

This question was attempted by 44,364 (94.7%) candidates. The general performance was good since 38,279 (86.3%) candidates scored 7 marks and above. Data analysis showed that 25,686 (57.9%) candidates scored from 12 to 20 marks, 12,593 (28.4%) scored from 7 to 11.5 marks and 6,085 (13.7%) scored from 0 to 6.5 marks. Figure 6 illustrates the performance for this question.

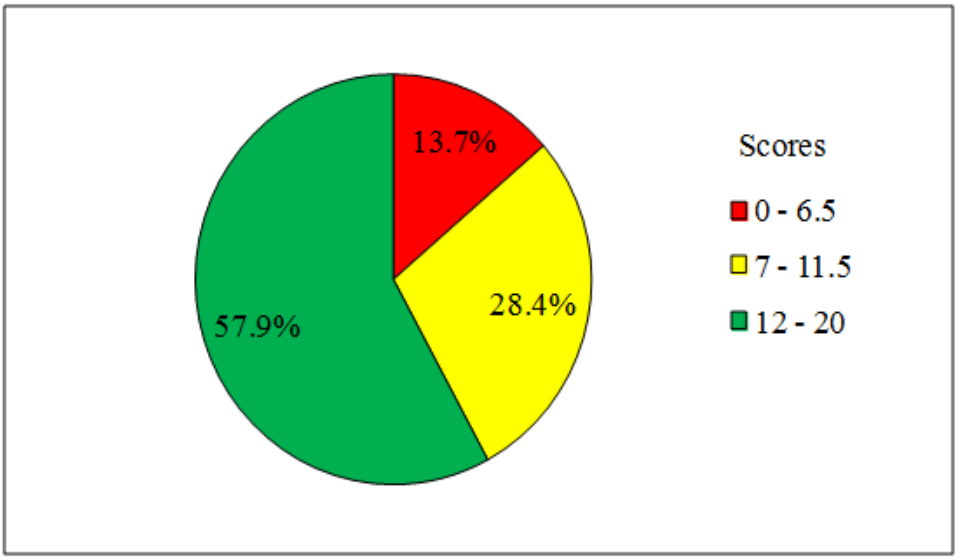


Figure 6: *Candidates' Performance for Question 6*

The analysis in this question showed, 25,686 (57.9%) candidates who scored from 12 to 20 marks demonstrated a good knowledge and skills on the topic of Dynamic Earth and Consequences on the subtopic of mass wasting, particularly on the concept of mudflows. Those candidates provided relevant introductions for mass wasting and mud flows. For example, one candidate wrote; *Mass wasting is the creeping, flowing, sliding or falling of rocks and weathering materials downhill under the influence of gravity. The mass movement of loose materials (regolith) is*

mainly downhill in the form of saturated soil, loose stones and rocks. When gravitational forces exceed forces of resistance, the slope failure occurs and materials start to move downwards in either a slow movement or a fast movement. Water plays a great role in weakening the soil that would otherwise resist downhill movement. Materials saturated by water will execute a fast flow while the rest will be displaced in a slow movement.

Mud flows is one type of mass wasting. Mudflows are more rapid movement of soil, occurring on steeper slopes and exceeding 1 km per hour. Mud flows are most likely to occur following periods of intensive rainfall, when both volume and weight are added to the soil giving it higher water content than an earthflow.

Likewise, they gave reasons for the occurrence of mud flows. Some of the reasons given include *gradient (angle of the slope), the nature of materials and the extent of saturation, vegetation, climate, human activities* and *tectonic forces.* Also, they provided relevant conclusions. The variation of their marks was caused by the differences in the strengths and accurateness of their responses. Extract 6.1 is a sample of a correct response for question 6.

6

Mudflow Refers to the flowing movement of mud and other alluvial materials like silt down the slope due to the influence of gravity. Mudflow is explained well under the phenomena of Mass wasting which refers to the movement of materials down the slope under the influence of gravity The movement of the materials can be in falling movement, creeping movement and flowing movement. The mudflow is caused by several causes. In the light of this statement the following are the major causes of mass wasting;

Climate of the area; The process of mass wasting is mainly influenced by the type of the weather condition of an area recorded over a long period of time. The climate of the area determined if the mass wasting will take place in terms of creeping, flowing or falling movement. This is due to water in the environment caused by frequent rains. Therefore if there is mudflow in Kwandai village it indicates that the climate is allowing the presence of moisture in the surface which leads to flowing movement of materials <silt, sand, gravel>

Nature and Extent of saturation; The concept of mudflow is the flowing movement of alluvial materials in mud from the areas of high to low gradient. The flowing movement is influenced by the amount of water or moisture available in the ground Earths surface. If the moisture or water in the ground is high it leads to flowing movement if low water or no moisture at all it leads to creeping movement, hence the mudflow in Kwandai village in Kaduna should know that the amount of water/moisture available in the ground influences mass wasting.

Gradient (slope); can be explained as the level of inclination from one point to another. Mass wasting is influenced or caused by difference in gradient between two point hence

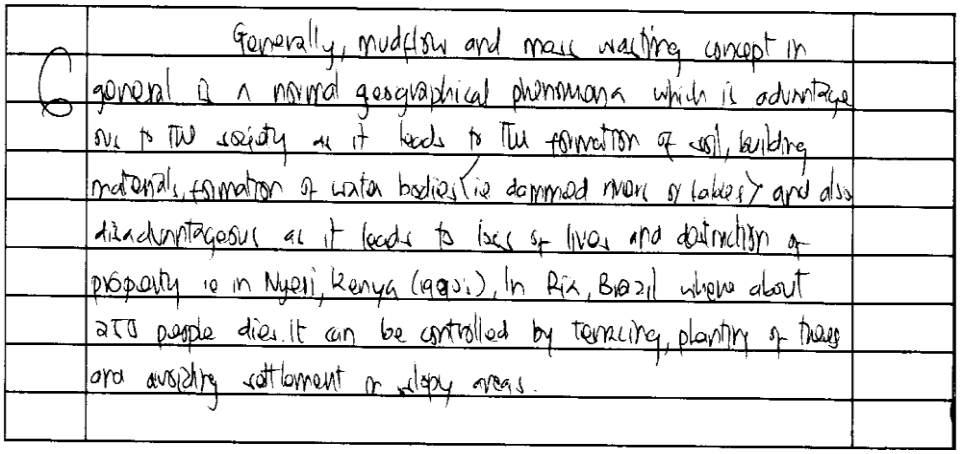
6

explain the phenomena movement of materials due to influence of gravity. If the slope or gradient is low it leads to very low rate of mass wasting compared to when the gradient is high. Therefore the mass wasting phenomena present in Lwandai village of mudflow is influenced by the slope/gradient.

Vegetation cover; Further mass wasting phenomena of mudflow is caused, altered or influenced by the level of vegetation cover available in an area. If an area has high coverage of plants or trees the rate of mass wasting is then lowered since the vegetation tend to act as barrier to the movement of the materials and the vice versa is true in areas where there are no vegetation, the materials tend to move down the slope easily as there are no barriers. Therefore in Lwandai the vegetation cover might be low influencing mudflow.

Tectonic activities or forces; Natural forces exerting on the earth surface known as compressional or tectonic and the terrestrial activities might also add up on the causes of mudflow and mass wasting in general. These tectonic forces acting on the earth lead to the formation of features like plateaus, escalpments which include the rise in earths surface above sea level. The fact that there is difference in slope it leads to mass wasting hence the mudflow in Lwandai might be in the areas affected by the tectonic forces ie Usambara.

Human Activities; Lastly, the geographical phenomena of mass wasting which is the movement of alluvial materials down the slope can also be influenced by human activities Example, when man cuts the trees in the slopy areas it leads to removal of barriers to mass wasting hence influences the process, also human activities like mining and quarrying which involves the use of dynamites and explosives influence the mass wasting since the shock or aftermath of the explosion brings about disturbance hence leads to mass wasting ie avalanches.


6 Generally, mudflow and mass wasting concept in general is a normal geographical phenomena which is advantage and to the society as it leads to the formation of soil, building materials, formation of water bodies (ie dammed rivers or lakes) and also disadvantageous as it leads to loss of lives and destruction of property ie in Nyeri, Kenya (1998), in Rio, Brazil where about 270 people die. It can be controlled by terracing, planting of trees and avoiding settlement in steep areas.

Extract 6.1: A sample of a correct response for question 6

Furthermore, 12,593 (28.4%) candidates who scored from 7 to 11.5 marks had inadequate knowledge on the topic of Dynamic Earth and Consequences, particularly on the concepts of mass wasting and mudflows. Some candidates provided relevant introduction, of mass wasting and mud flows, but gave few causes of the mudflows. Some candidates provided irrelevant introductions and explained reasons for the occurrence of mud flows without conclusions. Others gave relevant introduction but mixed up correct and incorrect explanations on some causes of mudflows. The dominant incorrect reason given by the candidates in this group included *melting of ice* and *prevailing winds*.

Moreover, 6,085 (13.7%) candidates who scored from 0 to 6.5 marks lacked the knowledge on the topic of Dynamic Earth and Consequences especially on mass wasting and mudflows. Some candidates failed to give correct introductions of mass wasting and mud flows. in addition, they explained insufficiently the reasons for the occurrence of mudflows. Some gave relevant introductions, but failed to give correct reasons and conclusions. Others gave relevant introductions for mass wasting and irrelevant introductions of mud flows. Also, they failed to describe the causes for mudflows. For example, one candidate gave the explanations of *soil creep* instead of *mudflow* such as; *it is the steady movement of the soil down the slope*. Extract 6.2 is a sample of incorrect responses for this question.

6. Mud flow refers to the movement of unconsolidated materials comprises of sand, pebbles and shingles that are being influenced by the gravity in a slow motion in a slope. Normally mud flows are found in the effect of mass wasting. There other processes such as debris fall, avalanche and among others. The mud flow for it to occur there is a force to be considered, presence of steep slope for it to move and among others. With that concern here are the measures on the causes of mud flow:

Avoiding staying in steepy areas or highlands; this steep slope influences the movement of different materials. Therefore it is advised for the people to stay away in such areas so as to avoid movement of mud flow and other causes. Hence avoiding the increase in displacement of people.

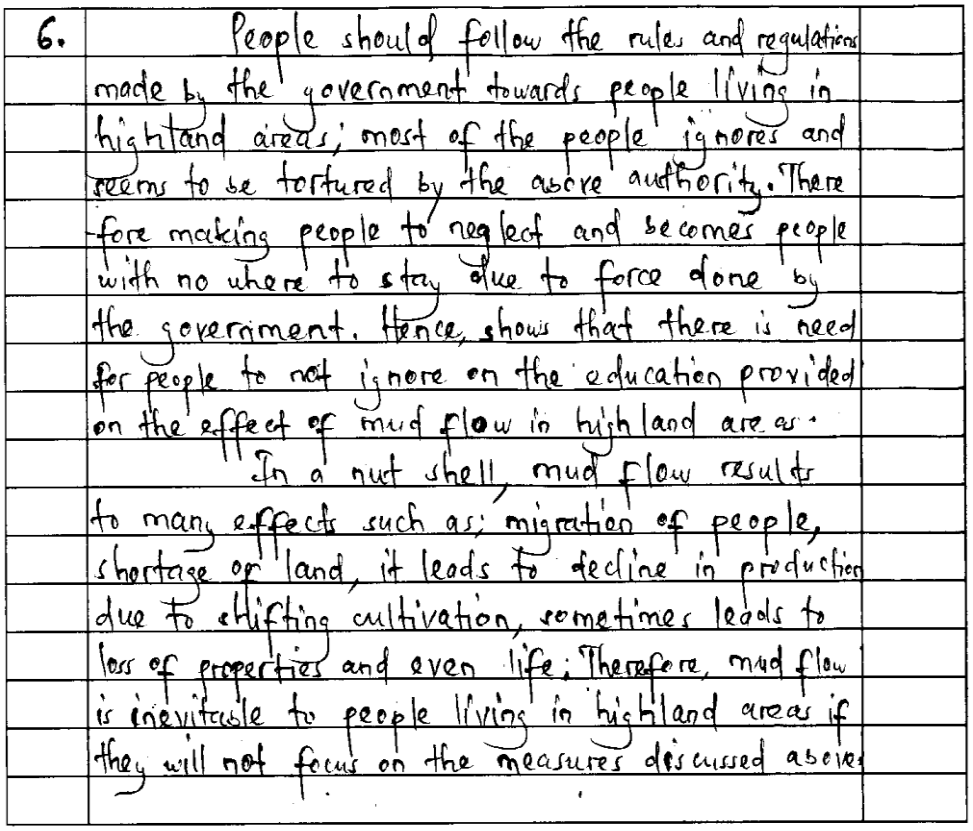
People should build very light houses or wooden buildings so as to reduce the effect of mass wasting; If people are to live

6. in very light houses or wooden buildings so as to decrease the great effect or tension of such problems. Therefore it will be able to reduce the number of decline in settlements.

There should control in water catchment area and flooding to avoid occurance of mud flow which is also influenced by water; people should be able to control areas with high water content and flooding in areas which are very dry so as to reduce drainage. Therefore it will be able to overcome the occurance of mud flow.

There should be establishment of strong government policy on building new residential areas to maintain their settlement; this helps to reduce migration of people anyhowly since most of the people living in such areas when are being evacuated they end up loitering anyhowly with no where to go. Hence reduces the occurance of mud flow to bring large effect to the victims.

People should avoid conducting dangerous activities that are prone to mud flow occurance; such activities can be mining activities in which people uses heavy machines to dig the holes and left unfilled. Therefore incase of rainfall it is easily to wash away and increase in flooding; hence leading to an increase in the mud flow. So, people are advised to reduce on conducting some activities that are dangerous to the land.


6. People should follow the rules and regulations made by the government towards people living in highland areas; most of the people ignores and seems to be tortured by the above authority. Therefore making people to neglect and becomes people with no where to stay due to force done by the government. Hence, shows that there is need for people to not ignore on the education provided on the effect of mud flow in highland areas.

In a nut shell, mud flow results to many effects such as; migration of people, shortage of land, it leads to decline in production due to shifting cultivation, sometimes leads to loss of properties and even life; Therefore, mud flow is inevitable to people living in highland areas if they will not focus on the measures discussed above.

Extract 6.2: A sample of an incorrect response for question 6

In Extract 6.2, the candidate explained the ways of controlling natural catastrophes such as: *avoid staying in steep areas, people should build very light houses, there should be control of water catchment areas and establishment of strong government policy*, instead of the causes for mudflows.

2.1.7 Question 7: Water Masses

Candidates in this question were given the statement that "*The nature of the rock and relief structures of the earth determine the development of river patterns''*. Then, they were required to justify the statement with the aid of diagrams in six points. The total marks allocated for this question were 20.

This question was answered by 37,221 (79.4%) candidates. The general performance was good since 27,663 (74.3%) candidates scored 7 marks or above. Data analysis showed that 16,617 (44.6%) candidates scored from 12 to 20 marks, 11,046 (29.7%) scored from 7 to 11.5 marks and 9,558

(25.7%) scored from 0 to 6.5 marks. Figure 7 illustrates the performance for this question.

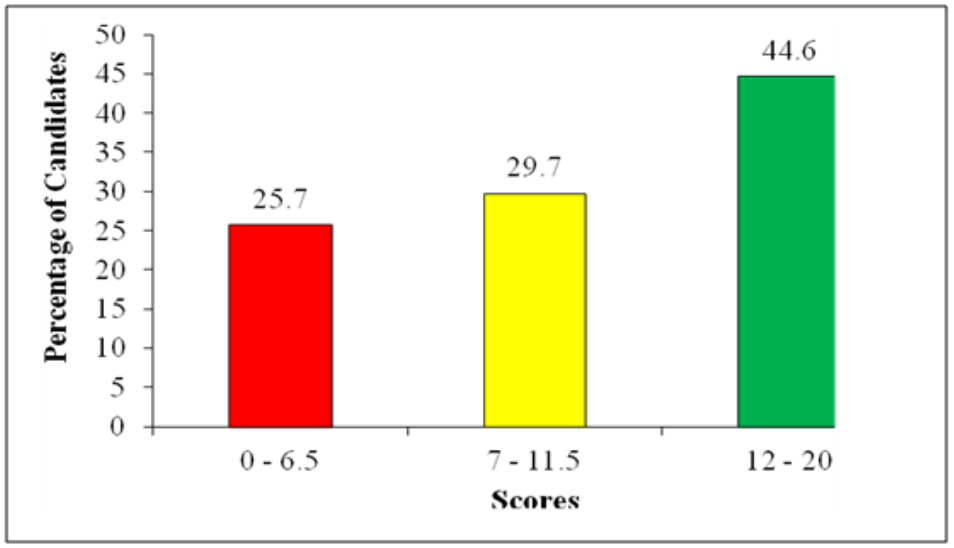


Figure 7: *Candidates' Performance for Question 7*

Further analysis showed that 16,617 (44.6%) candidates who scored from 12 to 20 marks had adequate knowledge on the topic of Water Masses, particularly on the concept of river (drainage) patterns. Those candidates justified how the nature of the rock and the relief structures of the Earth determine the development of river patterns. They explained the meaning of river (drainage) patterns. For example, one candidate wrote; *River (drainage) patterns is the lay out or plan of rivers with their tributaries on the drainage basins. River patterns are highly influenced by the geological (rock) structure and geomorphological (relief) of the area in which the river flows.* He/she justified how the nature of the rock and the relief structure of the Earth determine the development of river patterns as;

(i) *The dendritic drainage pattern is the drainage pattern in which rivers look like a tree trunk and its branches. In this pattern, tributaries join the maim river in acute or oblique angles. It is common in areas with gentle slopes whereby it flow along those lines where they find erosion easy and for this reason, they follow areas of weak rock. Example in Kenya highlands.*

(ii) *A radial drainage pattern is the pattern in which rivers radiate from a hill or a peak of a mountain. This pattern is influenced by the*

presence of a hill or a mountain. It is common where there are volcanic mountains and igneous rock e.g. on the slopes of Mount Kilimanjaro. It is controlled by the slope of the land.

(iii) *A rectangular drainage patter is similar to the trellis pattern. In this pattern, however, rivers form numerous sharp angular bends as they flow on intensively faulted rocks. Examples are found on the Bamenda highlands in Cameroon.*

(iv) *An annular drainage pattern is a pattern in which rivers make concentric curves in dissected volcano made of bands of hard and soft rocks. An example is found around Lake Bosumtwi in China.*

(v) *A trellis drainage pattern is the drainage pattern in which rivers join in right angles as they flow along the bands of hard and soft rocks. Such rivers erode soft rock layers leaving hard rock layers. The patterns strongly related to structure of the rock mostly flow along the fault or other lines of weakness.*

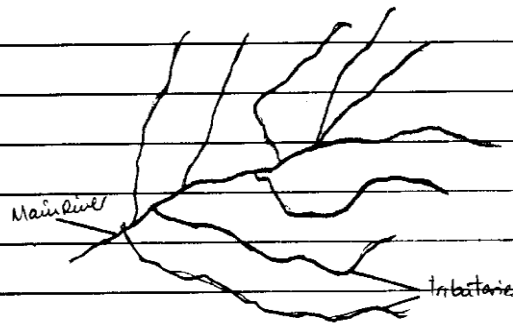
(vi) *A centripetal drainage pattern is a pattern in which rivers flowing from different directions converge in one valley or depression where there is a swamp, lake or sea. It is influenced by slope as in Lake Chad (Central Africa).*

(vii) *A parallel drainage patter is characterized by steams flowing parallel to each other influenced by presence of steep slopes especially along fault scarps. A good example is river Athi in Kenya.*

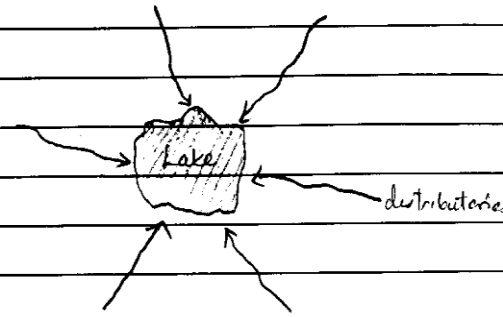
Also, they supported their answers with well drawn diagrams. However, strengths and weaknesses of their responses made them to vary in their scores. Extract 7.1 is a sample of correct responses for this question.

1. River patterns refers to the outflow of water in a given area. the river patterns can also be identified as the Drainage patterns. The Development of the River patterns are determined by various factors including the Nature of the Rock and the Relief structure of the Earth. The following are some of the River patterns and their related factors for development.

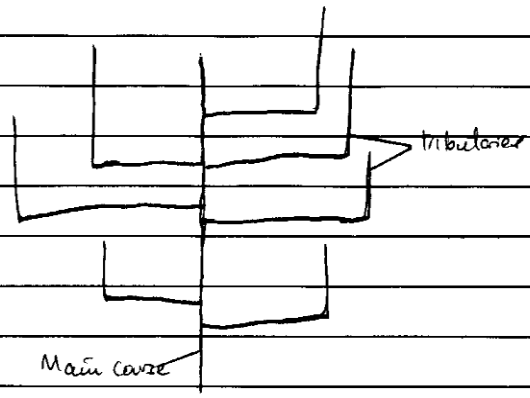
Dendritic pattern. This is one of the river pattern that occurs in form of veins on a leaf. It is featured by many tributaries that join the main river. The flow is mostly from the high land areas to Low land that join the River and it mostly occurs in places with Igneous Rocks.



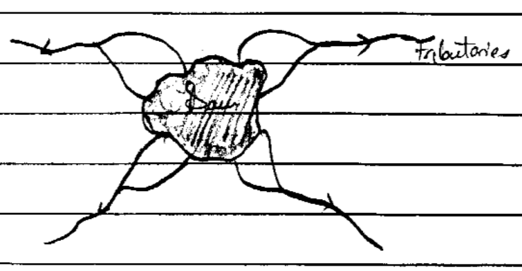
Centripetal pattern. This is the river pattern that involves the flow of water that Collects to one Centre example a Lake. The Centripetal pattern mostly occurs when water from the high land areas like Mountains Collect to sources like Lakes and it develops in areas with easily eroded rocks thus facilitating the movement of water



7 Rectangullar pattern. This is the river pattern which Involves the flow of water joining the main river at a right angle. The rectangular river pattern mainly flows in In Rocks that have faults or cracks and are not easily eroded. and also the pattern flows from the uplifted land to low or nearly flat land.

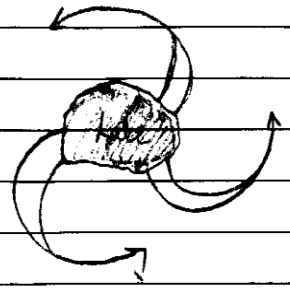


Radial pattern. This is another river pattern where the water flows from the source outflow of the tributary. the radial river pattern Involves the movement of water from uplifted areas that distribute to the rest under the Influence of rocks that are passable the river pattern may be an outlet of source like dams or ponds.

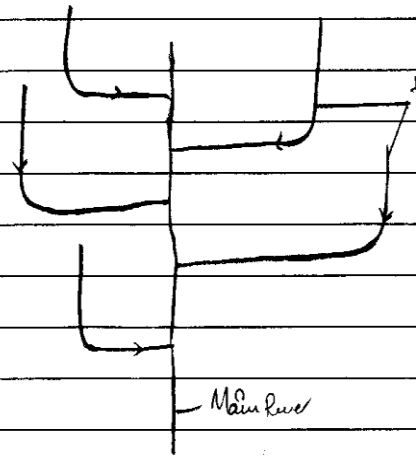


Annular pattern. This is another river pattern where the water flows from Its source in a spiral way. The Anular pattern is mostly experienced in Places of land Uplift where water flows out of the source through distributaries and the Rocks are easily eroded. Example the Igneous and

7 Sedimentary Rocks that allow the water to flow between them



Trellised pattern. This is another river pattern where the flow of water Commits the Main Course at right angle Meaning almost at right angle. The pattern Involves the flow of water from highland area to Connect with the Main Course and It passes through easily eroded rocks such as the Igneous Rocks.



Therefore the River patterns develop due to a number of factors which include nature of the Rock and Relief. Thus result to the formation of various water bodies and Conduction of various economic activities which are a result of the water received from the distributaries to the Main source of water.

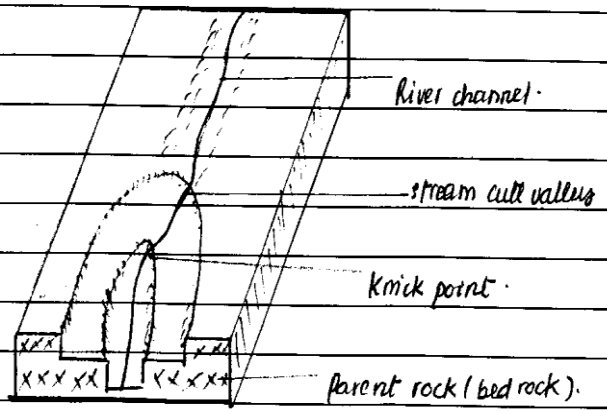
Extract 7.1: A sample of a correct response for question 7

On the other hand, 11,046 (29.7%) candidates who scored from 7 to 11.5 marks had inadequate knowledge on the concept of river (drainage) patterns. Some candidates gave relevant introductions for river patterns,but justified insufficiently the nature of the rock and relief structure of river pattern. Some provided irrelevant introductions with few points that, river patterns are influenced by rock and relief structures. Others provided relevant introductions but mixed up correct and incorrect responses. For example, one candidate defined *rocks* instead of *river (drainage) pattern* such as; *are aggregates of mineral particles*. The candidate further justified the answer with few points on how the nature of the rock and the relief structure of the Earth determine the development of river patterns with irrelevant conclusion. Exactness of their responses caused variations of the marks.

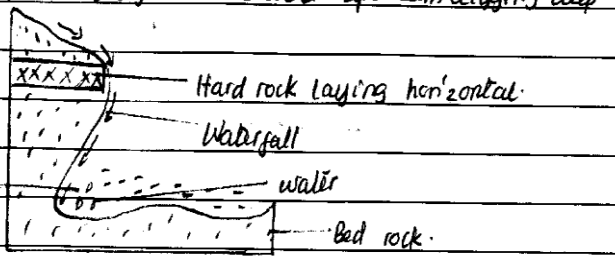
Moreover, 9,558 (25.7%) candidates who scored from 0 to 6.5 marks had insufficient knowledge on the topic of Water Masses, particularly on river (drainage) patterns. Some of these candidates provided irrelevant introductions and failed to justify how the nature of the rock and the relief structures of the earth determine the development of river patterns. Some provided relevant introductions for river patterns, but justified insufficiently how the nature of the rock and the relief structure of the Earth determine the development of river patterns. Moreover, others provided relevant introductions for river (drainage) patterns, but mixed correct and incorrect points. For example, one candidate wrote incorrectly *consequent* and i*nsequent* as follows; *consequent streams are the main streams flowing directly down a slope* while *insequent streams are the tributaries which flow towards the main streams.* Another candidate gave features of river erosion such as; *V- shaped valley, plunge pool, pot holes, natural levees, floods* and *delta* instead of *dendritic drainage pattern, a radial drainage patter, a trellis drainage pattern, a rectangular drainage pattern, an annular drainage pattern, centripetal drainage pattern* and *a parallel drainage pattern.* Quality of their responses made them to have variation in the scores. Extract 7.2 is a sample of incorrect answers for this question.

7. River patterns; This is a way of distribution of developme nt of channel of a river toward their long profile of the river patte rns. and river pattern consists of three stages which are the upper stage of river, middle stage of river and the lower stage of the river. due to occurance of differences in nature of the rock and the relief structures can influenced occurance of land forms or features toward upper stage of river and lower stage of the river. The following are the landforms or features can occured due to the nature of the rocks in upper stage of river.

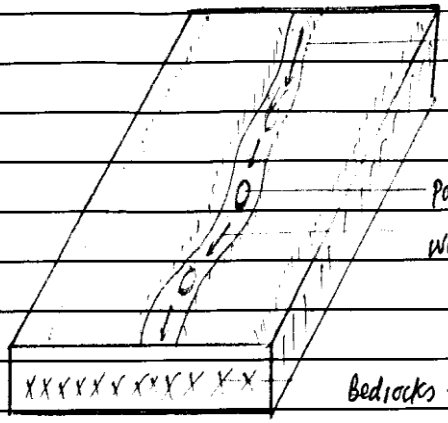
The stream cutt valley; This are features which are the formed in upper stage of river due to water flowing in channels are cutt across different nature of the rocks which can be the hard and soft to make their channels and can cause occurance of valleys in a given areas.



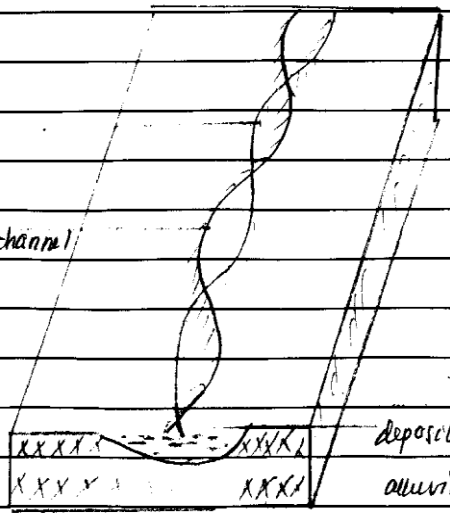
Formation of water falls; These are landforms which are formed toward our upper stage of river depends on nature of rocks such as waterfall occured when hard rock standing vertically, horizontaly and vertical upstream digging deep.



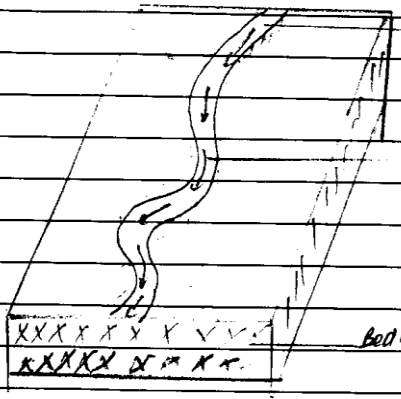
7 Formation of potholes; These are features which are formed in upper stage of river pattern involves when water breaking down hard rock layer and when meet the permeable rock, inside the soil and where meet with holes can contribute water to percolate inside the soil through their swallow holes.



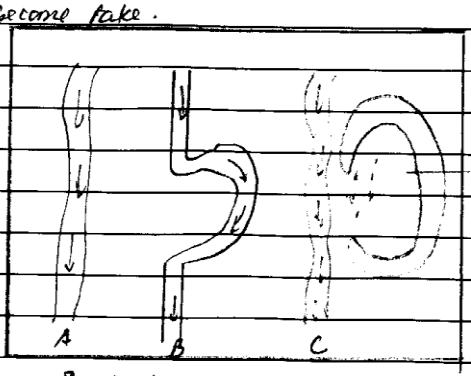
Formation of braided river channels; This are features are occured when river profile reach to relief structucture in the lower landed areas where cause river loss energy or capacity and involver river channel to become braided to each other in land of masses areas.



7 Formation of incised meanders; These are features are result from their lowed of relief structures in a certain area due to occurances of loss of energy and capasity of river course the occurances of incised meanders is their hard rock and soft leads to the formation of this features.



Formation of ox-bow lakes; This features occured when river it losses its energy so can cause their incised meander are cutt off and cause formation of ox-bow lake in downward areas of a catchment and cause filling with water and formar become lake.



Therefore: Development of our river profile and their pattern contributed toward development of lower stage of river upper stages and middle stage of river valley.

Extract 7.2: A sample of an incorrect response for question 7

In extract 7.2 the candidate explained the features formed at the youth and middle stages of the river such as: *stream cut off valley, formation of water falls, formation of pot holes, formation of incised meanders* and *formation of ox - bow lakes* instead of explaining the types of river patterns as influenced by geological (rocks) and geomorphological structure (relief).

2.2 13/2 GEOGRAPHY PAPER TWO

This paper consisted of seven questions which were set from two topics; *Population and Development* and *Regional Focal Studies*. Question 1 and 2 were set from the topic of *Population and Development* while question 3, 4, 5, 6, and 7 were set from the *Regional Focal Studies* topics in the following subtopics: *Sustainable Fishing, Environmental Friendly Tourism, Manufacturing Industries, Transport and Communication* and *Agricultural Development*. The candidates were required to answer a total of five questions whereby, question number one (1) was compulsory. Each question weighed 20 marks.

2.2.1 Question 1: Population and Development

This question was compulsory and it required the candidates to ‘‘*Comment on the nature and causes of population distribution in Tanzania by providing eight points, four in each aspect’’.*

The question was attempted by 46,866 (100%) candidates. The general performance was good as 44,289 (94.5%) candidates scored 7 marks and above. The detailed data analysis showed that 21,885 (46.7%) candidates scored from 12 to 20 marks, 22,404 (47.8%) scored from 7 to 11.5 marks and 2,575 (5.5%) scored from 0 to 6.5 marks. Figure 8 illustrates the performance for this question.

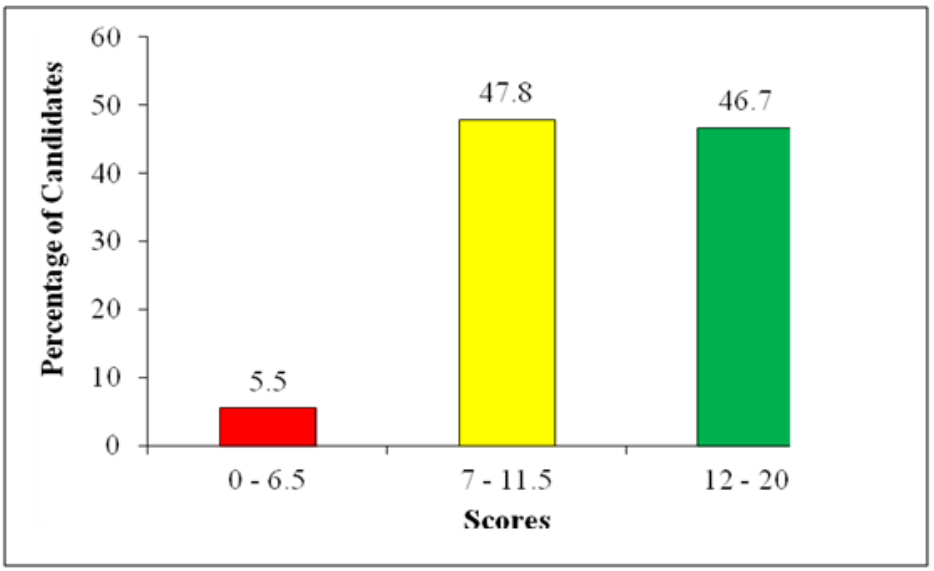


Figure 8: *Candidates’ Performance for Question 1*

Further analysis showed that 21,885 (46.7%) candidates who scored from 12 to 20 marks understood the demands of the question. Those candidates had good knowledge and skills as they correctly commented on the nature and the causes of population distribution in Tanzania and provided relevant conclusions. For example, one candidate made a good introduction of the population distribution in Tanzania as the question demanded. The candidate commented on the nature of population distribution in Tanzania in four points as; *high population densities are found on the shore of lake victoria, coastal areas and on the slope of mountain Kilimanjaro due to availability of water and fertile soil. Moderate population densities are found in western part like Tabora, Kigoma and Shinyanga due to climate of an area. Sparsely populated areas are found in the central parts of Tanzania due to climate of an area which is the semi-arid areas.* Also, the candidate eleborated the four causes of population distribution in Tanzania as; *unevenly distribution of natural resources, availability of employment opportunities, the influence of the government policy and unevenly distribution of social services*. The candidate finalized his/her work by providing a relevant conclusion.

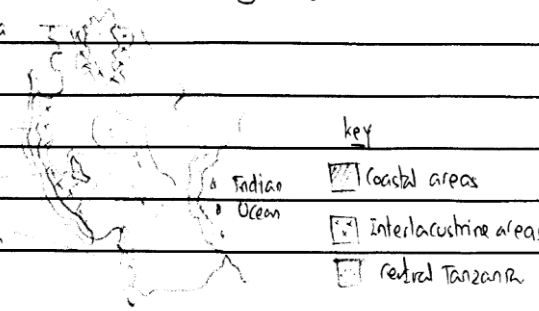
The variation in their scores was influenced by the strengths and weaknesses of their responses. Extract 8.1 is a sample of a correct response from one of the candidate for this question.

1. Population distribution refers to the occurence and non-occurence of people in a certain geographical area. Generally, population is unevenly distributed that is, people are more concentrated or populated in some areas than others. Tanzania as a country is no exception where population is denser in some regions than others comparatively. For example, population is denser in Dar es Salaam than Lindi region. Below is the nature of population distribution in Tanzania;

There is more people on the coastline or coastal regions. That is, population is dense in coastal regions such as Dar es Salaam, Tanga, and Pwani. This can be due to historical factors such as slave trade and colonialism where a lot of people where located along the coast for activities such as fishing and trade. Hence, there is high population density on the coastal regions of Tanzania.

Population is less dense in the interior regions such as central Tanzania. For example, Dodoma, Iringa, Singida, Mbeya, and Njombe. In Dodoma and Singida it is mainly due to its arid and semi-arid climate that generally discourages settlement while in regions like Mbeya and Iringa people are less dense due to abundance of plantations successive from the colonialist period.

Population is dense around or in lacustrine regions or lake regions such as Kigoma, Kagera, Mwanza, Mwsoma and Mara to mention a few. This can be due to large availability of water bodies which facilitate many economic activities such as agriculture ~~and~~ and even mining for example, salt mining in Kigoma.



1. Population is denser in urban areas that in Rural areas. for example, there is more people in Dar es Salaam or Mwanza than Kinampanda, Singida. This higher concentration is caused by economic opportunities, good social services and general urbanization. Also a factor of rural-urban migration.

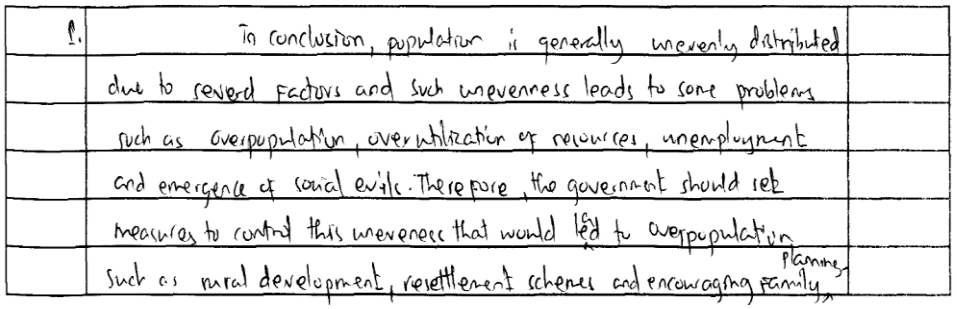
Such an uneven distribution of people in Tanzania is generally causes by several factor both physical and man-influenced, these causes include the following;

Climatic differences. This affects agriculture and settlement. For instance, areas with favourable climate for agriculture such as moderate temperature and sufficient rainfall are densely populated for example Moshi, Kilimanjaro. While unfavourable climate areas of aridity or desert characteristics such as Dodoma discourage settlement and agriculture hence sparsely populated.

Vegetation cover. Areas with dense vegetation cover tend to discourage settlement due to high cost both financial and social, of clearing the forests. For example, dense forests in Tukuyu highlands are very sparsely populated. While areas with sparse vegetation cover simplify settlement and hence are densely populated for example Dar es Salaam.

Soil or edaphic factor. Areas with low soil fertility are sparsely populated as they discourage agriculture for example Dodoma. While areas with very fertile soil attract settlement and population as they support plant growth and cultivation. For example, Mbeya and Kilimanjaro. Hence population distribution is caused by soil or edaphic factor.

Existence of employment opportunities. Areas with abundant opportunities or believed to be occupational cesspools tend to attract people or unemployed labour and hence are densely population. For instance, urban areas such as Dar es Salaam. While areas with limited employment opportunities discourage settlement for example most rural areas. This leads to rural-urban migration.



Extract 8 .1: A sample of a correct response for question 1

Furthermore, 22,404 (47.8%) candidates who scored from 7 to 11.5 marks revealed inadequate knowledge which restricted them to comment correctly on the nature of population distribution and the causes of population distribution in Tanzania. Some candidates mixed correct and incorrect answers, some made repetitions of points. Others wrote the characteristics of human population such as; *it is characterized by diseases, it faces problems, it has high illiteracy rate, it is dynamic, it is unevenly distributed, it is not uniform, it can be affected by factors like migration,* instead of the nature of population distribution.

On the other hand, 2,575 (5.5%) candidates who scored from 0 to 6.5 marks lacked the knowledge and skills on attempting this question. Some candidates failed to comment on the population distribution in Tanzania, some failed to show the causes of population distribution in Tanzania while others provided few correct points characterized by irrelevant explanations.

Some candidates in this category provided relevant introductions for population distribution, though most candidate explained the causes for population change such as *birth rates, death rates* and *migration,* instead of commenting on the nature of population distribution. In addition, some of them provided irrelevant conclusions.

Other candidates explained the importance of population such as; *it employs people, it educates people, it helps to increase national income* and *it helps to improve other sectors.* Others explained the basic characteristics of human population such as; *it faces problems, it is dynamic, it has age sex structure* and *it is unevenly distributed*. Extract 8.2 is a sample of an incorrect response for this question.

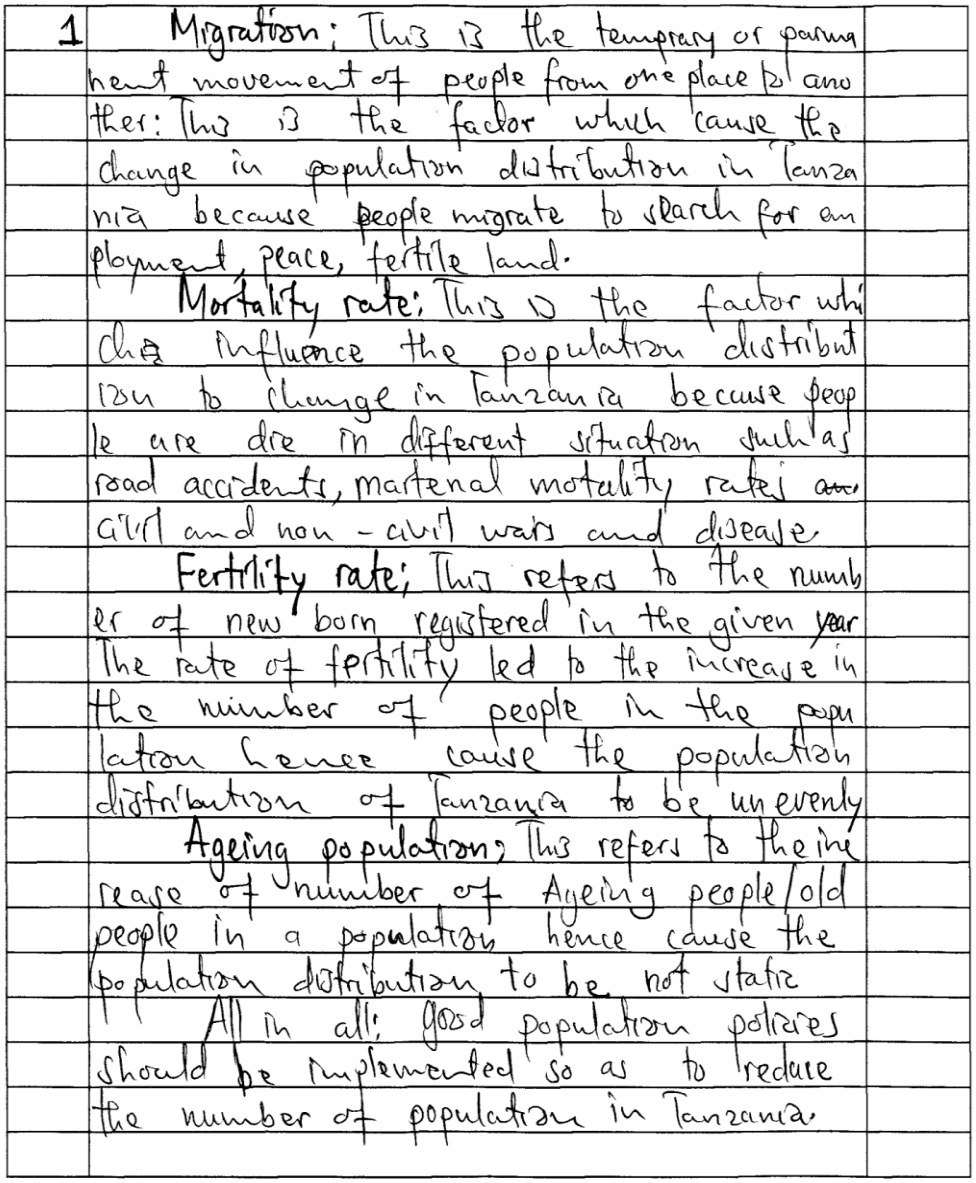
1 Population; Refers to the number of people at a given area in a given period of time. Population distribution is the way in which the population of an area is arranged and distributed. The nature of population distribution in Tanzania is as follows:

It is dynamic; The population distribution of Tanzania is dynamic because it change with change in ~~type~~ time Example during 2002 census the population distribution of Tanzania was about 34 million while 2012 census the population was above 50 million.

It is uneven; The Tanzania population distributi is uneven because not the whole country has the same population. There are areas which there is dense population such as urban areas while there are areas where is few population such as rural areas.

It has population problems; The populati on distribution in Tanzania faces the the population problems such as increase in disease and disease spread, overpopulation lead to un equal distribution on natural resources and other.

Facing development of science and technolo gy; The population distribution of Tanzania led to the growth of science and technology du e to the interaction between people of diffe rent places. The following are the cause s of population distribution in Tanzania.



1 Migration: This is the temprary or parma hent movement of people from one place to ano ther: This is the factor which cause the change in population distribution in Tanza nia because people migrate to search for em ployment, peace, fertile land.

Mortality rate: This is the factor whi ch influence the population distribut ion to change in Tanzania because peop le are die in different situation such as road accidents, martenal motality rate, civil and non - civil wars and disease.

Fertility rate: This refers to the numb er of new born registered in the given year The rate of fertility led to the increase in the number of people in the popu lation hence cause the population distribution of Tanzania to be unevenly

Ageing population: This refers to the in rease of number of Ageing people/old people in a population hence cause the population distribution to be not static

All in all: good population polices should be implemented so as to reduce the number of population in Tanzania.

Extract 8 .2: A sample of an incorrect response for question 1

In Extract 8.2, the candidate explained the characteristics of population such as; *it is dynamic, it is uneven, it faces population problems* and *it is facing development of science and technology* in the first part, instead of the nature of population distribution. In the second part, the candidate explained factors for population change such as *migration, mortality rate, fertility rate* and *ageing population* instead of explaining causes of population distribution in Tanzania. Such incorrect responses reveal that some candidates were not aware of the nature, causes, characteristics as well as factors affecting population in Tanzania.

2.2.2 Question 2: Population and Development

Candidates in this question were given the statement that "*In Tanzania, most population data for the majority is obtained from census*". Then, they were required to *provide four features of population census and four significance of the process*. The question carried a total of 20 marks.

The question was attempted by 42,109 (89.9%) candidates. The general performance was good since 41,671 (99.0%) candidates scored 7 marks or above. Further analysis showed that 35,650 (84.7%) candidates scored from 12 to 20 marks, 6,021(14.3%) scored from 7 to 11.5 marks and 438 (1%) scored from 0 to 6.5 marks. Figure 9 illustrates the performance for this question.

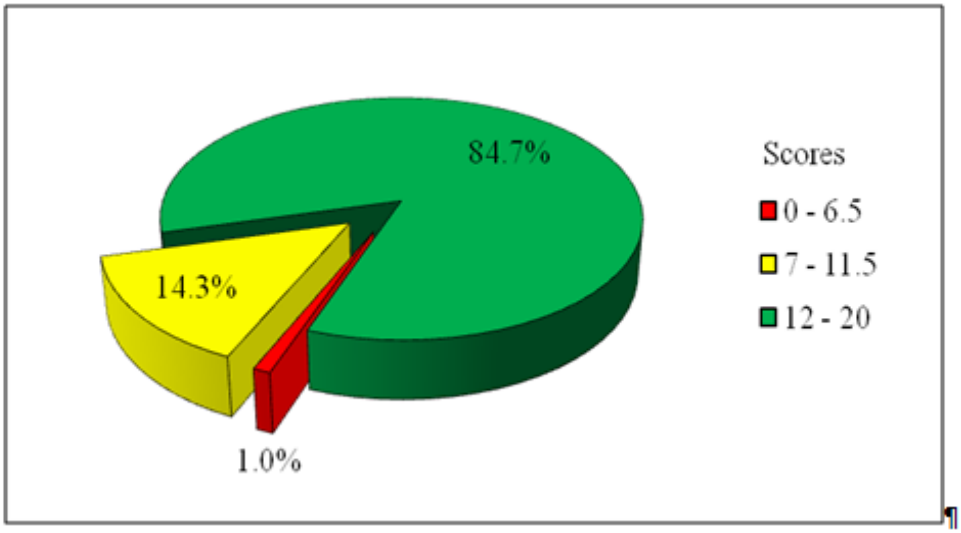


Figure 9: *Candidates' Performance for Question 2*

The analysis showed that 35,650 (84.7%) candidates who scored from 12 to 20 marks had adequate knowledge of the subject matter. Those candidates provided relevant introductions of population census, examined four features of population census and four significances of census. For example, one candidate defined population census as; *the process of collecting, compiling and publishing demographic, economic and social data pertaining to a specific time to all people in a country where it counts a total number of entities, like houses, land, and people.* The candidate explained the four features of population census such as; *it is universal, it is done periodically mainly after ten years, it involves individual enumeration where all people are counted* and *it is carried out simultaneously.*

Furthermore, the candidate explained the four significance of the population census process as; *they give out detailed statistics (demographic data) on the nature, size and distribution of labour force, they identify the level of education of the members of the population, they give out a total number of people by age and sex* and *they gave out the economic status of household and housing conditions, they give out the whole picture of member of places and persons, villages, wards, districts and all regions responsible for economic planning and project planning organization and others, information obtained is used on policy formation* and *it helps to understand the quality of life hence setting the aspects of living standard.*

The majority of candidates in this category concluded the answers by providing relevant conclusions. The variation of their scores was determined by the strengths and accuracy of their responses. Extract 9.1 represents a sample of a correct response from one of the candidate for this question.

2. In Tanzania, most population data for the majority is obtained from census. Explain four features and four significance of the process.

Population census, This refers to the process of collecting, compilling and publishing demographic data inorder to attain some demographic goals. Population is designed or conducted purposely to understand or determine different issues concerning the population of a given country. Tanzania is among the countries that conduct population census after a period of every ten years with the aim of determining issues concerning the population of the country. There are different features of population census. The following below are some of the features of population census;

Periodicity, Population census in Tanzania is carried or conducted after every ten years. This is done regularly and compulsory after every ten years. Example the last population census was conducted in 2012 in Tanzania where by it is also expected to be conducted ain this year August 2022. So, population census in Tanzania is periodizty

Universal within a given territory, Another feature of population census is that it is universal within a given territory. Population census is not conducted just for some people rather than it is conducted for all people. Therefore, all citizens within the given country, need to participate in this process.

Objectivity, Every population census is done purposely for attaining some demographic goals. No population census is done without objectives because so much amount of government funds is spent and

2. It causes people to leave and abandon their works inorder to partricipation in the collection of the data, So, among the features of population census is that it is objectivity.

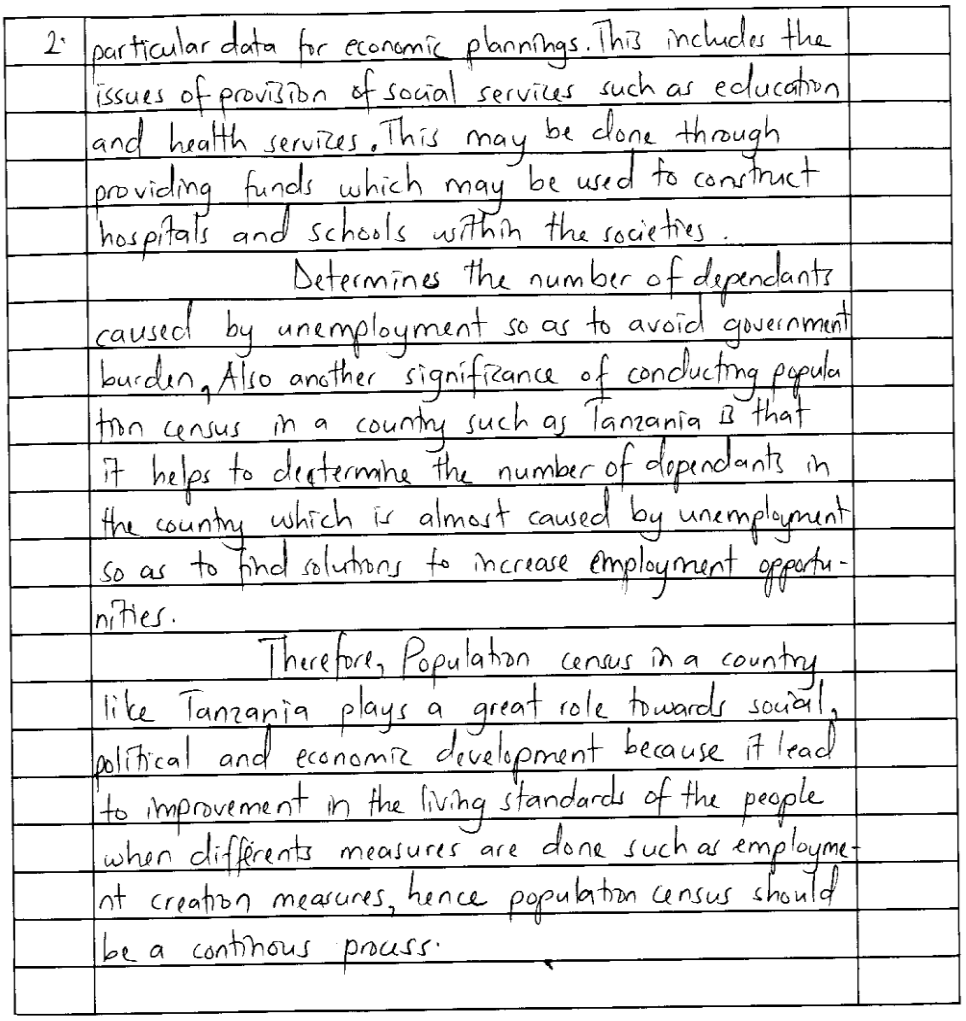
Funded by the government, Another feature of population census is that it is funded by the government. Only the government of Tanzania or the country is able to provide enough funds to facilitate the population census since it is a process which require large amount of money.

Apart from the features of population census, there are significances of conducting population census. The following below are some of the significances of population census;

~~For determining~~ Determines the population distribution of a country, Population census when conducted helps to determine how people are spread within different areas in the country. Population distribution in the country can either be dense population or sparce population. Therefore, after every 10 years, the government of Tanzania determines the population distribution of the country.

Determines population growth rate, Population growth rate can either be increasing or decreasing after a certain period of time. Therefore, since Tanzania conducts population census after every 10 years, it help to determine the rate of population, if it is growing at a high rate over time or if it is decreasing or remaining constant.

For economic planning by the government, Through collection, compiling and publication of the demographic data, the government may use that


2. particular data for economic plannings. This includes the issues of provision of social services such as education and health services. This may be done through providing funds which may be used to construct hospitals and schools within the societies.

Determines the number of dependants caused by unemployment so as to avoid government burden, Also another significance of conducting population census in a country such as Tanzania is that it helps to determine the number of dependants in the country which is almost caused by unemployment so as to find solutions to increase employment opportunities.

Therefore, Population census in a country like Tanzania plays a great role towards social, political and economic development because it lead to improvement in the living standards of the people when differents measures are done such as employment creation measures, hence population census should be a continous process.

Extract 9.1: A sample of a correct response for question 2

Furthermore, the 6,021 (14.3%) candidates who scored from 7 to 11.5 marks demonstrated inadequate knowledge and skills on the topic of Population and Development especially on the concept of the Population Census. Some candidates in this category gave relevant introductions of population census, explained insufficiently the four features of the population census and failed to explain clearly the significance of population census process. However, the majority provided irrelevant conclusions. Some provided correct introductions, failed to provide four features of population census but suggested correctly the four significances of the population census process in Tanzania. Others provided relevant introductions and correct significance of the population census, but mixed correct and incorrect features of the population census. For example, one candidate gave relevant introduction of census, correct significance of the

population census, but mixed correct and incorrect features of the population census and did not conclude. Examples of incorrect features of the population census were; *fertility* and *mortality*. Another candidate wrote types of census such as *de jure* and *de facto*. Correctness of their answers made them to vary in their scores.

The 438 (1%) candidates who scored from 0 to 6.5 marks showed incompetence in the topic of Population and Development, especially on the concept of the Population Census. A few candidates gave relevant introductions of the population census, but examined incorrect features of the population census and mixed correct and incorrect significances of population census. Some examined insufficiently the features of the population census and few correct significance of population census processes with no conclusion while others provided irrelevant introduction of population census, explained few features of census and its significance. One candidate for example, mixed correct and incorrect features of population census in Tanzania as; *census is dynamic, has age – sex structure* and *faces problems* and incorrect significance of the population census processes were; *provides labour, encourage development in science and technology and enhance industrial and trade developmen*t. Such a mixture of correct and incorrect responses depicts that some candidates did not master the Population and Development topic.

2.2.3 Question 3: Sustainable Fishing

Candidates in this question were given the statement that "*Fishing industry is not well developed in Tanzania despite having many water bodies and a long coastline*". Then, they were required to *analyse eight (8) efforts made by the government of Tanzania to improve the fishing industry sector*. The marks allocated for this question were 20.

The question was attempted by 38,866 (82.9%) candidates. The general performance was good since 37,726 (97.1%) scored 7 marks and above. The analysis showed that 27,744 (71.4%) candidates scored from 12 to 20 marks, 9,982 (25.7%) scored from 7 to 11.5 marks and 1,140 (2.9%) scored from 0 to 6.5 marks. Figure 10 illustrates the performance of the candidates for this question.

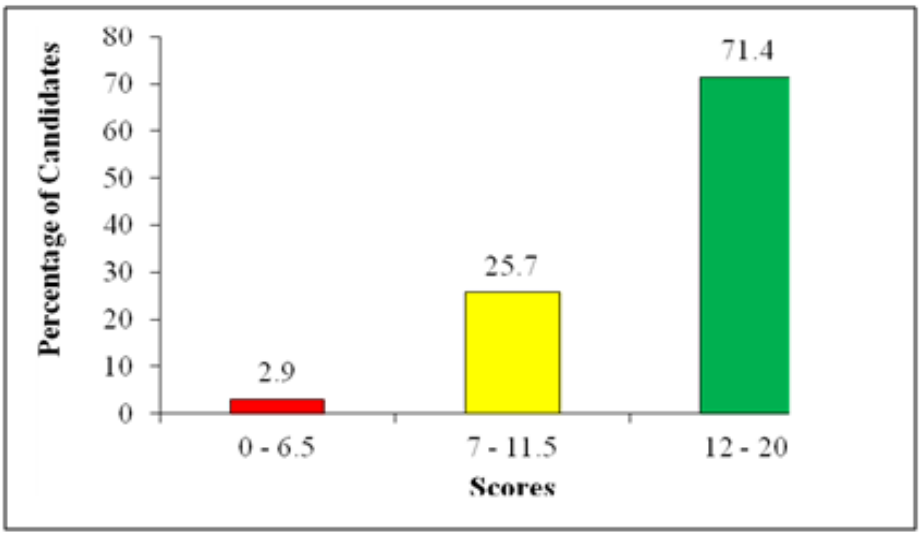


Figure 10: *Candidates' Performance for Question 3*

Further analysis showed that 27,744 (71.4%) candidates who scored from 12 to 20 marks demonstrated acceptable knowledge and skills on the subtopic of Sustainable Fishing. Those candidates gave relevant introductions for fishing industry, analyzed the eight efforts made by Tanzanian Government to improve fishing industry sector and gave relevant conclusions. For example, one candidate provided correct introduction for fishing industry as; *an economic activity of catching fish in ocean, seas and inland water such as lakes, rivers, wells and ponds for various social and economic importance.*

Also, they explained the eight efforts made by Tanzanian Government to improve the sector such as; *deep sea fishing is encouraged by the government of Tanzania, establishment of research stations like the Tanzania fisheries research institute, taking part in international agreement on territorial water, patrolling on both Indian ocean and lakes in order to stop overfishing and bad fishing methods, prohibiting fishing some types of fish breeds at a specific time, training man power in fishing as an occupation, opening fisheries departments in various part of the country and improvement of both domestic and international markets.* The variation of the candidates' scores in this category relied on the quality of their responses. Extract 10.1 is a sample of the correct response for this question.

2. Fishing industry refers to the process of extracting fishing resources. Fishing industry in Tanzania is not much developed despite having a lot of water bodies like lake Victoria, lake Nyasa as well as Tanganyika due to some factors such as pollution, poor fishing methods, low capital investment and overfishing which are the obstacles towards the development of this industry. Fishing areas in Tanzania include in lake Victoria and Tanganyika where different fish varieties are found.

The following are the efforts made by the government to improve fishing industry sector within the country.

3. The government provide education to the Fishermen on the proper ways of fishing; therefore the government has much encouraged to use proper methods which are scientifically agreed which could not destroy the habitat of fish in water. Example the use of refrigerators and establishing processing industries which are responsible for processing fishing resources. Therefore through education fishing industry in Tanzania should be improved.

The government introduced the strong campaigns to avoid pollution in water bodies; Example those people who live nearby the water bodies like lakes were encouraged to migrate going far away from such sources of water because were termed as a sources of pollution in those water bodies through dumping of radioactive material like plastic. Therefore through this campaign fishing industry could be improved

The government opened other areas for fishing; Areas of fishing in Tanzania has increased something which facilitate the development of fishing industry because has leads to the availability of fish varieties. Example areas like along the lake Victoria were opened to conduct fishing process something is the effort towards the development of fishing industries.

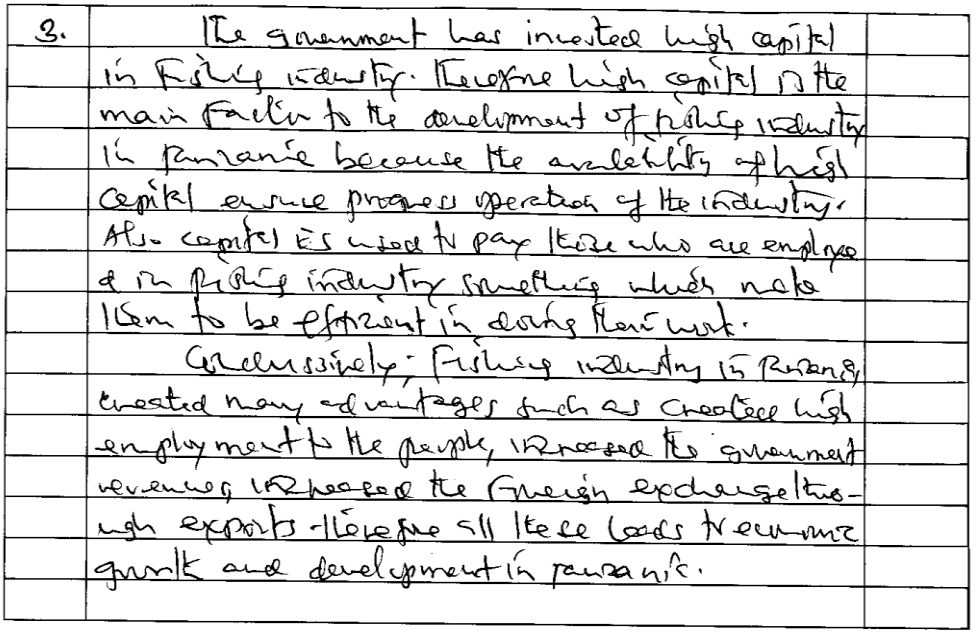
The government put more effort to avoid overfishing; Overfishing is an obstacle to the development of fishing industry in Tanzania because overfishing leads to reduction of fish in water bodies due to continuous fishi-

3. ng without giving chine for the fish to reproduce. Therefore such a fishing has much Condemned by the government. Therefore this also leads to the progress of fishing industry in the country.

The government has introduced the process of artificial fertilisation of eggs; This is the process whereby eggs are fertilized artificially which result into an increase in reproduction of fish. because it ensure fishing conservation which leads to improvement of aquatic life. Therefore fine areas like in lake victoria and nyasa were introduced with this process so as to increase the number of fish. Hence this leads to development of fishing industry.

The government emphasized people to Conserve the environment through afforestation and reforestation policy; Afforestation means the process of planting trees where there is no tree while of reforestation involves the process of planting trees where trees has been cut down. This process ensure the constant rainfall which supply water into water bodies which are used for fishing. Therefore through this policy fishing industry has been developed.

The government of tanzania has improved transport and communication network such as roads, railways, as well as telecommunication system which facilitate the transportation of fish products to the industry for processing. Therefore also this enhance the development of fishing industry in the country.


3. The government has invested high capital in fishing industry. The more high capital is the main factor to the development of fishing industry in Tanzania because the availability of high capital ensure progress operation of the industry. Also capital is used to pay those who are employed in fishing industry something which make them to be efficient in doing their work.

Conclusively, Fishing industry in Tanzania created many advantages such as creates high employment to the people, increased the government revenues, increased the foreign exchange through exports. Therefore all these leads to economic growth and development in Tanzania.

Extract 10.1: A sample of a correct response for question 3

Furthermore, 9,982 (25.7%) candidates who scored from 7 to 11.5 marks revealed inadequate knowledge and skills on the subtopic of Sustainable Fishing. Some candidates gave relevant introductions, described few correct efforts made by the government of Tanzania to improve fishing sector but they ended up with irrelevant conclusions. Some provided irrelevant introductions, mixed correct and incorrect efforts and the majority did not conclude. Others provided relevant introductions, but analysed inadequately the efforts made by the government to improve the sector. The majority of candidates provided irrelevant conclusions. Examples of incorrect conclusions were; *there is no much problems of water pollution since the ponds are kept clean* and *the idle land is utilized and hence is made productive*. However, the marks of candidates in this category varied depending on the strengths and weakness of their responses.

On the other hand, 1,140 (2.9%) candidates who scored from 0 to 6.5 marks showed unsatisfactory knowledge on the subtopic of Sustainable Fishing, especially on the efforts made by the government of Tanzania to improve the fishing sector. Some candidates in this category provided incorrect introductions of fishing industry, explained few correct efforts and

provided irrelevant conclusions. Some candidates mentioned the points without explaining, while others provided few correct efforts without concluding. In other extremes, some candidates provided introductions for manufacturing industry, instead of fishing industry and explained few correct efforts without giving conclusions. For example, one candidate wrote; *fishing industry refers to the industry which involves processing and changing the materials in order to make new products* instead of *an economic activity of catching fish in ocean, seas and inland waters such as lakes and rivers as well as ponds.* Extract 10.2 presents a sample of the candidate who failed to meet the demands of the question.

3. Fishing industry refer to the industries deals with catching of fish such as crabs and octopus from the waterbodies such as lakes, oceans and rivers. Fishing industry in Tanzania did not develop despite having many water bodies and a long coastline. Therefore the following are the reasons as to why fishing industry did not develop even after having many waterbodies and a long coastline.

Inadequate market the fishing industry in Tanzania lacks reliable markets whereby they cans sell their products (fish) so that they can get income and maximize their profits. Hence due to inadequate market makes fishermen get loose since there will be no place where they can sell their goods.

Shortage of enough Capital, due to shortage of capital acts as hinderance to the development of fishing industry whereby may fail to buy some fishing facilities such as ships and also will lack money to pay the workers which will make the fishing industry to decline which makes it not to develop.

3. Shortage of skilled and semi-skilled labourers, due to shortage of labourers who could work in fishing industry as fishermen captains and also to operate engines in the industry. Due to shortage of labourers makes the fishing industry to decline which made it not to develop.

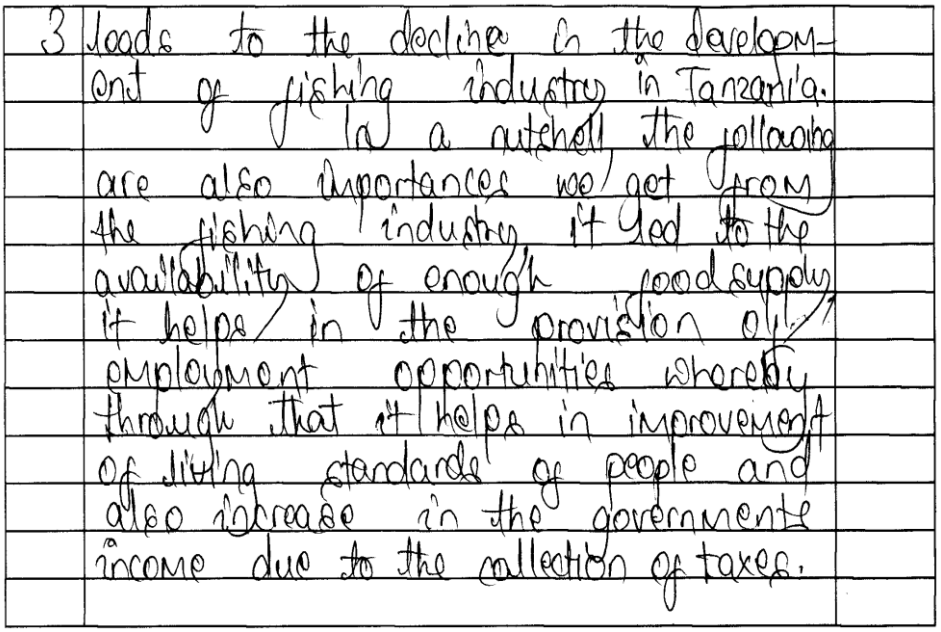
Poor government support, the tanzania government do not pay much attention in fishing industry but rather agriculture since is the backbone of our economy. Therefore due to that the government fail even to give loans so that the fishing industry to develop, as a result leads to the decline of fishing industry which also made it to not develop.

Water pollution, this refers to the emmission of various wastes such as sewages and other chemicals from the industry whereby it goes directly to the waterbodies hence endangers the aquatic lives such as of the fish, thus cause death of a lot of fish species which make the decline of fishing industry in tanzania which also made fishing industry not to develop.

8. Bad climatic changes due to changes of climate which leads to shortage of enough rainfall and causes water fluctuations. Hence some of the rivers dry and when they dry, they cause fishes in it to die / to due to lack of water for their survival. Hence the fishing industry lacks raw materials such as fish for its development which led to the decline of fishing industry in Tanzania.

Low level of science and technology due to presence of low level of science and technology led to decline of fishing industry since they could advanced and use modern tools such as refrigerators in order to store fish from getting rotten. Thus due to that make the raw materials to be of low quality and quantity which acts as hinderance in the development of fishing industry in Tanzania.

Lack of planktons, this planktons are found in water whereby it's the food for fish. Therefore due to lack of planktons makes fish to lack foods hence causes hunger and death of a lot fish to waterbodies thus cause low production which also


3 leads to the decline in the development of fishing industry in Tanzania. In a nutshell the following are also importances we get from the fishing industry it led to the availability of enough food supply it helps in the provision of employment opportunities whereby through that it helps in improvement of living standards of people and also increase in the government income due to the collection of taxes.

Extract 10.2: A sample of an incorrect answer for question 3

In Extract 10.2, the candidate explained the factors which hinder development of fishing industry such as; *inadequate market, inadequate capital, shortage of skilled labour, poor government support, water pollution, bad climatic changes, low level of science and technology* and *lack of planktons*, instead of the efforts made by the government of Tanzania to improve the fishing sector.

2.2.4 Question 4: Environmental Friendly Tourism

Candidates in this question were given the statement that "*Green tourism is a key to sustainable and friendly tourism.*" Then, they were required to *analyse four major principles of green tourism and four importance of the approach to the local community.* The question carried 20 marks.

The question was attempted by 8,187 (17.5%) candidates. The general performance was good since 7,267 (88.8%) scored 7 marks or above. The detailed data analysis showed that 5,051 (61.7%) candidates scored from 12 to 20 marks, 2,216 (27.1%) scored from 7 to 11.5 marks and 920 (11.2%) scored from 0 to 6.5 marks. Figure 11 illustrates the performance of the candidates for this question.

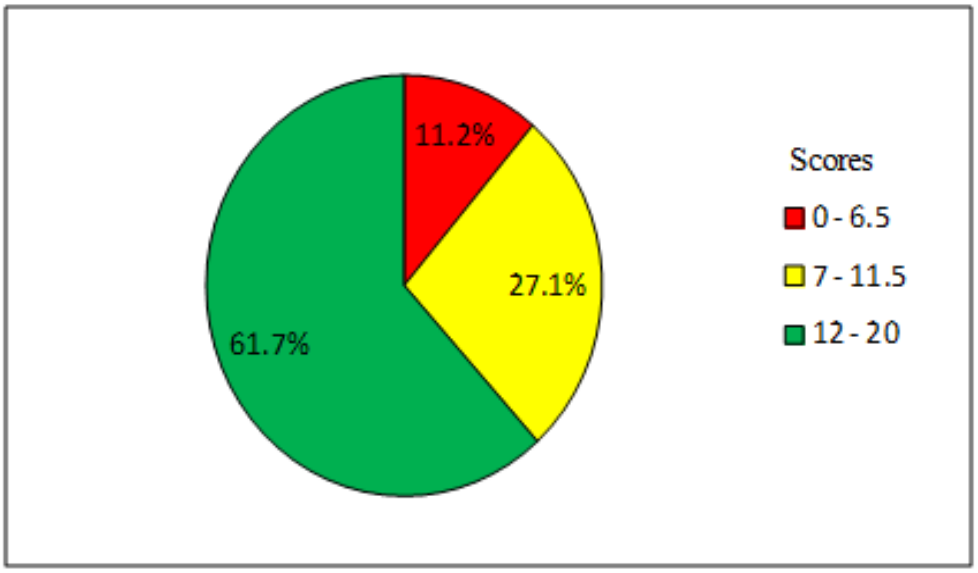


Figure 11: *Candidates' Performance for Question 4*

Furthermore, analysis showed that 5,051 (61.7%) candidates who scored from 12 to 20 marks showed adequate knowledge and skills on the topic of Environmental Friendly Tourism, especially on the concept of Green Tourism. Those candidates defined Green tourism, analysed correctly the four major principles of green tourism and explained the four importance of the approach to the local community. For example, one candidate defined Green tourism as: *an integrated approach that involves carrying out tourist activities with minimum negative impact possible on the natural environment*. The candidate analyzed the four major principles of Green tourism as; *it should be based on undisturbed environment and encourage carrying activities in a non- damaging manner, it should enhance altitude of conserving the environment among the people, it should strive to improve local communities locally and economically and it should promote positive interaction between tourist and local communities.* Also, she/he explained the importance of Green tourism to the local communities as: *it leads to the improvement of local communities through designing, organizing and controlling activities themselves, it promotes living standards of the people, preserving cultural aspects and environments of the local communities, it helps to control diseases such as HIV/AIDS.* Finally, the candidate provided a relevant conclusion by focusing on the importance of Green tourism to the country's economy for sustainable development. Extract 11.1 is a sample of a correct response for this question.

4. Green tourism refers to the undertaking of tourist ~~attractive~~ activities with minimal or no negative impacts to the environment. It is also known as eco-tourism. This is done so as to preserve the environment for the future generation and also to maintain the greenish nature of the country. Green tourism is a key to sustainable and friendly tourism. The following are the principles of the green tourism:

It should be based on undisturbed natural environment and the undertaking of these activities should be done in a clean environment. In green tourism, the tourists activities should take place with minimal negative impacts to the environment so as to keep the environment clean and fresh for other activities to be done and also to promote tourist activities.

It should promote awareness to the local people on the importances of green tourism and also on the strategies for conserving the environment. Green tourism mainly promotes awareness to the local people on the importance of practising tourist activities in an undisturbed natural environment. And also it makes the local people to be involved in the conservation activities and projects as well as programmes so that they can

4. maintain the cleanliness of the environment.

It promotes positive interaction between the tourists and the local community themselves. Green tourism encourages a positive interaction between the tourists and the local community through the good hospitality of the local people. Hereby through the positive interaction, international relationships can be strengthened, also the tourists will involve themselves in maintaining the cleanliness of the area/environment through cooperation. Hence maintaining a peaceful environment.

It establishes and encourages conservation attitudes to the local people. Green tourism through involvement increases sensitivity of the local people towards maintaining the cleanliness of the environment. This means that the local community encourages conservation attitudes towards maintaining the green nature of the environment; hence promoting green tourism.

The following are the significances of green tourism.

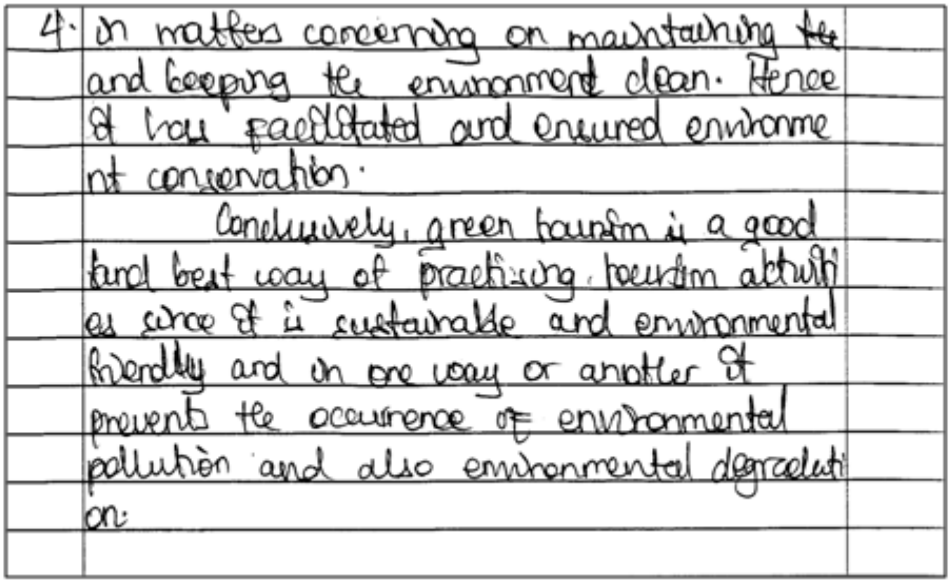
It has provided employment opportunities to the local community. People are now employed in various conservation projects and programmes to ensure the maintenance of the green nature of the environment

4. Whereby through these employment opportunities, the living standards of the people are promoted and improved hence encouraging people to be engaged in eco-tourism.

It has promoted awareness to the local people. Through green tourism people (local people) have become aware on the importances gained through the green tourism and also the strategies to conserve the environment. By this, the local community are involving themselves towards conservations projects and programmes hence maintains the cleanliness of the environment as well as the greenth nature of the environment in an area.

It has strengthened international relationships between the local community and the tourists. Through the positive interaction between people in the local community and the tourists has been used as a tool towards strengthening their internation al relationships. Due to this interrelations hip various things have been promoted like intermarriages, trading systems, transport networks leading to the economic growth of the country.

It has encouraged environment conservation. This is due to the involvement of local people in the conservation programm es and projects towards maintaining the clean nature of the environment. So due to this, the local people monitor each other


4. in matters concerning on maintaining the and keeping the environment clean. Hence it has facilitated and ensured environme nt conservation.

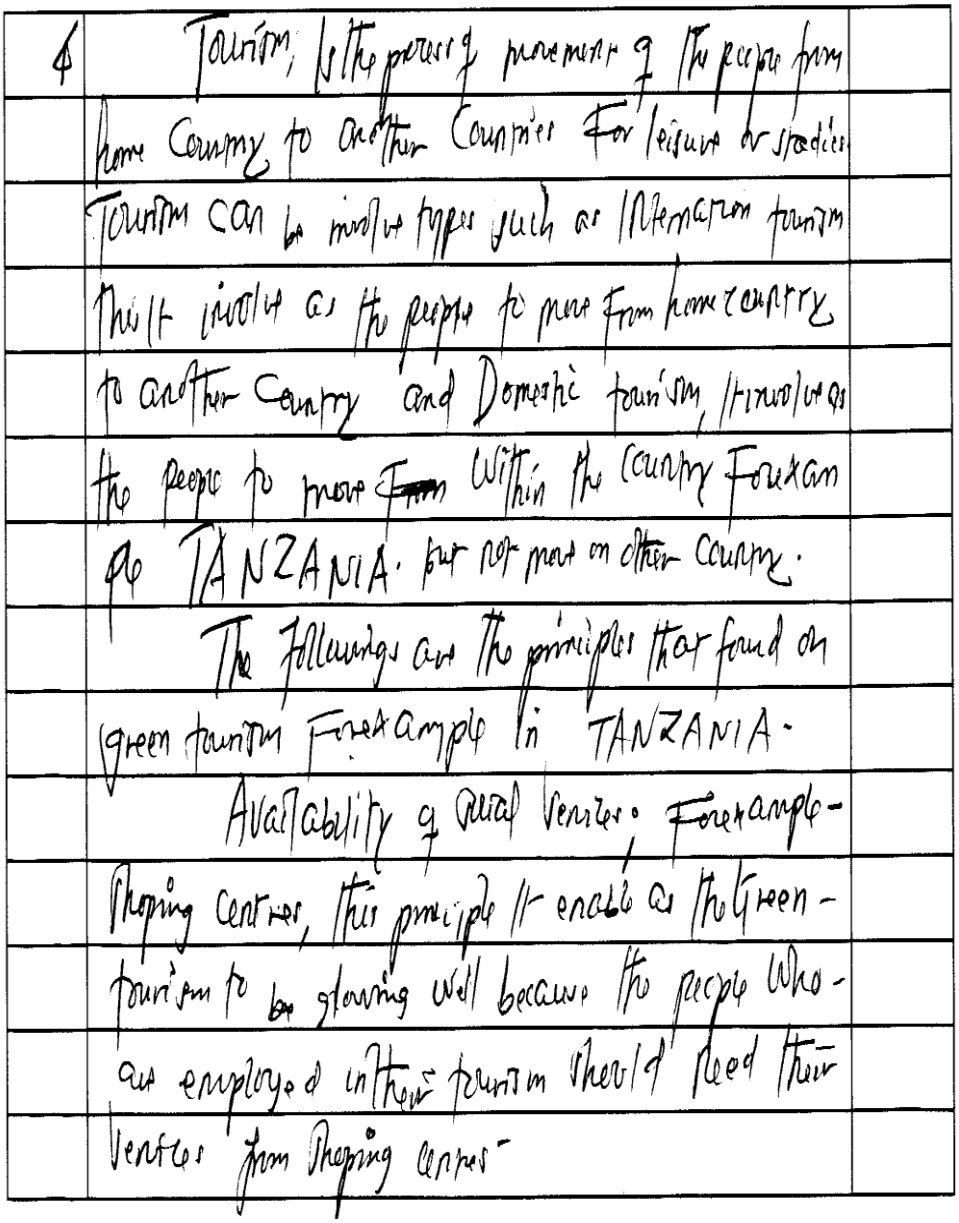
Conclusively, green tourism is a good and best way of practising tourism activiti es since it is sustainable and environmental friendly and in one way or another it prevents the occurrence of environmental pollution and also environmental degradati on.

Extract 11.1: A sample of a correct response for question 4

Moreover, 2,216 (27.1%) candidates who scored from 7 to 11.5 marks, revealed inadequate knowledge and skills on the concept of Green tourism and importance of the approach to the local communities. Some candidates, provided correct introductions for Green tourism, but analysed few correct principles of Green tourism. They also mixed correct and incorrect importance of Green tourism to the local communities and did not write conclusions. Some provided irrelevant introductions, explained only importance of Green tourism and ended with irrelevant conclusions. Examples of incorrect principles of Green – tourism given by some candidates in this group were as follows; *it should consist of plant species and it should consist of animal species*, while incorrect importance of Green - tourism were*; source of habitats* and *regulates the climate of a place.*

On the other hand, 920 (11.2%) candidates who scored from 0 to 6.5 marks revealed little knowledge on the subtopic tested. They lacked focus on the demands of the question, as result they ended with lower marks. Some candidates in this group provided relevant introductions for Green – tourism. They also analysed incorrect principles of green tourism and mixed correct and incorrect importance of this approach to the local communities. Some failed to give relevant conclusions, mentioned few principles and importance of Green – tourism without explanations and

ended with irrelevant conclusions. For example, one candidate gave irrelevant introduction of Green tourism and explained the importance of tourism instead of the basic principles for Green tourism such as; *provides employment, promotes participation of people in protecting environment, increase in national income* and *improves the living standard of people*. Extract 11.2 is a sample of a candidate's incorrect responses for this question.


4 Tourism, is the process of movement of the people from home country to another countries For leisure or studies. Tourism can be involve types such as International tourism that it involve as the people to move from home country to another country and Domestic tourism, it involves the people to move from within the country For exam ple TANZANIA. for not move on other country.

The followings are the principles that found on green tourism For example in TANZANIA.

Availability of retail Centres. For example - Shoping centres, this principle it enable as the Green - tourism to be growing well because the people who - are employed in their tourism should need their Centres from Shoping centres -

Presence of historical site. For example museum and Kondoa irangi; this was are the principles of green tourism that enable their tourism to be developed well. The people from different nation can come on Tanzania to see their historical sites mentioned above.

Presence of National park. For example Mikumi and vengeri; does their presence of national park with the country it enable as their industry to be sustainable.

Improvement of employement; also this was another principle for the green tourism; any tourism should be required the people who used as to running up their industries this it lead as the development green tourism.

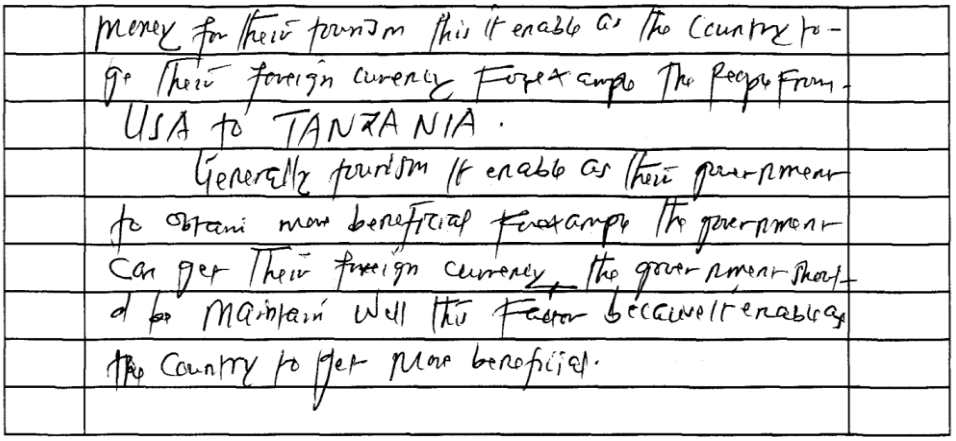
Apart from the principles of green tourism - also there is importance of green industry that approach to the local community; the following are the importance of green tourism that approach to their local community

It bring as international relation ship; through the presence of tourism it enable to bring internation relation ship because, there is different people who are coming from different nation and interact with the people who are found within the country ~~For~~ example the people The people From MAREKANI can interact with the people are in TANZANIAN this enable relation ship;

Advancement of technology; through this people coming from different nations can come in Tanzania ~~and~~ tourism and therefore can add their technology For their people who are found in Tanzania country

Introduction of new culture; For example - dancing and dressing style this it enable as the culture of Tanzanian nations to be improved through tourism.

It help the country to get their foreign currency through the people coming from different nation can pay


money for their tourism this it enable as the country to-
get their foreign currency. For example the people from
USA to TANZANIA.
Generally tourism it enable as their government
to obtain more beneficial. For example the government
can get their foreign currency, the government should
to maintain well this factor because it enables
the country to get more beneficial.

Extract 11.2: A sample of an incorrect response for question 4.

In extract 11.2, the candidate analysed the tourists' attractions such as: *availability of social services, presence of historical sites, presence of national parks* and *improvement of employment*. In the second part the candidate explained the importance of tourism such as: *it brings national income, advancement of technology, introduction of new culture* and *it helps the country to get foreign currency,* instead of analyzing the major principles and importance of Green tourism.

2.2.5 Question 5: Manufacturing Industries

Candidates in this question were given the statement that "*Iron and steel industry is very important in the human and economic development process since it has been useful in stimulating the development of other sectors.*" Then, they were required to explain eight factors that make a prosperous future for the development of iron and steel industry in Tanzania. A total of 20 marks was allocated for this question.

The question was attempted by 29,505 (63.0%) candidates. The general performance was good since 26,799 (90.8%) scored 7 marks and above. A detailed data analysis showed that 16,252 (55.1%) candidates scored from 12 to 20 marks, 10,542 (35.7%) scored from 7 to 11.5 marks and 2,706 (9.2%) scored from 0 to 6.5 marks. Figure 12 illustrates the performance of the candidates for this question.

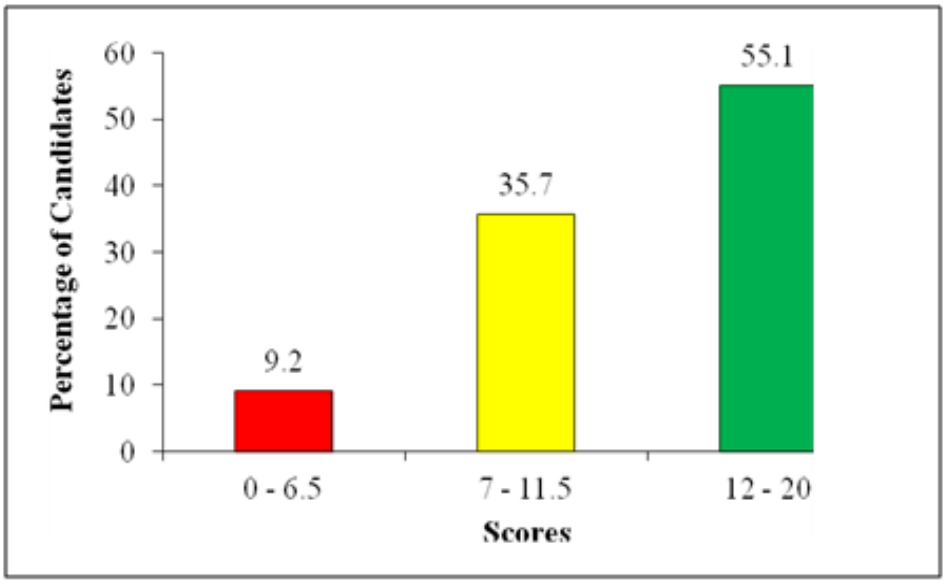


Figure 12: *Candidates' Performance for Question 5*

Further analysis shows that 16,252 (55.1%) candidates who scored from 12 to 20 marks had adequate knowledge and skills on the topic of Manufacturing Industries, especially the part of iron and steel industries. Those candidates gave relevant introductions for iron and steel industry, explained the eight correct factors that make a prosperous future of iron and steel industry in Tanzania and ended with relevant conclusions.

For example, one candidate provided a relevant introduction as; *iron and steel industry is very important in human and economic development process since it is useful in stimulating the development of other industries like car assembly, locomotive industries. Tanzania being among the East African countries has the brighter future as far iron and steel industry is concerned.*

The candidates in this category analysed correctly the factors that make iron and steel industry a prosperous future in Tanzania such as; *about 500 million tons of iron deposit has been discovered to exist in Liganga area (Njombe region) and Kisaki in Morogoro region, there are large deposit of power resources which include Chitewaka-Mchuchuma area with 300 millions of tons of coal and 20 million tons at Ilima area. The existing demand for construction material like iron bars have stimulated the government to think on establishing the iron and steel industry in Tanzania. There is the existence of power sources especially The Mwalimu Nyerere*

Dam Constructed at Rufiji river. The existence of iron and steel rolling industry in Tanga which has led to the strong inspiration in establishing iron and steel industry in Tanzania. The need to reduce the cost incurred in importing iron materials from other countries, discovery of Natural gas in Mtwara region which has provided hope for reliable supply of power hence industrial development in Tanzania and *establishment of special economic zones (industrial zones) as the initiative of enabling the country to attain industrialization.*

The candidates ended with relevant conclusions by suggesting the limiting factors for the future prosperity of iron and steel industry in Tanzania. The variation in their scores was influenced by the strengths and correctness of their responses. Extract 12:1 is a sample of a candidate's correct answer for this question.

5. Iron and steel industry is the industry that deals with the production of iron and steel using various ways for the use of other industries Tanzania has alot of potentials to enable it to develop the industry. It has almost 22 steel rolling industries producing about 200 tonnes per year. Such industries include Sita steel industry, Kamal, Coastal, unique, MM integrated and others. The following are the factors that make a prosperous future afor the development of iron and steel industry in Tanzania.

Existence of steel rolling industry in Tanga that is the unique steel rolling industry. There is a unique steel rolling in Tanga which acts as a motivation towards establishing more iron and steel industries in the country since the industry undergoes more development and produces alot of tonnes of iron and steel that are demanded by the people.

Existence of high demand for construction materials such as iron bars. Various construction activities in the country require iron materials in strengthening the structures being constructed. Example, the construction of bridges, the manufacture of trains/railway lines and others. The use of iron bars helps to make the physical infrastructure and other structures like building strong and durable such that they can stay for a long time.

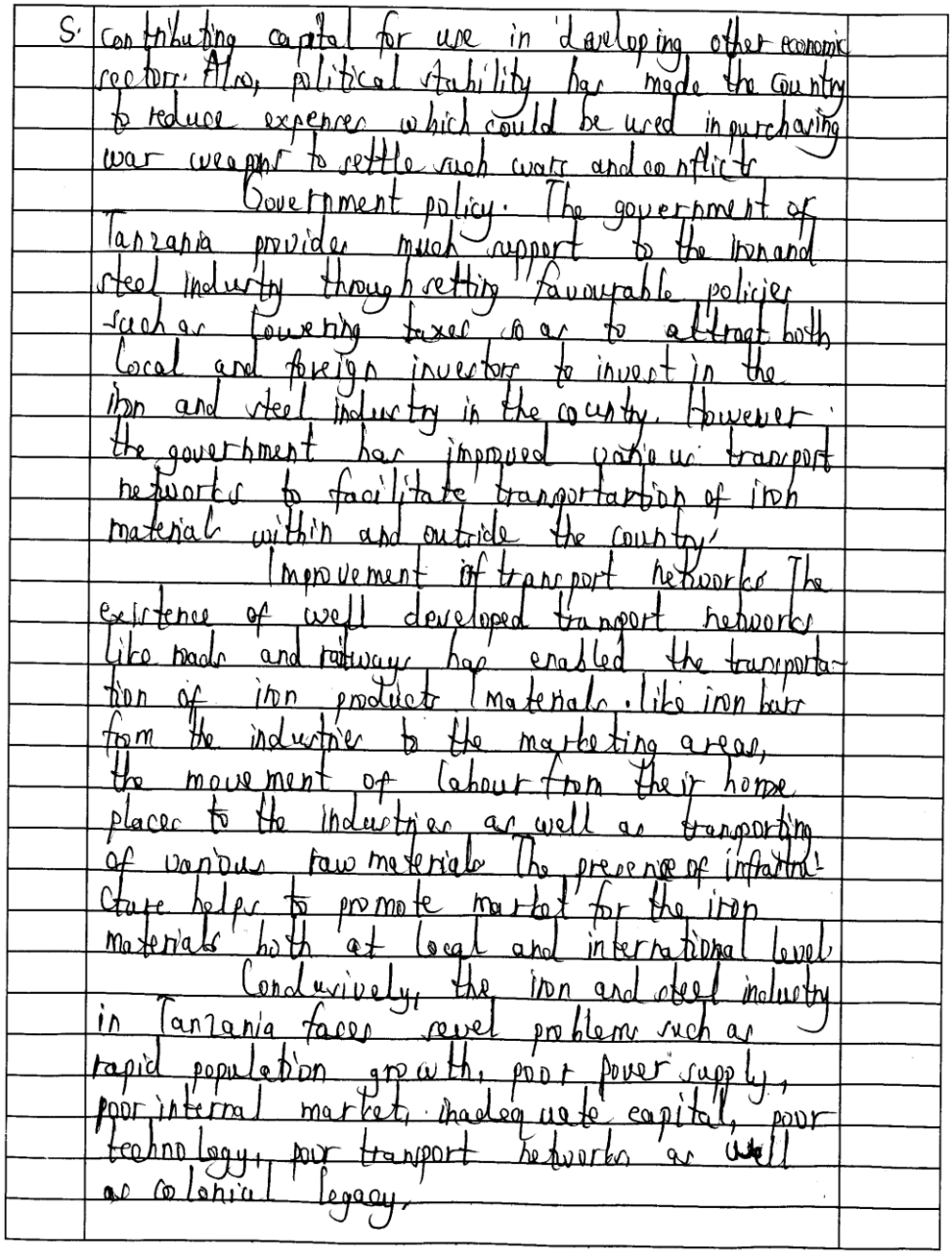
Existence of enough labour both skilled and unskilled. Tanzania has a large population which serves as labour to work in different iron and steel industries. The industries like

5. the unique steel rolling in Tanga required both the skilled and unskilled labour. The skilled Labour are needed to run machines in the industries used to manufacture iron materials as well as carrying out research, while the unskilled are needed for transportation of iron materials to other industries for use.

The need to reduce the cost of importing iron materials from other countries Tanzania realized that the importation of iron materials is very expensive than producing its own iron materials. Therefore this has encourage the establishment of many steel rolling industries such as Kamal, MM-Integrated, Unique, Coastal and sita steel hence leading to increased production of iron materials in the country.

Existence of large deposits of power resources in the country. Tanzania is supplied with adequate power resources such hydroelectric power generated from dams like Nyumba ya Mungu, Kidatu and Mtera dams. as well as Coal energy The presence of reliable power supply has influenced the running of machines used in manufacturing iron and steel as well as generating electricity for various uses like lighting and heating.

Political stability. Tanzania is one among a peaceful country which is free from civil wars and political conflicts. This has created a conducive environment for the investment by both the local and foreign investors in the iron and steel industry development which has led to the increase in employment to people as well as ...


5. Contributing capital for use in developing other economic sector. Also, political stability has made the country to reduce expenses which could be used in purchasing war weapon to settle such wars and conflicts.

Government policy. The government of Tanzania provides much support to the iron and steel industry through setting favourable policies such as lowering taxes so as to attract both local and foreign investors to invest in the iron and steel industry in the country. However, the government has improved various transport networks to facilitate transportation of iron material within and outside the country.

Improvement of transport networks. The existence of well developed transport networks like roads and railways has enabled the transportation of iron products/materials like iron bars from the industries to the marketing areas, the movement of labour from their home places to the industries as well as transporting of various raw materials. The presence of infrastructure helps to promote market for the iron materials both at local and international level.

Conclusively, the iron and steel industry in Tanzania faces several problems such as rapid population growth, poor power supply, poor internal market, inadequate capital, poor technology, poor transport networks as well as colonial legacy.

Extract 12.1: A sample of a correct response for question 5

Moreover, 10,542 (35.7%) candidates who scored from 7 to 11.5 marks had moderate knowledge and skills on the topic of Manufacturing Industries specifically the factors that make prosperous future of iron and steel industry in Tanzania. Some candidates provided relevant introductions, but mixed correct and incorrect factors and ended up with irrelevant conclusions. Some gave irrelevant introductions, analyzed inadequately ended up with irrelevant conclusions. Others provided relevant

introductions, mixed correct and incorrect factors but provided relevant conclusions. Examples of incorrect responses were; *development of other industries* and *improvement of employment opportunities*. Their marks varied due to strengths and weaknesses of their responses.

On the other hand, 2,706 (9.2%) candidates who scored from 0 to 6.5 marks revealed insufficient knowledge and skills on Manufacturing Industries specifically the iron and steel industry in Tanzania. Some of them failed to provide relevant introductions and correct factors that make a prosperous future for the development of iron and steel industry in Tanzania. Some explained few factors, while others failed to exhaust the points as demanded by the question.

For example, one candidate wrote the factors that influence the location of the iron and steel industry as; *presence of raw materials, political factors, market availability, transport costs, water supply, power sources* and *flatland*, while another candidate explained the factors for the development of iron and steel industry as; *improvement of science and technology, improvement of transport infrastructure, increase of experts, encouraging foreign investors, training industrial workers and improvement of water source*. This revealed that the candidates in this category misinterpreted the question or had little knowledge on the subject matter. Extract 12:2 is a sample of an incorrect response for question 5.

5. Iron and steel industry refer to the industries which deals with manufacturing of iron and steel products forexample Iron utensils and buildings apparetus. The followings are the factors that make a prosperous future to the development of Iron and steel industry in Tanzania:

It will increase employment opportunities which when the iron and steel industry well developed the large number of people will get the opportunities of employments for both skilled and unskilled people.

It stimulate growth of towns, the location of iron and steel industry will grow because the interaction of people from different areas stimulate the towns to be known forexample in Tanga.

It will stimulate development of infrastructure systems, because in order for transportation of raw materials of iron and steel from mining centers to the industry the roads should be acceptable to allow easy communication between those place.

It will increase growth of markets forexample import and export markets will develop due to coming of foreigners from different countries forexample Kenya, Uganda and South Africa to buy some products of iron and steel in our country.

5. It will increase foreign currency due to export trade our government will increase the foreign currency hence will developing-in economic sectors. Forexample currency of Kenya and South Africa (Rand).

It will stimulate the Tourism sector due to import and export trade between the Tanzania and other countries Iron and steel industry also encourage the development of Tourism hence increase in economic sector.

It will increase government revenue due to fees ~~payed by~~ paid by the foreigners when visit our country on studying and get recreation from our industry of Iron and steel will increase the revenue to the government.

It will improving living standard of people in Tanzania especially for those people who get opportunities of employments will improve in living standard also it help people to use iron and steel products as the alternative sources of building materials.

Generally the development of Iron and steel industry will initiate many importance to people of Tanzania but in order the industry to develop the government should support, Investment of enough capital, Improvement of infrastructure and ensuring power supply.

Extract 12.2: A sample of an incorrect response for question 5

In extract 12.2, the candidate explained the importance of iron and steel industry as; *it stimulates the development of tourism, it will improve living*

standard, it will increase government revenue, it will increase foreign currency, it will provide employment opportunities, it will improve development of infrastructure and *it will improve growth of market* instead of explaining the factors that make a prosperous future for the development of the iron and steel industry in Tanzania.

2.2.6 Question 6: Transport and Communication

The question required the candidates to use *four points to explain how the advancement of air transportation in Tanzania could be a catalyst to the economic transformation. Thereafter, the candidates were required to provide four constraints facing transport and communication sector*. This question had a total of 20 marks.

The question was attempted by 32,520 (69.4%) candidates. The general performance was good because 30,989 (95.3%) scored 7 marks and above. A detailed data analysis shows that 18,951 (58.3%) candidates scored from 12 to 20 marks, 12,038 (37.0%) scored from 7 to 11.5 marks and 1,531 (4.7%) scored from 0 to 6.5 marks. Figure 13 illustrates the performance of the candidates for this question.

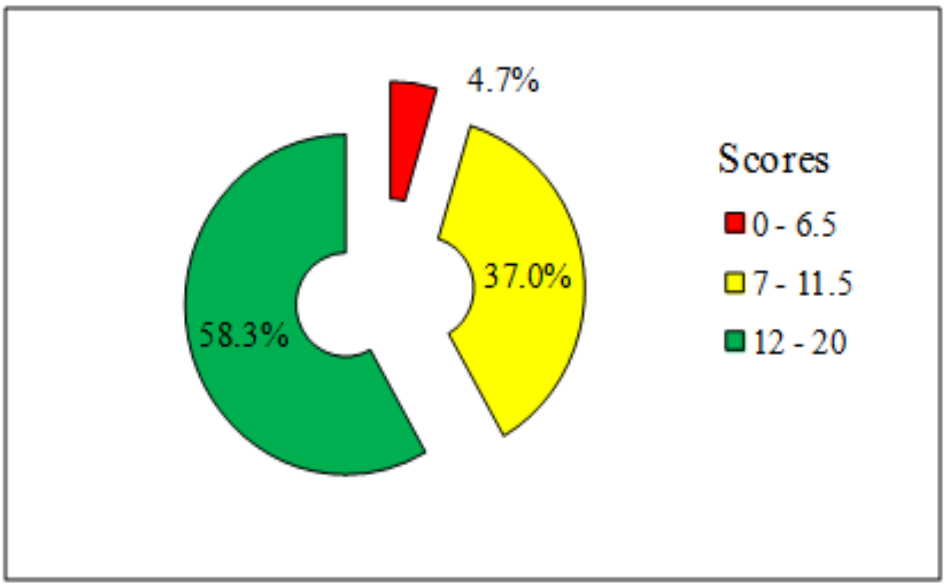


Figure 13: *Candidates' Performance for Question 6*

Data analysis for this question indicated that 18,951 (58.3%) candidates who scored from 12 to 20 marks demonstrated adequate knowledge and skills on the topic of Transport and Communication, especially on the

concept of Air transport. Those candidates gave correct introductions of Air transport, explained correctly how the advancement in air transportation in Tanzania could be the catalyst to the economic transformation in in the country. They furthermore, provided the four constrains facing this sector and finally wrote relevant conclusions. For example, one candidate defined Air transport as: *the fastest and latest means of transport where the first flight was made by the American write brothers in 1903 where it was used as a means of transport in the First World War.* Also, the candidate explained the reasons on how the advancement in Air transport could be a catalyst for economic transformation as: *it could facilitate the world trade, it could enhance the development of tourism industry especially in remote areas, it could facilitate the transfer of technology from other nations, it could create employment opportunities in air transportation sector, it provides quick, comfortable and efficient transportation services.* Moreover, the candidate explained the constraints that hinder the advancement of transport and communication in Tanzania such as: *lack of enough capital, poor market is also hindering the development of air transportation, poor technology for advancing infrastructure insufficient air terminals (airports)* and *lack of good vision in running travel business.* In addition, the candidate wrote a relevant conclusion. The variation of the candidates' marks in this category was influenced by the strengths and correctness of their responses. Extract 13.1 is a sample of a candidate's correct answer for this question.

6. Air transport, this is the form of transport in which involving movement of people, good and services from one place to another through air moving vessels such as aeroplanes, In tanzania, Development of air transport is the among of the Catalyst for the socio-economic transformation where by the goverment made different strategies so as to improve air transport forexample 'Our late President Doctor John Pombe Magufuli Engaging in buying different air planes and airbuses such as Boong and Bombadiers which facilitate movement of people together with good and services. Therefore due to that it could enable the economic transformation hence it lead to the socio-economic development due to the following factors.

Development of tourism sector, this are the one of the advantage of air transport, hence it facilitate development of tourism sectors forexample it facilitate importation of various people from outside countries who purposively need to make different tourism activities. Due to that it increase income in tourism sectors hence it make it to develop rapidly. Therefore there are the one of the significance of air transport in Tanzania to the economic tranformation.

Expansion of external market, then also, air transport facilitate the expansion of external market, forexample through aeroplanes, it facilitate exportation of good to other countries forstrance In Mwanza, presence of airplanes facilitate movement of fish to the outside countries which directly

6' facilitate the expansion of external market for the economic development. Therefore these are the among of the significance of the air transport in Tanzania economy.

Facilitate Movement of labours and raw materials then also these are the among of the significance of air transport where by these facilitate the movement of labour such as workers from one place to another for instance from Moshi to Dar-es-Salaam, Importation of experties from the developed Countries. Also raw materials to the industry which also facilitate development of industrial sector, Therefore these are the among of significance of air transport in the economy.

Development of science and technology, then also the availability of air transport facilitate development of science and technology hence because it ensure availability of foreign experties for example Tanzania Import different scientist and engineers from developed Countries which move through air transport. Therefore through presence of advanced science and technology it can influence the economic development.

Apart from the significance of the air transport the following are the constraints facing these sector.

It is costly hence it has small number travelers these also are the among of the constraints where by the air transport is costly hence it has small travellers for instance majority of Tanzania could not afford to travel with this means of transport hence they use buses, trains which is affordable to their level of economy.

6. Therefore due to that it fail to develop hence only Small people Could able to travel through those means of transport.

Shortage of Airports and Quality airports, Then also due to shortage of air ports, Tanzania fail to Increase number of air planes which Could able to Stimulate our national Economy forexample Tanzania has only three International air ports which qualified even to receive high air planes such as in Dar-es-Salaam (Mwalimu Julius Kambarage Nyerere International Airport), also Kilimanjaro International Airport (KIA) and in Mwanza. Therefore these also are the challenge for it development.

Inadequate of Skilled and Semi-Skilled Personel then also the Air Transport also face, the problem in terms of labours, where by Tanzania has low number of people who are qualified for transport moving vessels due to that most of them are not yet qualified also Tanzania has no University which produce degree for the pilots, Due to that it become the challenge even for it development.

Competition from other means of transport, also these sector face the problem of Competition even from other means of transport forexample Land transport and Marine transport which are Cheaper, available and affordable to most and Majority of Tanzanian. Therefore these also are the among of the Constraints that face air ~~Chatter~~ transport in Tanzania

6. Generally, the gavement should able to Incla reform in this sector hence because it has several Challenges. But also the government should Improve the education System So as to Increase the number of skilled personnel in this sector.

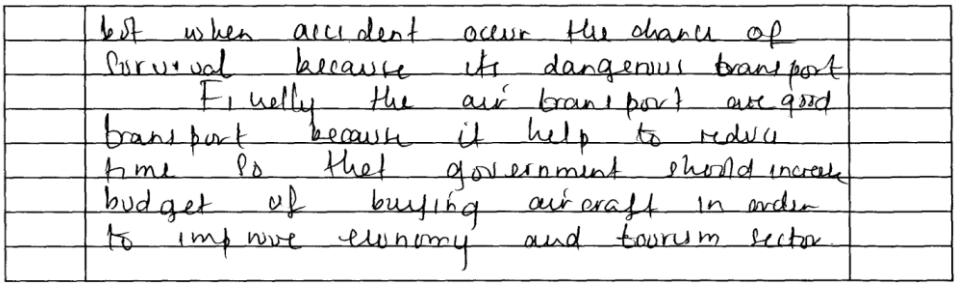
Extract 13.1: A sample of a correct response for question 6

Furthermore, 12,038 (37.0%) candidates who scored from 7 to 11.5 marks demonstrated moderate knowledge and skills on the topic of Transport and Communication, especially the concept of Air transport. Some candidates in this category provided relevant introduction about Air transport and explained moderately the reasons on how Air transport could be a catalyst to the economic transformation. Also the candidate explained insufficiently the constraints that hinder the development of Air transport in Tanzania. Some provided relevant introductions but explained only factors that hinder the development of air transportation in Tanzania, with irrelevant conclusions. Others were able to provide relevant introductions for Air transport but mixed correct and incorrect points on how the advancement of Air transport in Tanzania could be a catalyst to the economic transformation. Similarly, some candidates were averagely able to explain the constraints facing the development of Air transport. The strengths and weaknesses of their responses made variations in the marks.

Moreover, 1,531 (4.7%) candidates who scored from 0 to 6.5 marks lacked knowledge and skills on the topic of Transport and Communication especially the concept of Air transport. Some candidates did not provide relevant introductions, gave reasons on how the advancement of Air transport in Tanzania could be a catalyst to the economic transformation but wrote few correct factors that hinder the development of Air transport. Others provided irrelevant introductions, did not give reasons and they mixed correct and incorrect constraints facing this sector. Examples of incorrect constraints were; *weather condition hinder smooth transportation* and *it contributes to air pollution.* Another candidate explained the negative effects of transport and communication as *leads to accidents, facilitate terrorism* and *decline of other sectors due to its construction*. Their marks varied because of their disparities of their responses. Extract 13.2 is a sample of an incorrect response for this question.

6. Air transport is the type of transport which involve the transportation of people and their goods through air craft
Air transport in Tanzania are improved because of increasing number of aircraft in the country.
Air transport be a catalyst to the transforming economic due to the following
Air transport early way of transport of passenger, also through air transport because the commodities of people are well transported at long distance compare other transport.

Air transport is very faster during transportation, also the air transport use little time to transport passenger and can help to reduce more time to travel
Air transport reduce congestion, also the transportation of air transport are very important because there is no congestion in the air and this help to reduce time of travel
Air transport not involve door to door, also this help in the process travel and transporting the passenger in the specific time
The following are the constrain facing this sector
Air transport affected by weather condition, also this transport are well affected by weather condition and can cause stopping the process of travell
Forexample Affected by heavy rain or cloud
Air transport are very cost in term of fare, also the air transport are very costly so that it can bring many people can not to afford using of this transport because most of Tanzania people are poor
Air transport can not travel dangerous commodities, also the air transport are good transport but other commodities can not transport Forexample oil
It provide more effect when accident occur, also air transport is good transport


but when accident occur the chance of survival because its dangerous transport
Finally the air transport are good transport because it help to reduce time so that government should increase budget of buying aircraft in order to improve economy and tourism sector

Extract 13.2: A sample of an incorrect response for question 6

In Extract 13.2, the candidate explained the importance of air transport as*: easy way of transportation, air transport is very faster, it does not involve door to door* and *it reduces congestion*. In the second part, he/she explained the challenges facing air transport in Tanzania such as: *it is affected by weather changes, can not transport dangerous commodities, very cost full* and *it provides more effects when accidents occurs,* instead of explaining how the advancement of air transport in Tanzania could be a catalyst to the economic transformation and its constraints.

2.2.7 Question 7: Agricultural Development

This question required candidates to ‘‘*explore eight factors that enabled USA to be the greatest wheat producer in the world’’.* The total marks allocated for this question were 20.

The question was attempted by 36,141 (77.1%) candidates. The general performance was good since 35,884 (99.3%) scored 7 marks and above. The detailed analysis shows that 29,082 (80.5%) candidates scored from 12 to 20 marks, 6,802 (18.8%) scored from 7 to 11.5 marks and 257 (0.7%) scored from 0 to 6.5 marks. Figure 14 illustrates the performance of the candidates for this question.

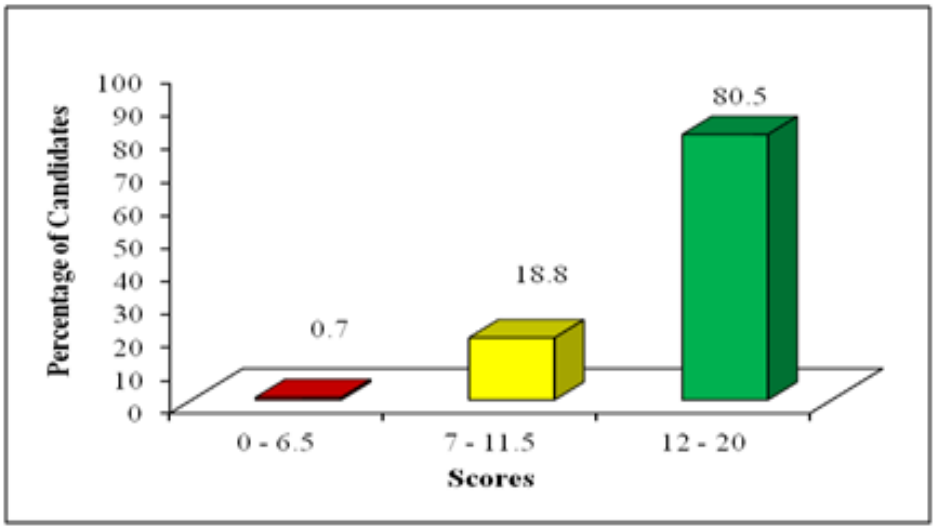


Figure 14: *Candidates' Performance for Question 7*

Further analysis showed that 29,082 (80.5%) candidates who scored from 12 to 20 marks showed adequate knowledge and skills on the topic of Agricultural Development, especially the factors that made USA the greatest wheat producer in the world. Those candidates wrote relevant introductions, explored correctly the eight factors that made USA to be the greatest wheat producer and ended up with relevant conclusions.

For example, one candidate provided a relevant introductions as; USA *is one of the leading wheat producer and exporters in the World. The current production is more than 20 million tons produced from about 27 million hectors (66 million acres) of land. Western* USA *is the major areas in* USA *where wheat is grown on large scale. Production dominates the Kansas, North Dakota, Nebraska and Montana which each state annual output is more than 3 million tonnes. The area is the continuation of Canadians Prairies and is leading commercial wheat region of America.* Also, the candidate explored the eight factors that made USA the greatest wheat producer in the world as; *extensive cheap land was available, the presence of reliable transport and communication network, the fertile soil which is full of humans where grass rooting fertile land, nature of the relief of the area, good climatic conditions, reliable market which offered large urban population, government support by creating agricultural policies, sufficient capital, skilled labour force* and *high level technology associated by modern research on climate seeds.* Finally, the candidate wrote a relevant conclusion. Extract 14.1 is a sample of a candidate's correct response for this question.

7. Wheat production refers to the process of farming, harvest, storing and processing wheat for various purposes such as commercial or food purposes. Wheat is a crop which is grown in areas of average temperature around 20°C and an average rain fall. It is mostly ground in various parts of the world. USA as the greatest wheat producer manufactures wheat of different type this include winter wheat and summa wheat. In USA, wheat is produced in states like North Dakota, minnepolis, minesota, Chicago, Illinois and many others.

The following are the factors that influences or favours USA to be the greatest wheat producer in the world.

Presence of good climatic and favourable condition: USA has a good climate that support various types of wheat production since wheat is produced in different seasons that is in winter season and spring season with summer season. Presence of favourable condition such as sufficient rainfall or presipitation on the harvest period. for example In North Dakota where Red winter wheat is mostly grown.

Advanced science and technology: One of the factors that is high level of technology has facilitated high production of wheat through the process of mechanisation which simply means using of machines so as to increase efficiency in plantation. Also In USA there are various science activities and centers which are responsible for combarting diseases affecting wheat For example in Minnepolis there are various wheat cooperation that ensures of.

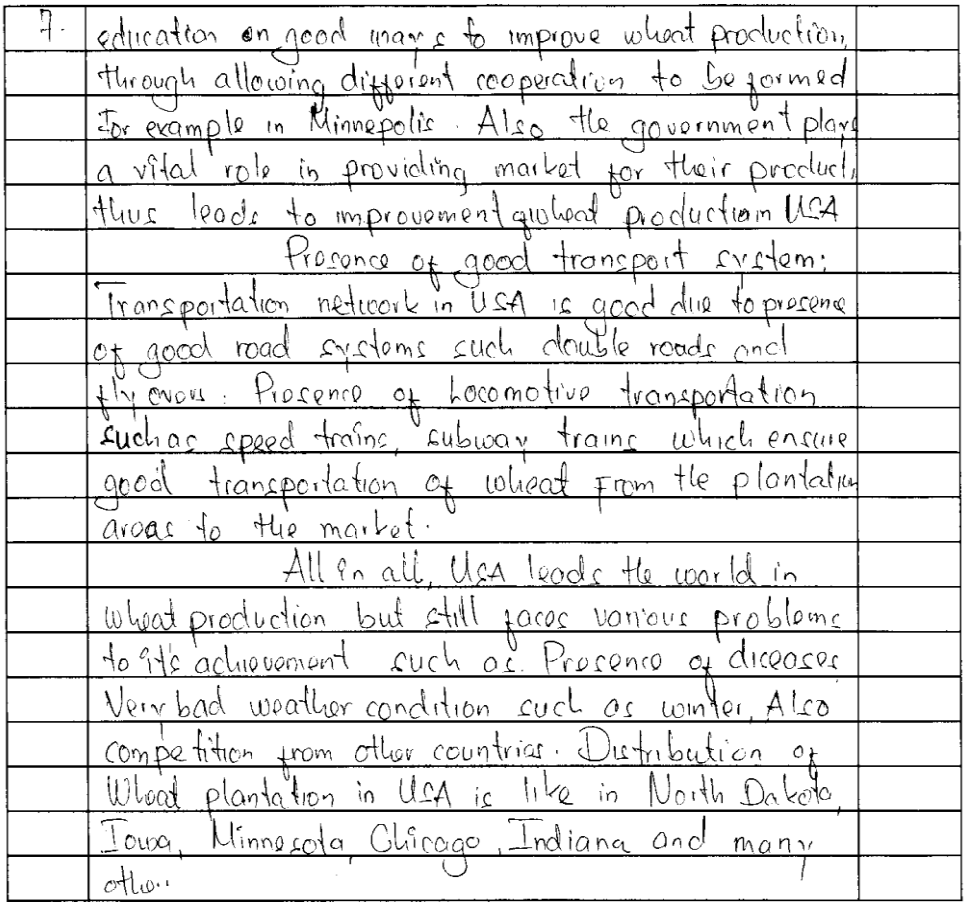
· 7 · Availability of large areas for plantation. USA is a large country with a good area for cultivation of wheat. There are very large farm with good fertile soil and favourable condition in such a way that it ensures profit maximization for the farmers. A good example is in Illinois where there is adverse climatic conditions which favour which wheat production.

Presence of reliable market: USA has a good source of market for its product both internal and external market. Internal market is ensured due to the high per capital income of people and presence of large population. Also USA exports it product to countries like Britain, Japan, China, France and many others over 17% of its product is exported due to high quality.

Availability of capital for wheat plantation: Most people in USA have high per capital income thus emphasises in investment of wheat production because the citizen find interest due to good mechanization and high market supply. Many people invest of large plantation either as a company or family business.

Presence of good number of Labours: USA is characterised by semi-skilled Labour and skilled Labour. Due to high population in USA there are very many employment opportunity in wheat production since they are skilled so Labour supply will be high thus gives USA a kingship in wheat producing in the world.

Good government support in wheat production: The government supports farmers by providing


7. education on good ways to improve wheat production, through allowing different cooperation to be formed For example in Minnepolis. Also the government plays a vital role in providing market for their product, thus leads to improvement gulwat production USA

Presence of good transport system:

Transportation network in USA is good due to presence of good road systems such double roads and flyovers. Presence of locomotive transportation such as speed trains, subway trains which ensure good transportation of wheat from the plantation areas to the market.

All in all, USA leads the world in wheat production but still faces various problems to its achievement such as. Presence of diseases Very bad weather condition such as winter, Also competition from other countries. Distribution of Wheat plantation in USA is like in North Dakota, Iowa, Minnesota, Chicago, Indiana and many other.

Extract 14.1: A sample of a correct response for question 7

Also the 6,802 (18.8%) candidates who scored from 7 to 11.5 marks had moderate knowledge and skills on the subtopic of Agricultural Development, especially in the factors that made USA the greatest wheat producer in the world. Some candidates provided relevant introductions referring to the subject matter, explained averagely the factors that made USA the greatest wheat producer in the world with relevant conclusions. Some gave irrelevant introductions, though they explained few correct factors with relevant conclusions while others provided relevant introductions, mixed correct and incorrect factors, but ended with relevant conclusions. Examples of incorrect responses were; *development of other sectors* and *collection of various taxes*.

On the other hand, 257 (0.7%) candidates who scored from 0 to 6.5 marks lacked knowledge and skills on the subtopic of Agricultural Development, especially in the factors that made USA the greatest wheat producer in the world. Most of those candidates provided irrelevant introductions,

explained insufficiently the factors which made USA to be the greatest wheat producer in the world and some failed to provide the relevant conclusions. For example, one candidate wrote factors which hinder the growth of wheat production in USA as; *pests and diseases, lack of market, poor capital, poor technology, lack of good climate* and *poor soil fertility*. The candidate finalized with irrelevant conclusion. Another candidate explained the factors for the industrial development as; *presence of abundance raw materials, industrial revolution* and *presence of infrastructures* instead of the factors which enabled USA to be the greatest wheat producer in the world.

3.0 PERFORMANCE OF CANDIDATES IN EACH TOPIC

The analysis of candidates' performance in paper one shows that they had good performance in 2 out of 7 topics examined. The topics with good performance were; *Study of Soils* ***(96.0%)*** and *Water masses* ***(74.3%)***. Furthermore, candidates had average performance in 2 topics; *Simple Survey and Map Making* (***35.6%***) and *Dynamic Earth and Consequences* ***(57.9%)***. Moreover, candidates had weak performance on the following topics of *Field Research Strategies* (***28%***), *Topographical Map Interpretation* ***(18.7%)*** and *Space Dynamics* (***24.5%)***. In paper two, candidates had good performance in all the 6 examined topics as follows: *Agricultural Development* ***(99.3%)***, Sustainable *Fishing* ***(97.1%)***, *Population and Development* ***(96.8%)***, *Transport and Communication* ***(95.3%)***, *Manufacturing Industries* ***(90.8%)*** and *Environmental Friendly Tourism* ***(85.0%)***.

The candidates performed well in these topics because of their ability to follow the required examination instructions, identify the demands of the questions and a good mastery of the subject matter. Furthermore, these candidates demonstrated good proficiency in English language which enabled them to provide logical arguments, clear explanations and meaningful sentences. The reasons that made the candidates to have average performance in some of the topics were; providing few points than those demanded in each question, mentioning correct points without satisfactory explanations, mixing correct and incorrect concepts and inability of the candidates to calculate and plot the traverse in Survey and Map Making.

The comparisons of the candidates' performance between the ACSEE 2021 and ACSEE 2022 shows that in 2021, the performance was good in 12 topics, average in 1 topic and there was no weak preformed topic. Therefore, the performance of the candidates in 113 Geography Advanced Certificate of Secondary Education Examination in 2022 has declined. However, the candidates' performance in both years remained constant (good) in *Population and Development, Study of Soils, Manufacturing Industries, Environmental Friendly Tourism* and *Water Masses* topics. On the other hand, the *Dynamic Earth and Consequences* topic which had good performance in 2021, its performance changed to average in 2022. Also, the *Space Dynamics and Topographical Map Interpretation* topics which had good performance in 2021 their performance changed into weak in 2022. The comparison of the candidates' performance in each topic for 2021 and 2022 is summarized in the appendix. The green colour indicates topics with good performance, yellow colour indicates topics with an average performance and red colour indicates topics with weak performance.

4.0 CONCLUSION

The general performance of the candidates in Geography subject for the Advanced Certificate of Secondary Examination (ACSEE) 2022 was 69.2 %, which is good. The analysis shows that the candidates' good performance was a result of their ability to recognize the demands of the question, their knowledge and skills, on the subject matter, their competence in English language writing skills and their mastery in calculation skills. The candidates with weak performance lacked those skills.

5.0 RECOMMENDATIONS

Basing on the observations made during the Candidates' Item Response Analysis (CIRA), the following recommendations are put forward in order to improve the performance of the prospective candidates for this subject.

(a) Teachers should guide the students the correct ways of reading and interpreting Topographical Maps.

(b) Classroom teaching and learning processes should be endowed with practical activities, especially in the topics of Field Research Strategies and Simple Survey and Map Making. It is believed that a student learns better if the learning process is endowed with a

support of concrete materials that give them experience and first-hand information. This might help students to gain competence in calculating, measuring and analyzing different phenomena.

(c) Guest speakers should be invited at schools, especially experts in different topics so as to improve students' performance on non practical topics like Space Dynamics.

Appendix

Comparison of candidates' Performance by Topic in 2021 and 2022 Years

S/N	Topic	2021			2022		
		Number of questions per topic	Percentage of candidates who scored an average of 35 Percent or	Remarks	Number of questions per topic	Percentage of candidates who scored an average of 35 Percent or	Remarks
1.	Agriculture Development				1	99.3	Good
2.	Sustainable Fishing				1	97.1	Good
3.	Population and Development	2	95.3	Good	1	96.8	Good
4.	Study of Soils	1	96.5	Good	1	96.0	Good
5.	Transport and communication				1	95.3	Good
6.	Manufacturing Industries	1	98.4	Good	1	90.8	Good
7.	Environmental Friendly Tourism	1	96.3	Good	1	85.0	Good
8.	Water Masses	1	81.5	Good	1	74.3	Good
9.	The Dynamic Earth and Consequences	1	81.3	Good	1	57.9	Average
10.	Simple Survey and Map making				1	35.6	Average

S/N	Topic	2021			2022		
		Number of questions per topic	Percentage of candidates who scored an average of 35 Percent or	Remarks	Number of questions per topic	Percentage of candidates who scored an average of 35 Percent or	Remarks
11.	Field Research Strategies				1	28	Weak
12.	Space Dynamics	1	92.1	Good	1	24.5	Weak
13.	Topographical Map Interpretation	1	79.1	Good	1	18.7	Weak
14.	Sustainable Mining	1	98.6	Good			
15.	Timber Industry	1	99.2	Good			
16.	Livestock Keeping	1	96.2	Good			
17.	Application of Statistics in Geography	1	93.8	Good			
18.	Photograph Interpretation	1	55.6	Average			