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

CANDIDATES' ITEMS RESPONSE ANALYSIS REPORT ON THE CERTIFICATE OF SECONDARY EDUCATION EXAMINATION (CSEE) 2022

GEOGRAPHY

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013 GEOGRAPHY

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FOREWORD

The National Examinations Council of Tanzania (NECTA) is pleased to issue the Candidates' Items Response Analysis (CIRA) report for the Certificate of Secondary Education Examination (CSEE), 2022 in the Geography subject. The report has been prepared to inform teachers, parents, policy makers, prospective candidates and the public in general on the performance of the candidates who sat for this examination.

This report analyses the candidates' performance for each question using statistical data. In addition, samples of responses from the scripts of the candidates are used for elaboration. The report also highlights some of the factors which made the candidates fail to score high marks in the questions. The factors include inability to understand the demands of the questions, inadequate knowledge of the topics tested and poor proficiency in English language. Moreover, the analysis highlights some of the factors which made some of the candidates score high marks. The factors include ability to understand the demands of the questions and candidates' adequate knowledge and skills on the subject content.

It is expected that the feedback provided in this report will enable the education administrators, school quality assurers, school managers, teachers and students in different capacities to come up with proper measures for improving the teaching and learning of the Geography subject.

The National Examinations Council of Tanzania expresses its sincere gratitude to everyone who participated in the preparation of this report.

Dr. Said Ally Mohamed
EXECUTIVE SECRETARY

1.0 INTRODUCTION

This report analyses the candidates' performance in the Geography subject paper for the Certificate of Secondary Education Examination (CSEE) conducted in November 2022. The examination assessed competences as per the Geography Subject Syllabus of 2005.

The Certificate of Secondary Education Examination (CSEE) results are analysed into five grades A, B, C, D and F with the following intervals: 75 – 100 (Excellent), 65 – 74 (Very Good), 45 – 64 (Good), 30 – 44 (Satisfactory) and 0 – 29 (Fail) respectively. The pass grade is 30 percent and above, that is, those who obtain grade A to D. According to the CSEE 2022 results, 519,271 candidates sat for this examination and 343,214 (66.10%) of them passed the examination. However, 176,057 (33.90%) candidates failed the examination by obtaining F grade. The statistics indicate that the performance of the candidates in this year has increased by 0.52 percent as compared to the performance of 2021 in which 60.55 percent of 483,641 candidates who had sat for the examination passed, and only 39.45 percent failed.

In this report, the analysis of candidates' performance is in three categories; *good*, *average* and *weak* indicated by *green*, *yellow* and *red* colours respectively. That means, in each question the performance is regarded as *good* if the scores range from 65 to 100 percent, *average* if the scores range from 30 to 64 percent and *weak* if the scores range from 0 to 29 percent.

2.0 ANALYSIS OF CANDIDATES' RESPONSES IN EACH QUESTION

2.1 SECTION A: OBJECTIVE QUESTIONS

This section is composed of two compulsory questions with a total of 15 marks. Question 1 consisted of 10 multiple choice items carrying a total of 10 marks and question 2 consisted of one matching item with five premises 5 which carried a total of 05 marks making a total of 15 marks in the section.

2.1.1 Question 1: Multiple Choice Items

This question aimed at testing the candidates' knowledge on *Weather, The Solar System, Environmental Issues and Management, Forces that Affect the Earth, Agriculture, Soil* and *Sustainable Mining topics/sub-topics.* It covered the ordinary level Geography syllabus. Each items had 5 alternatives. The candidates were instructed to choose the correct answer out of the five alternatives, whereby each item carried 1 mark.

A total of 520,841 (100 %) candidates attempted this question. The analysis of data on performance shows that, 169,833 (32.61%) candidates scored from 00 to 02 marks, 321,198 (61.67%) scored from 03 to 06 marks and 29,810 (5.72%) scored between 07 to 10 marks. Figure 1 illustrates the performance of the candidates on this question.

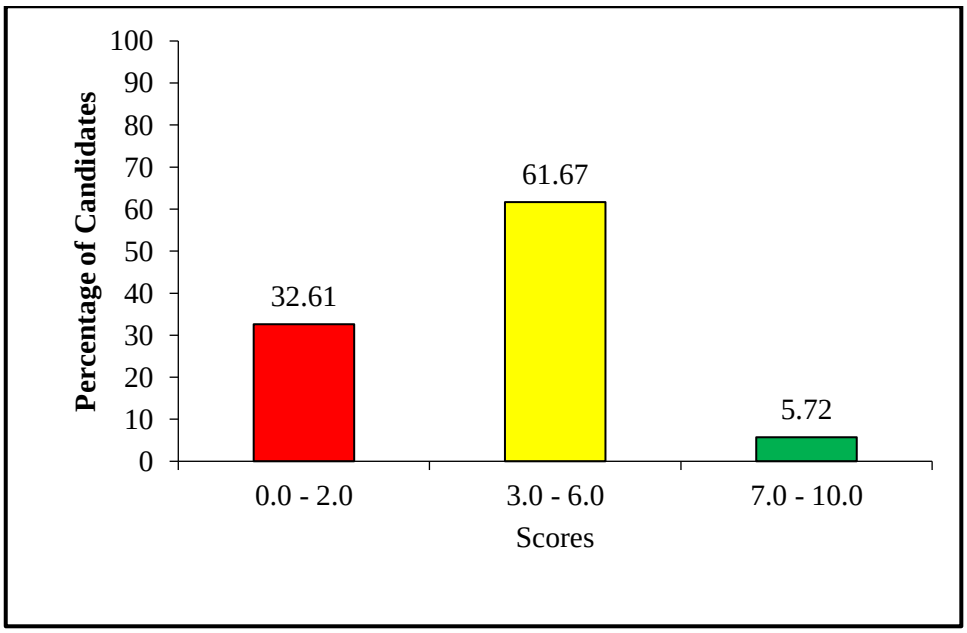


Figure 1. The candidates' performance on question 1

Figure 1 shows that the general performance for this question was good because 67.39 per cent of the candidates had average scores and above. Those candidates had adequate knowledge of the content covered in these items.

Despite the good performance observed, 32.61 per cent of the candidates had weak performance on this question. Those candidates failed to choose the correct response in almost all items. The following is the analysis of candidates' response in each item (i) – (x):

(i) Which set of elements of weather are mainly used to classify climate of an area?

A Humidity and precipitation
B Temperature and rainfall
C Temperature and sun shine
D Temperature and humidity
E Wind and temperature

The correct response for this item was B, *Temperature, and rainfall*. The candidates who chose the correct answer, had sufficient knowledge of the concept of *weather* as they managed to recall elements of weather that are used to classify climate. On the other hand, those who opted for distractors, *A, Humidity and Precipitation, C, Temperature and Sunshine and D, Temperature and Humidity* failed to remember that humidity and sunshine are the elements of weather but are not mainly used to classify climate. Likewise, those who opted for distractor E, *Wind and temperature* also failed to recognize that, wind is not used to classify climate but rather is used to determine the directions of global and local winds.

(ii) The local time at Greenwich Meridian is 10:30 am on Thursday. What will be the time at longitude 180^0E?

A 10:30 pm on Thursday
B 10:30 am on Wednesday
C 12:30 am on Wednesday
D 11:00 am on Friday
E 12:00 pm on Thursday

Candidates who chose correct answer A, *10:30 pm on Thursday* revealed sufficient knowledge of application of parallels and meridians in local time calculations. They managed to calculate the difference in time between the given degrees and added that time to the given time to get the correct time

(10:30 *pm).* The candidates who opted for distractors B, C, D and E had insufficient understanding of the subject matter as they failed to calculate the difference in longitudes degree and ultimately the difference in time between the two locations. They also failed to recognize when to add or subtract the time regarding the Greenwich Mean Time (GMT).

(iii) Which one is a major environmental problem facing most of African cities?

A	*Loss of biodiversity*	*B*	*Soil erosion*
C	*pollution*	*D*	*Deforestation*
E	*Overgrazing*		

The correct response for this item was C, *Air pollution.* Candidates who chose the correct response identified the major environmental problem facing most African cities out of several others. Candidates who opted for B, *Soil erosion, D, Deforestation* and *E Overgrazing* had a general understanding of the common environmental problems facing most African countries and not in the cities. These candidates failed to recall that among the listed environmental problems, air pollution is most common in cities due to the presence of industries and motor vehicle engines which produce air pollutants.

(iv) Suppose you were walking along river Rufiji, and you had a chance to observe the drainage pattern with uniform rock structure and rock resistance, suggest the name of that drainage pattern.

A	*Dendritic*	*B*	*Trellis*	*C*	*Radial*
D	*Parallel*	*E*	*Centripetal*		

The correct response for this item was A, *Dendritic*. The candidates who responded correctly had a good understanding of the topic of *forces that affect the Earth*'s *surface* specifically on the subtopic of external forces (*Erosion and deposition by running water*) as they recalled the nature and structure of the rocks which influence such type of drainage pattern. Those who chose distractor B, *Trellis* and D, *Parallel* had inadequate knowledge on descriptions of drainage patterns because *Trellis drainage pattern mostly developed in the rock with alternative hard and soft rocks fracture with several straight faults making the tributaries join the main stream at*

almost right angle and *the Parallel drainage pattern is developed parallel to one another deep slope of the escarpment.*

On the other hand, those who opted for distractors C, *Radial* and E, *Centripetal* failed to remember the nature of rocks and the associated pattern/layout of the tributaries. This is because slope influences the structure of those drainage patterns. Actually, *Centripetal drainage pattern* is influenced by the slope in the inland basin while *the Radial drainage pattern* is influenced by a slope commonly on volcanic cones or peaks of the mountain down slope. Contrarily, to the drainage pattern formed in areas with uniform rock structure and rock resistance.

(v) Suppose you are living in an urban center, and you are interested in keeping livestock. What type of livestock keeping would be suitable for you?

A Sedentary	*B Transhumance*	*C Ranching*
D Pastoralism	*E Nomadism*	

The correct response for this item was A, *Sedentary*. The candidates who chose this distractor had adequate knowledge of the types of livestock keeping; *Sedentary livestock keeping* (*Zero grazing*) involves the keeping of small number of livestock in a shed. Therefore, the one who lives in the urban centre is limited to this method because he/she cannot practise the other methods which involves movement of livestock. On the other hand, candidates who opted for distractors B - *Transhumance* and E *Nomadism* had insufficient understanding of the concept since they failed to understand that keeping livestock in urban areas is limited to movements. Those who opted for distractor C- *Ranching*, failed to differentiate the scale of keeping livestock in urban centres and those in an extensive areas. Likewise, those who opted for option D- *Pastoralism*, had adequate knowledge of general name for livestock keeping but was not aware that pastoralism involves movement with the cattle hence can not be practiced in urban areas.

(vi) Which earth crust processes caused the formation of Uluguru mountains?

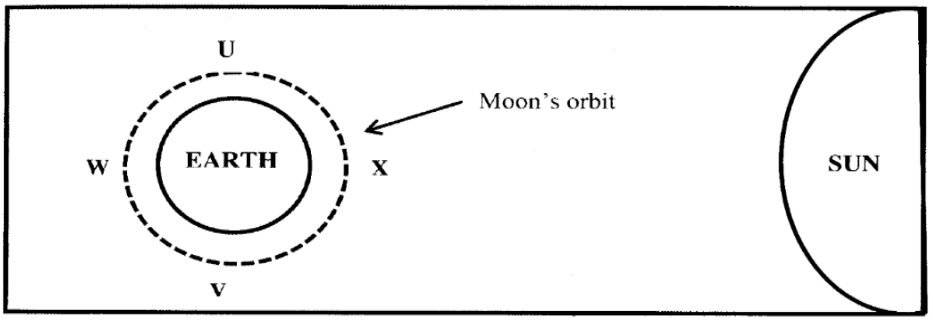
A Prolonged denudation *B Wrinkling of the earth's crust*
C Sinking of the earth's crust *D Outflow and spread of lava*
E Faulting of the earth's crust

The correct response for this item was E, *Faulting of the earth's crust.* Candidates who chose correct response had sufficient knowledge about how various forces affect the earth's crust and the resulting features. Those candidates managed to recall that Uluguru mountains are block mountains whose formation resulted from faulting of the earth's crust due to vertical or lateral movement of the crustal rocks.

On the other hand, candidates who chose distractor B, *the Wrinkling of the earth's crust* could not differentiate formation of fold block and mountains as the first is formed by the process of wrinkling of the earth's crust.

Moreover, candidates who chose distractor C, *sinking of the Earth's crust had inadequate knowledge of faulting activities as sinking of the Earth's crust is caused by* effect of the earth's crustal movement (displacement). In addition to that, candidates who chose distractors A, *Prolonged denudation* and D, *Outflow and spread of lava* had inadequate knowledge on how different types of mountains are formed. Actually, Uluguru Mountains were formed due to internal forces *(Earth's movements*) and not external forces *(denudation*).

(vii) The following diagram shows the sun, the Earth, and the orbit of the Moon around the earth. Study it carefully and then answers the question that follows:



At which position of the moon is lunar eclipse likely to occur?

A V *B W* *C U and V*
D U *E X*

The correct response in item (vii) was *B, W*. The candidates who chose the correct responses had a good understanding of how lunar eclipse occurs. They were aware that, a lunar eclipse occurs when the earth passes through the shadow of the Earth when the three object makes a straight line. On the other hand, those who opted for distractor *E, X* had inadequate knowledge on the location of the moon for the occurrence of lunar eclipse. They failed to recall that lunar eclipse occurs when Earth passes between the moon, the sun, and Earth's shadow cast on the moon. In addition, those who opted for distractors *C, U* and *V* and *D, U* had inadequate knowledge about eclipses (that is the position of the Earth or the moon to intercept the light from the sun), as a result, they ended up choosing in correct responses.

(viii) Husna *and his young brother Hamid like to play with wet soil around* their home. *They enjoy observing quick percolation of the water in the soil. What types of soil were they playing with?*

A Clay *B Silt* *C Loam*
D Sand *E Silt and clay*

The correct response for this item was D, *Sand*. The candidates who chose this correct alternative had adequate knowledge on the characteristics of different types of soil texture. The candidates were aware that sand particles feel gritty when rubbing between the fingers and that, it allows quick percolation of water. The candidates who opted for the distractors A-*Clay*, B-*Silt*, C-*Loam* and E- *Silt and clay* had an insufficient knowledge of soil texture since they failed to identify the type of soil, which allows quick percolation of water. Actually, clay soil is compacted when wet and does not allow water to percolate through it. Silt and loam soils have very fine particles with minimal pore spaces hence, it allows water to pass through very slowly and have high moisture holding capacity. Likewise, silt and clay soil have small pore spaces that allow water to pass through them very slowly and sometimes when saturated does not allow water to pass through.

(ix) Earthquakes and volcanoes have a clear identification pattern over the Earth's surface. Which area is not prone to earthquakes and volcanoes?

A Coast of Alaska *B East African rift valley*
C Andes Mountain *D Himalayan belt*
E Sahara Desert

The correct response for this item was E, *Sahara Desert.* The candidates who chose the correct answer had sufficient knowledge of the *Forces that Affect the Earth's Surface* topic, particularly on earthquakes and volcanicity. Those candidates understood the global locations of earthquakes and volcanic activities. They were also aware that areas found along the boundaries of tectonic plates are prone to earthquakes and volcanoes. On the contrary, candidates who chose distractors A, *Coast of Alaska*, B, *East African rift valley*, *C*, *Andes Mountain* and D, *Himalayan belt* were not aware that all these places form major earthquakes and volcanic belts of the world hence are prone to earthquakes and volcanoes.

(x) Which location of mineral occurrence is best for shaft method of mining?

A Horizontal to the earth's surface
B Very close to the Earth's surface
C In a river valley
D On the earth's surface
E Lay deep into the earth's surface

The correct response was E, *Lay deep into the Earth's surface.* The candidates who chose the correct response had adequate knowledge of *Sustainable Mining* topic, especially on the classification of mining methods. Those candidates understood that, underground or shaft mining is the mining method used to excavate hard rocks to get valuable minerals which lay very deep under the Earth's surface. Those who opted for distractors A- *Horizontal to the earth's surface*, B- *Very close to the Earth's surface*, C *In a river valley* - and D- *On the earth's surface* failed to relate different locations of mineral occurrence to specific mining methods.

2.1.2 Question 2: Matching Items: Climate and Natural Regions

The question composed one matching item consisted of five premises from the topic of *Climate and Natural Regions* under the sub topic *World Climatic types and their characteristics*. The question required candidates to match the type of climate in List A with their corresponding latitude North and South of the Equator in List B, by writing the letter of the correct answer beside the item number in the answer booklet provided.

List A	List B
(i) Mediterranean climate.	A 45^0 and 90^0.
(ii) Tropical climate.	B 10^0 and 30^0
(iii) Polar climate.	C 30^0 and 50^0.
(iv) Equatorial climate.	D 00^0 and 05^0.
(v) Hot desert climate.	E 30^0 and 45^0.
	F 05^0 and 20^0.
	G 20^0 and 30^0.

A total of 520,841 (100%) candidates attempted this question. Among them 283,628 (54.46%) scored from 0 to 1 mark, 193,594 (37.17%) scored from 2 to 3 marks and 43,619 (8.37%) score from 4 to 5 marks. Figure 2 summarises this performance.

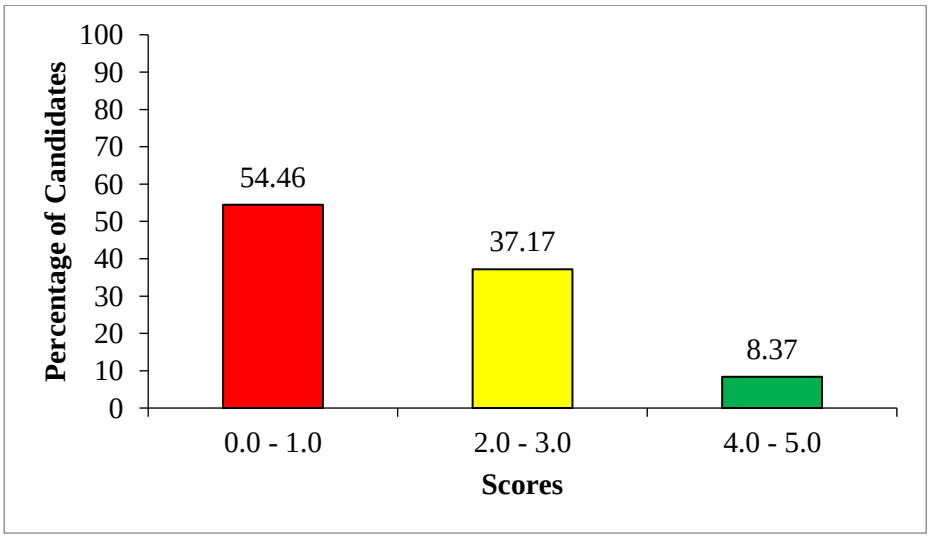


Figure 2: *The Percentage of Candidates' Performance on Question 2*

Figure 2 shows that 45.54 percent of candidates had average performance and above (02-05 marks) within them, 8.37 percent had higher marks. This means that the performance for this question was average.

The candidates who scored higher marks had adequate knowledge of the *Climate and Natural Regions* topic especially on identification of natural regions. Those candidates matched different types of climates in List A with their corresponding latitude North and South of the Equator in List B (locations). The responses matched were; *(i)Mediterranean climate* with *E -30^0 to 40^0*, *(ii)Tropical climate* with *F- 05^0 to 20^0*, *(iii) Polar climate* with *A- 45^0 to 90^0*, *(iv)Equatorial Climate* with *D 00^0 to 05^0* and *(v) Hot Desert Climate* with *G- 20^0 to 30^0*.

On the other hand, 283,628 (54.46%) candidates with lower marks had inadequate knowledge of the topic *Climate and Natural Regions* especially on identification the location of different types of climate. Majority of candidates matched correctly *(i) Equatorial Climate* with *D- 00^0 to 05^0* and *Tropical climate* with *F- 05^0 to 20^0* . Those candidates matched items *(ii) Tropical climate* with *F- 05^0 to 20^0* because this climatic region is familiar to them in the sense that, most of the part of Tanzania is a *Tropical region.* The candidates who matched *Equatorial Climate* with *D - 00^0 to 05^0 related* it with *Equator line* as it is taught in the topic of *Solar System* especially on subtopic *Parallel and Meridians*. Actually, the equator is an imaginary line around the middle of a planet, which is halfway between the North Pole and the South Pole, at 0 degrees latitude. Furthermore, the candidates who scored zero had no knowledge or were not able to recall the subject matter as they failed to match all the items correctly.

2.2 SECTION B: SHORT ANSWERS QUESTIONS

This section had five short answer questions, which carried 11 marks each giving a total of 55 marks. The analysis of each question is as follows:

2.2.1 Question 3: Map Reading and Map Interpretation

This question assessed the candidates on the concept of *Map Reading and Interpretation* skills. It had parts (a) to (f). The candidates were instructed to study carefully the map extract of Ilonga (Sheet 265/2) and answer the given questions:

(a) By citing evidence from the map, suggest three possible economic activities carried out in the mapped area.
(b) Describe the vegetation distribution of the area.
(c) Describe the drainage pattern found in the map.
(d) Give the name of the water-course found in the South Eastern part of the mapped area.
(e) Give the name of the main man made linear physical feature found in the map.
(f) Calculate the area of the whole map in km^2.

A total of 520,841 (100%) candidates attempted this question. Among them 307,660 (59.07%) scored from 00 to 03 marks, 189,645 (36.44%) scored from 3.5 to 07 marks and 23,536 (4.52%) scored from 7.5 to 11 marks. The performance of candidates in this question is illustrated in Figure 3.

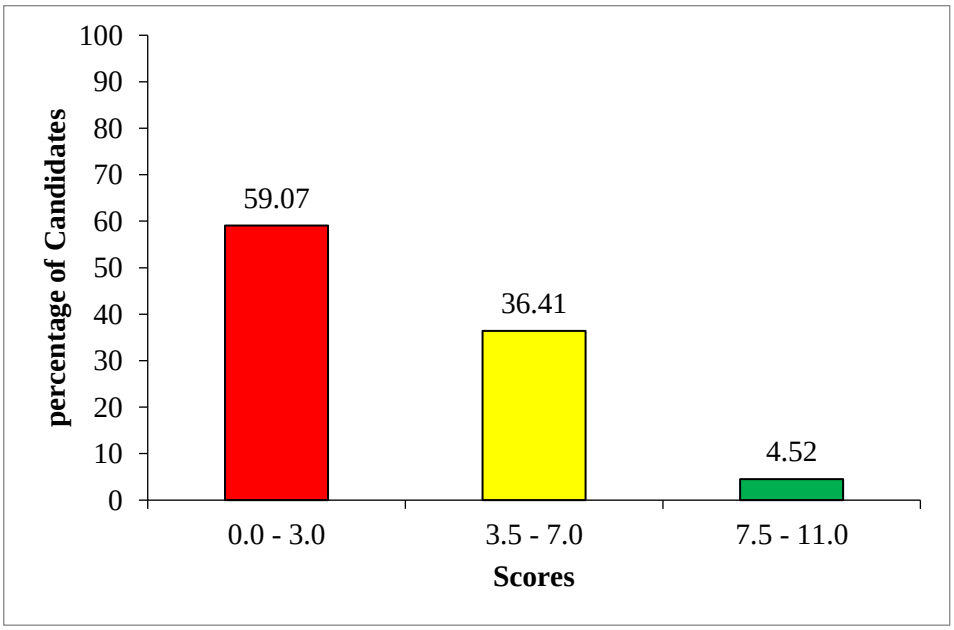


Figure 3: *The Percentage of Candidates' Performance on Question 3.*

Figure 3 shows that, 40.93 percent of the candidates had average performance and above (3.5-11 marks). This means that the performance for this question was average.

The analysis showed that 307,660 (59.07%) candidates who scored lower marks had insufficient knowledge of and skills in the *Map Reading and Map Interpretation* topic. Most of those candidates in part (a), had

insufficient knowledge of *identification of human activities* on topographical maps. Some of the candidates suggested correctly possible economic activities carried out in the area but failed to provide evidence to support the presence of the activities. Others suggested one to three possible economic activities carried out in the mapped area without evidences. On the other hand, the candidates who scored a zero mark demonstrated poor *Map reading and interpretation* skills especially in *identification of human activities*. Some of them did not respond or write anything while, others gave irrelevant responses. For example, some of the incorrect responses provided by the candidates were such as: *Schools, dispensary* and *a church*, hills, *plain plateau* instead of possible economic activities carried out in the area which are *Crop cultivation/ farming activities due to the presence of scattered cultivation, Fishing due to the presence of rivers, trade due to the presence of roads, lumbering due to the presence of woodland, tourism due to the presence of uplands and rivers* and *Transportation due to the presence of roads.*

In part (b), most of the candidates had insufficient knowledge on recognizing/identifying vegetation distribution of the area. Some of them mentioned woodland and scrubs but failed to describe them as the question demanded. Other candidates misconceived the question demand and some described the drainage pattern while others described settlement patterns instead of vegetation distribution. For example, one candidate misconceived the question demand and provided incorrect responses such as: *Vegetation is all vegetables found in the market place in that map, which are like cabbage and Spinach* instead of describing vegetation distribution of the area which are *woodland in almost all over the mapped area except the area near by the road and Main River is free from woodland. Moreover, the central part is covered with small portion of scrubs and scattered tree from Namihono Pond moving down to Luhombero to the west. The area is also covered by papyrus, swamps, marshes or bog in the central part and North Eastern area. Hence, the vegetation distribution of the mapped area is an even (not equally distributed).*

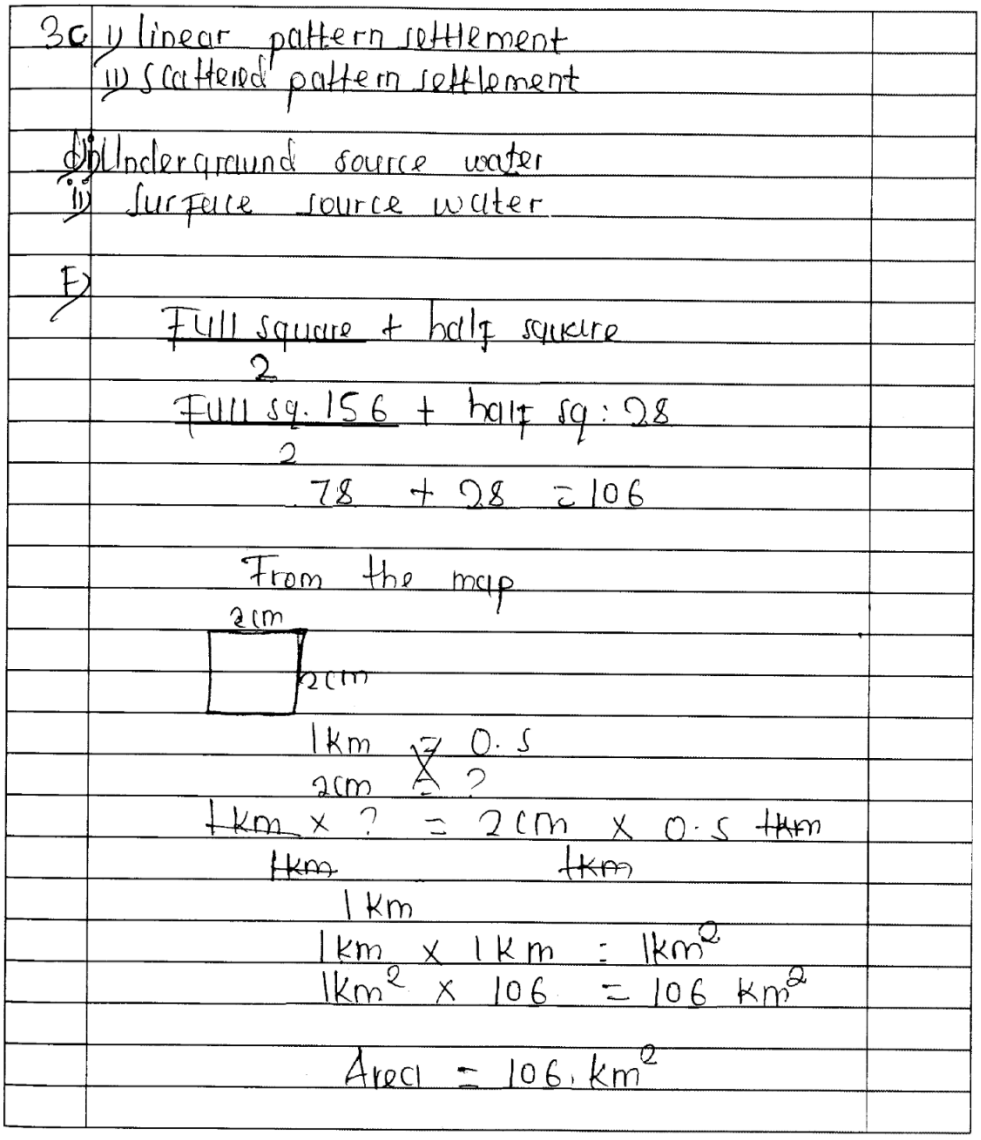
In part (c), majority of the candidates showed insufficient knowledge about *recognition of drainage pattern* which is *the layout or plan that a river a river and its tributaries make on the Earth's surface*. Most of the candidates misconceived the question demand as some described settlement patterns

while others described the water bodies found in the mapped area. For example one of the candidate provide description of drainage as *Drainage is collection or discharge of water which include lakes, swamps, canals and ponds which are related to water* instead of drainage patterns found on the mapped (*dendritic, radial and trellis drainage patterns*).

In part (d), the candidates had insufficient knowledge on *recognizing the water- course* (natural or artificial channel through which water flow) found in the South Eastern part of the mapped area. Those candidates failed to recognize the correct location of the water course asked in the question. For example, one candidate named the water course found in the mapped area as *Ichepi river* instead of *the Luhanyandu river* which is found in the South South Western part of the mapped area. The candidate failed to apply the knowledge of locating position on maps to identify the correct water- course asked which is Luhanyandu river found in the South Western part of the mapped area.

In part (e), most of the candidates had insufficient knowledge of *recognizing man-made linear features* on the topographical map provided. Some of the candidates misunderstood the demand of the question with natural features found on map such as; hills and plains. Other candidates named river, church and dispensary instead of man-made linear feature found in the map which is *all weather road.*

In part (f), most of those candidates had insufficient mathematical skills in *calculating area of various shapes by using different methods*. Some of the candidates gave only one step of calculating the area of the whole map which is counting the number of squares and failed in the rest of the steps. Those candidates could not calculate the total area of the whole map. For example, one candidate managed to find complete squares *(143)* and incomplete squares *(52)* but failed to divide incomplete squares by two, as a result, they ended up with incorrect responses. The correct and incorrect responses in some parts of the question caused them to score lower marks. Extract 3.1 represents a sample of incorrect responses to this question.



Extract 3.1 is a sample of incorrect responses to question 3

In extract 3.1, the candidate mentioned types of settlement patterns with poor English Language command instead of drainage patterns found in the area, which are *Radial, Dendritic and Radial drainage patterns* in part (c). In part (d), he /she provided types of water in part instead of water course found in the Southern part of the mapped area which is River Luhanyandu.

Further analysis showed that 213,181 (40.93%) candidates who scored higher marks had sufficient knowledge of and skills in *Map Reading and Map Interpretation* though their scores differed. In part (a), most of

candidates had sufficient knowledge on identification of human activities on topographical maps. Those candidates suggested correctly three economic activities by providing the evidences from the mapped area in part (a) as follows;

(i) Crop cultivation/ farming activities due to the presence of scattered cultivation,
(ii) Fishing due to the presence of rivers, trade due to the presence of roads, lumbering due to the presence of woodland, tourism due to the presence of uplands and rivers,
(iii) Transportation due to the presence of roads and pastoralism due to the presence of scrubs, woodlands, and scattered settlements.

In part (b), the candidates had adequate knowledge on *recognizing/identifying vegetation* distribution on topographical maps. Most of the candidates described the vegetation distribution of the area as follows; *the area is covered with woodland almost all over the mapped area except the area near the Main River is free from Woodland. The central part is covered with a small portion of scrubs and scattered trees from Namihomo pond moving down to Luhombero to the West. The area also is covered by papyrus, swamps, marshes or bog in the central part and North Eastern area*. They concluded that *the vegetation distribution of the mapped area is even*.

In part (c), the candidates had adequate knowledge of identifying of drainage patterns on the map. Most of the candidates described only one drainage pattern out of three *(Dendritic, Radial and Trellis drainage patterns)* found on the mapped area.

In part (d), the candidates had sufficient knowledge of recognizing the features on the map given and had skills in locating features. Most of the candidates named the water course (natural or artificial channel through which water flows) found in the Southern part of the mapped area as *Luhanyandu river*.

In part (e), the candidates had sufficient knowledge of *recognizing features on the topographical map*. Those candidates named the main man-made linear physical features found on the map as *dry weather roads*.

In part (f), the candidates showed sufficient mathematical skills in calculating areas of various shapes by using different methods. Those candidates calculated the area of the whole map in km^2 by following all the required procedures such as *counting the number of squares (complete squares and incomplete squares divided by two), calculating the area of one square in km2 and lastly finding the area of the whole map (area of one square x the total number of squares).* The responses were as follows:

ALTERNATIVE 1

(i) *Area = complete squares + $\frac{\text{incomplete squares}}{2}$*

(ii) *Complete squares = 143*

(iii) *Incomplete square = 52/2*

(iv) *143 +52/2 =169*

(v) *Area of 1 square = 1km x 1km = $1km^2$*

(vi) *Therefore, the area covered by whole map is = $1km^2$ x 169 =$169km^2$*

ALTERNATIVE 2

(i) *Length of the map = 29.6cm*

(ii) *Width of the map = 25.6cm*

(iii) *Area of the whole map = Length x Width*

(iv) *(29.6 x 0.5km) x (25.6 x 0.5) = Area of the whole map*

(v) *14.8km x 12.8 = $189.44km^2$*

(vi) *Therefore, area of the whole map is $189.44km^2$*

Extract 3.2 represents a sample of such a good response to this question.

3. a) i) There is lumbering activities in the mapped area due to the presence of woodland in the Eastern part of the map to South West part of the map and the North West part of the map.

ii) There is agricultural activities in the mapped area due to the presence of scattered cultivation mostly at the North East part of the map to the Western part of the map.

iii) There is fishing activities in the mapped area due to the presence of a wide water course from grid reference 636040 to grid reference 560958 and water course that run on the woodland in the southern part of the maps Tululu Pond, Namihono Pond.

b) i) There is presence of woodland as dominated in the Southern part of the map, the North West part of the map and Eastern part of the map.

ii) There is a presence of scattered trees and shrubs as evidenced at the North West part of the

3. map and the central part of the map.

(ii) There is a presence of forest as evidenced in the grid references 674998 to grid reference 685904, grid reference 607971 to grid reference 615973; grid reference 620970 to grid reference 633976.

(iii) There is a dendritic drainage pattern as evidenced mostly at the South West part of the map, the South East part of the map.

(iv) There is a radial drainage pattern as evidenced mostly at the North West part of the map as seen originate from highlands.

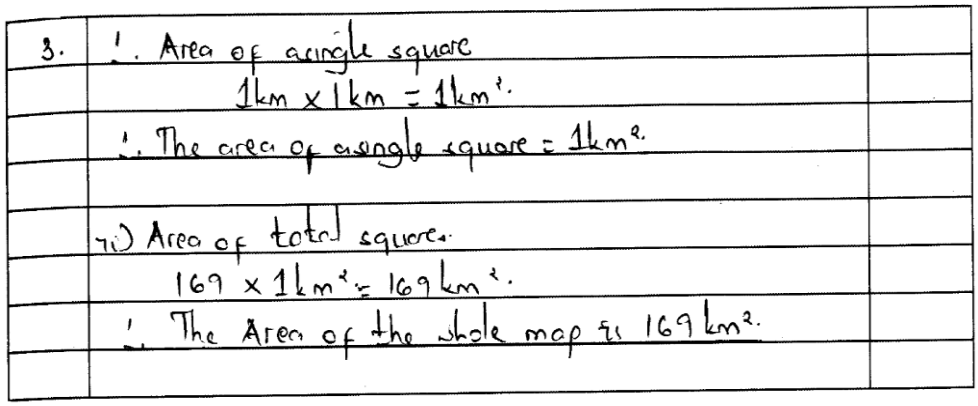
(v) There is a trellis drainage pattern as evidenced along the river (water course) at grid reference 637016 where it joins it at almost right angle.

d) The name of water course found in the South Eastern part is Luhanyandu river

e) The name of the man-made main linear feature found in the map is A road.

f) Solution.

i. The Total number of squares.



Extract 3.2 illustrates a sample correct responses to question 3

2.2.2 Question 4: Application of Statistics

In this question, the candidates were required to:

(a) Giving four points, explain the importance of using a divergent bar graph.

(b) What are the two challenges to be noted when using divergent bar graphs?

A total of 520,841 (100 %) candidates attempted this question. The analysis of data on performance shows that 371,974 (71.42%) candidates scored from 00 to 03 marks,131,934 (25.33%) candidates scored from 3.5 to 07 marks whereas 16,933 (3.25%) scored from 7.5 to 11 marks. The performance of the candidates is illustrated in Figure 4.

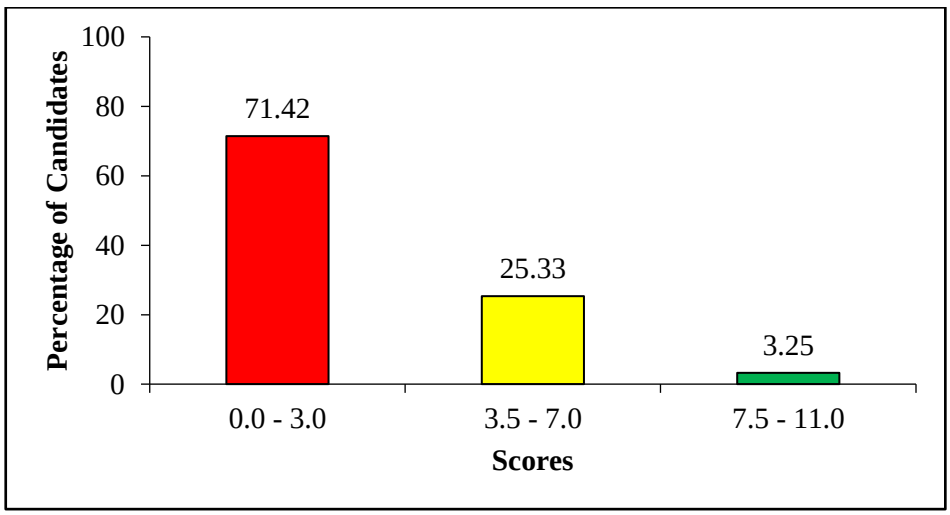
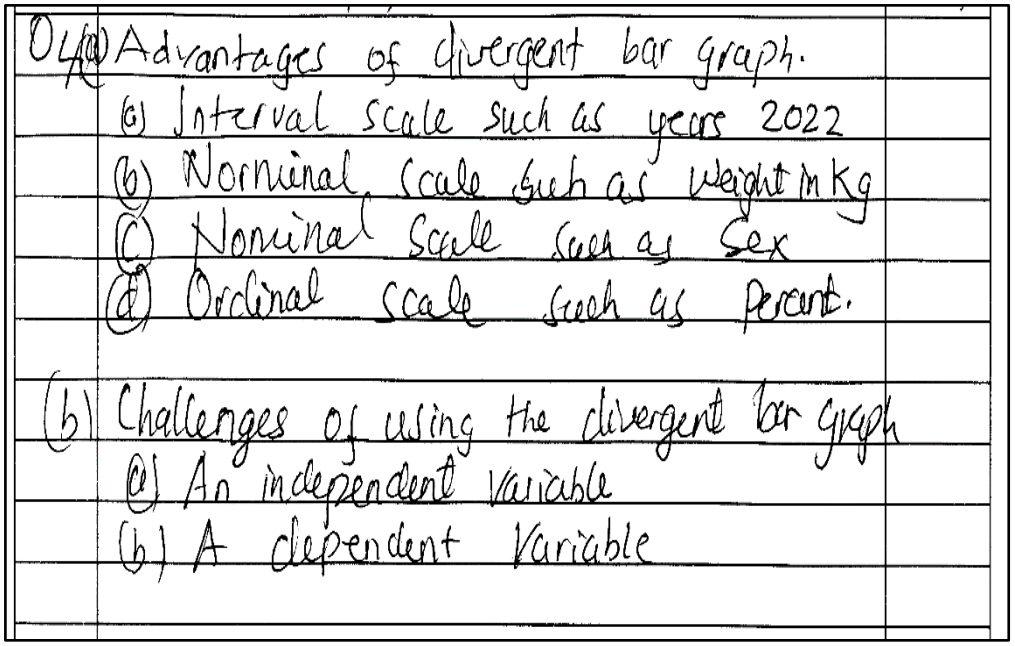


Figure 4: *The Percentage of Candidates' Performance on Question 4*

Figure 4 indicates that, the general performance on this question was weak because only 28.58 percent of the candidates who attempted this question scored 3.5 to 11 marks.

The analysis shows that 371,974 (71.42%) candidates who scored lower marks had insufficient knowledge of presenting different data graphically. Some managed to explain the importance of divergent bar graphs in part (a) but failed to identify two challenges to be noted when using divergent bar graphs in (b). Others mixed correct and incorrect responses in all parts. For example, one candidate provided correct and incorrect responses in part (a) such as *it is used to present multiple data of different items.* The candidate failed to recognise this is an importance of multiple *or* compound graphs and not for divergence bar graph. Another candidate wrote; *it is easy to compare components within a circle, it is represented by angles and* it *is difficult to interpret data* and *it may cause confusion to interprete.* The candidate was not aware that these are the advantages of divided circle and not for divergence graph. Additionally, some provided answers that were unrelated to the question while, others left the part unanswered. Extract 4.1 represents a sample of incorrect responses to question 4.

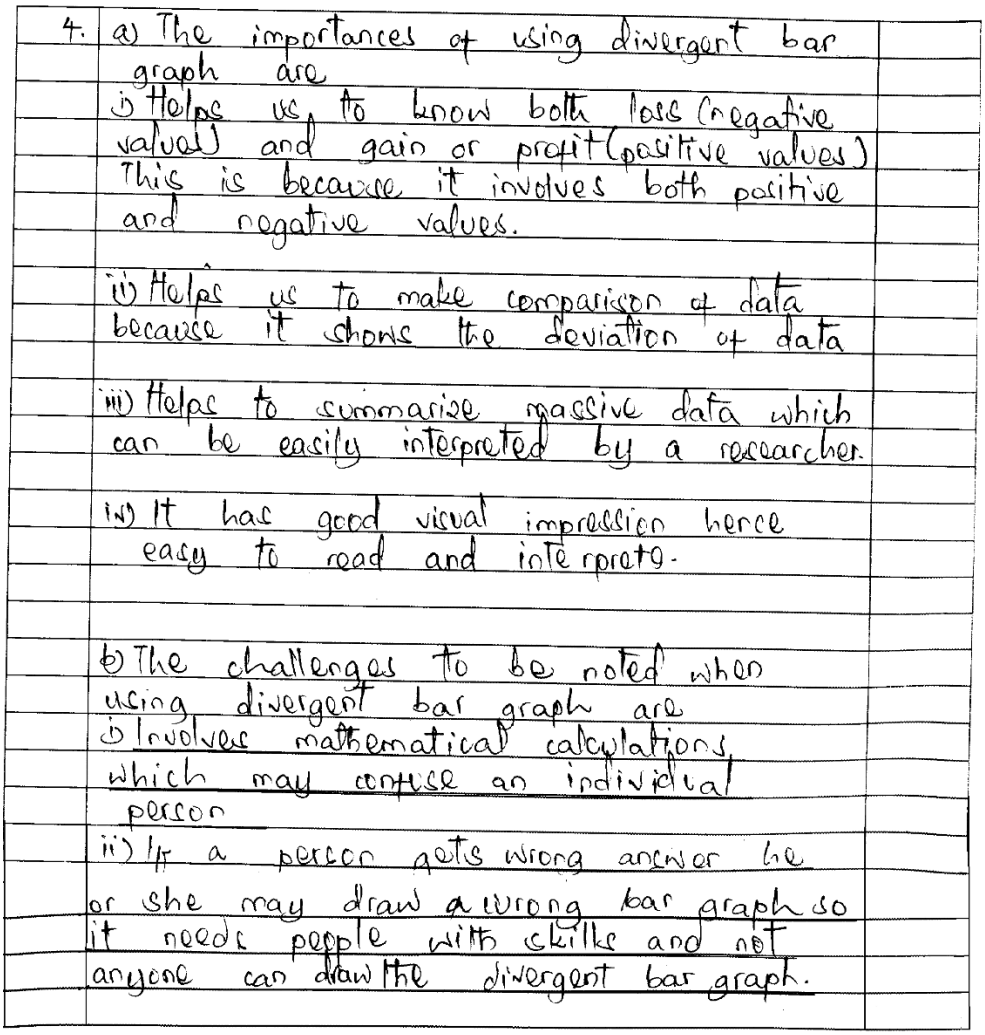


Extract 4.1 is a sample of incorrect responses to question 4

In Extract 4.1, the candidate described the types of scale used in statistics instead of advantages of the divergent bar graph in part (a) and in part (b), he/ she mentioned types of variables instead of challenges of using divergent bar graph.

In the contrary, 16,933 (3.25%) candidates who scored higher marks had sufficient knowledge of and skills in the topic *Application of Simple Statistics*, especially in the *presentation of data graphically*. Those candidates explained four points on the importance of using a divergent bar graph in (a) as follows; *it is easier to trace the fluctuation of the values shown, it is the best method of presenting comparative values, it shows variation from a certain amount/ standard from the mean* and *it is the best method of presenting profit and loss values.*

In part (b), the candidates explained the two challenges to be noted when using divergent bar graphs as; *it is time-consuming, it requires mathematical skills and knowledge,* and *it is limited to only one variable per graph.* Those candidates understood the challenges facing statisticians when presenting data by using divergent bar graphs. Variation in marks were caused by the accuracy and clarity of their responses Extract 4.2 represents a sample of such good responses to question 4.



Extract 4.1 shows a sample of correct responses to question 4

2.2.3 Question 5: Elementary Survey and Map Making

The question had two parts (a) and (b) as follows;

(a) Explain the functions of the following survey tools:

(i) Arrow *(ii) Ranging rod*

(iii) Pegs *(iv) Beacon*

(b) Outline three survey measuring tools.

A total of 520,841 (100%) candidates attempted this question. Analysis of data on performance shows that 365,224 (70.12%) candidates scored from 00 to 03 marks, 119,743 (22.99%) scored from 3.5 to 07 marks and 35,874 (6.89%) scored from 7.5 to 11 marks. Figure 5 illustrate the performance of candidates on this question.

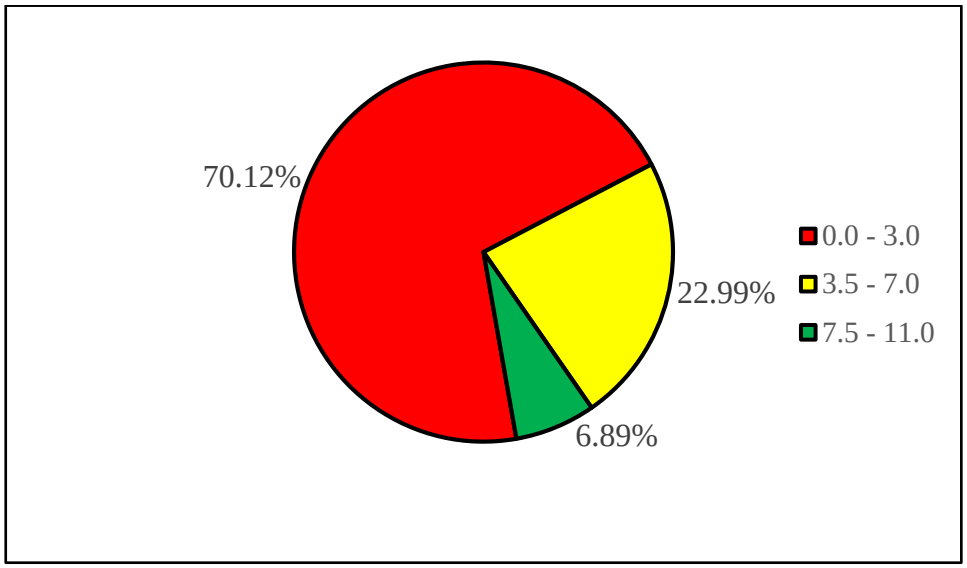


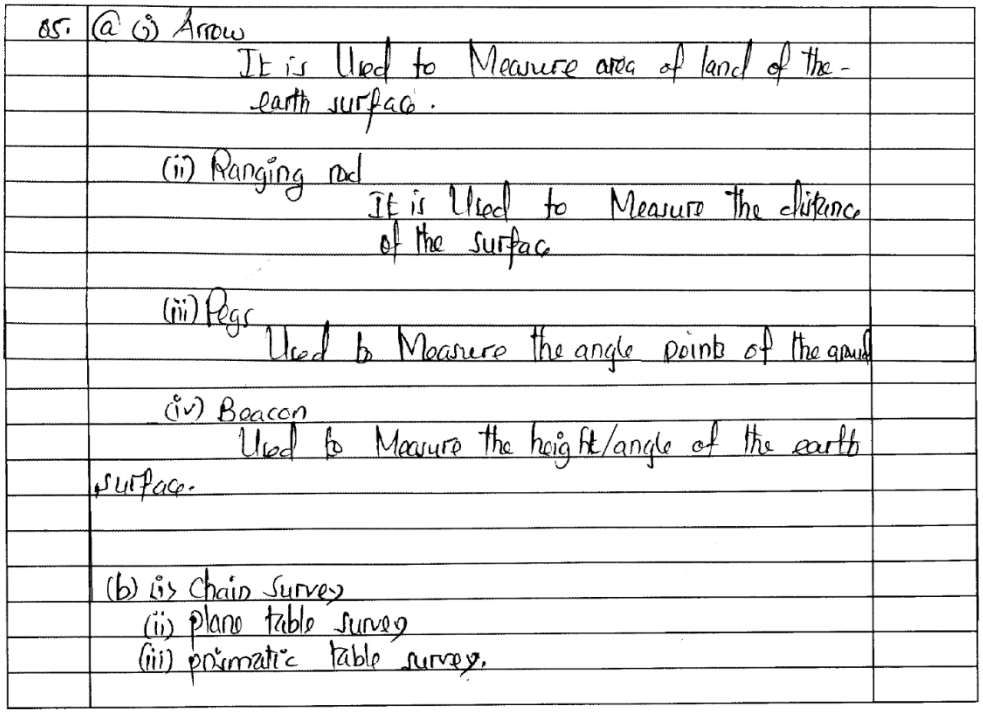
Figure 5: *The Percentage of Candidates' Performance On Question 5*

Figure 5 indicates that the general performance on this question was weak because 29.88 percent of the candidates who attempted this question scored 3.5 to 11 marks.

A total of 365,224 (70.12%) candidates scored lower marks. Some of them demonstrated inadequate knowledge of the tools used in land surveying while others misunderstood the question demand. Some of them explained the functions of few instrument used in surveying in part (a) while, others mixed up correct and incorrect survey tools. For example, one candidate provided correct functions of Arrows and Pegs as well as incorrect functions of Ranging rod and Beacon in part (a). He/she wrote *hanging rod is used to measure distance* while *Beacon is used to measure angles.* This candidate was not aware that distance is measured by either Tape or Chain and angle is measured by Cross staff. The other candidates provided the correct function of *Pegs* and incorrect functions of Arrows, Ranging rods and Beacon as he/she wrote; *they are used to measure short distances*.

In part (b), most of the candidates had insufficient knowledge about survey measuring tools. Most of them failed to understand that, survey-measuring tools are used only for taking measurement during chain survey activities. Other candidates mixed correct and incorrect tools. For example, one candidate wrote; *Ranging rods, cross staff* and *surveyors band* while the other wrote; *Tape measure, field Note book* and *pegs*. Actually all these are

chain survey tools but, *Ranging rod- is used for marking stations or aligning the line to be measured during survey*, *Pegs –are used to mark positions permanently during survey work* and *Field note book -is used for recording all the necessary information during survey work*. Furthermore, other candidates failed to respond to this part of the question. Extract 5.1 represents a sample of incorrect responses.



Extract 5.1: A sample of incorrect responses to question 5

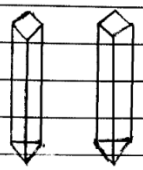
In Extract 5.1, the candidate provided incorrect explanations of survey tools instead of correct functions of Arrow, Pegs, Ranging rod and Beacon which are survey tools used to mark points on the ground. In part (b), the candidate mentioned types of survey instead of survey measuring tools which are; *Tape measure, Chain, Magnetic Compass, Surveyors' band, Cross staff, Measuring staff, Global Positioning System (GPS),Theodolite, Optical Square and Levelling staff*.

On the other hand, the candidates who scored high marks had adequate knowledge of Chain Survey especially on survey measuring tools as they provided correct responses in parts (a) and (b). In part (a), the candidates explained the functions of the tools used in land survey as follows; *Arrows*

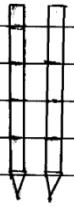
are used for marking points on the ground or are used to mark temporary points. Pegs are used to mark positions permanently during the survey. Ranging rods are used to mark points or position temporarily on the ground and *Beacons are used to mark the final boundaries for the surveyed area*.

In part (b), the candidates had sufficient knowledge of survey measuring tools. The candidates understood well functions of each of the survey tools hence they outlined three survey measuring tools correctly. The candidates outlined three survey measuring tools such as; *Tape measure, Chain, Surveyors band, Cross staff,* and *Optical square*. Their scores varied depending on the strengths and clarity of explanations given. Extract 5.2 represents a sample of such good responses.

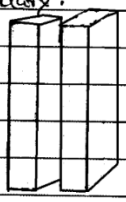
5. (a) (ii) Pegs is used for making points on the ground.



(iii) Ranging rod.
This is used for making points on the ground.



(iv) Beacon
This is used for marking permanent marks around the boundary.



(b) (i) Chain : This is used for taking linear measurements during land survey.
(ii) Tape measure : This is used for taking measurements of the short distances.
(iii) Surveyor's band : This is used for taking measurements of the long distances.

Extract 5.2: A sample of correct responses to question 5

2.2.4 Question 6: Forces that Affect the Earth

In this question, the candidates were required to read the given statement and then answer the questions that followed in part (a).

(a) "*A group of students were sitting at a high steep face of rock along the sea coast of the Indian Ocean. They observe the breaking*

movements of ocean waves in which ocean water is thrown up the beach and returned under gravity down the shore.

(i) What are thetwo wave processes the students observed?

(ii) Mentioned four erosion processes involved in that ocean wave.

(b) Identify three factors that affect wave erosion.

(c) Draw a well-labelled diagram to show the following features resulting from wave erosion.

(i) Blow hole

(ii) Cave

A total of 520,841 (100 %) students attempted this question. Data analysis on performance shows that 493,212 (94.70%) candidates scored from 00 to 03 marks, 22,242 (4.27%) from 3.5 to 07 marks and 5,387 (1.03%) scored from 7.5 to 11 marks. Illustrations of the performance in this question is given in Figure 6.

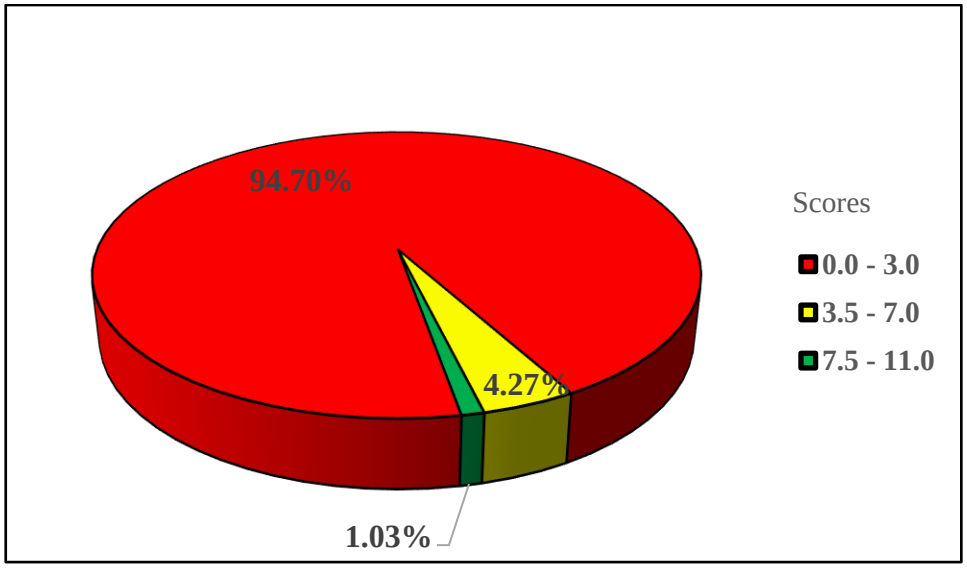


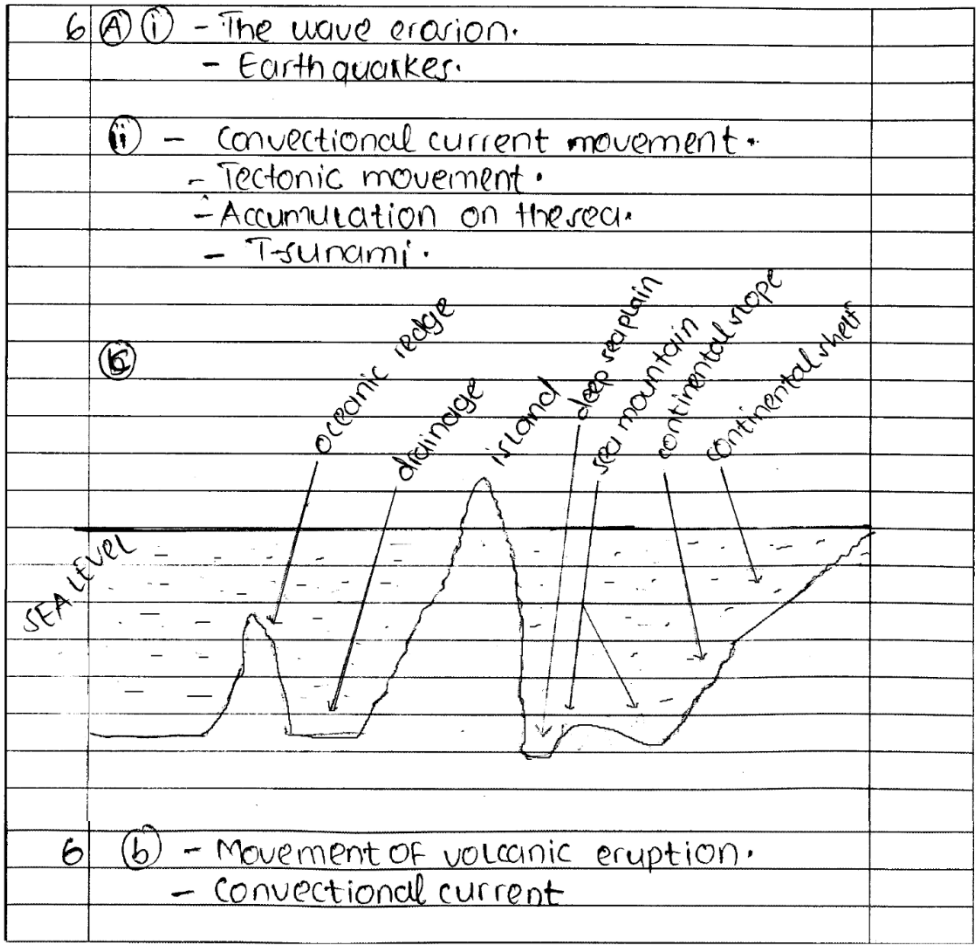
Figure 6: *The Percentage of Candidates' Performance in Question 6*

Figure 6 shows that, the general performance on this question is weak because only 5.30 percent of the candidates scored 3.5 to 11 marks. Among them, 1.03 percent had higher scores (7.5 to 11) scores. This indicates that, the candidates had inadequate knowledge of the *Forces That Affect the Earth's Surface* topic.

A total of 493,212 (94.70%) candidates had weak performance on this question. The candidates had insufficient knowledge of the *Forces that Affect the Earth*'s *Surface* topic especially on *erosion and deposition by wave action*. These candidates were not able to name the two wave processes in part (a) (ii) and four erosion processes involved in that ocean wave in part (a) (ii). For example, one candidate wrote *about wave erosion* and *wave deposition* in part (a) (i) while in (a) (ii) he/she wrote about *constructive waves* and *destructive waves.* The candidate failed to realize that, *wave erosion* and *wave deposition* are the actions of waves in coastal areas and *constructive waves and destructive waves* are the types of wave processes. In addition, another candidate wrote in part (a) (i): *Saltation* and *Traction* instead of *Swash* and *Backwash*. The candidate failed to identify that these are the processes of river transportation and not wave processes. In (a) (ii), the candidate mentioned coast features such as *beach, shore* and *coast* and the other mentioned wave erosion features such as cliff, *caves* and *blow hole* instead of factors affecting wave erosion which are *corrosion, Abrasion, Attrition* and *Hydraulic action.*

In part (b), some of the candidates provided irrelevant responses, which showed that they misunderstood the question demand. For example, one candidate mentioned factors influencing the rate of river erosion such as *volume of water, nature and amount of load and nature of bedrock* instead of factors influencing wave erosion, which are *type of wave, Depth of ocean/sea. Nature of coastal rock. Gradient of the coast/slope, Beach width, Coastal alignment and Human activities.*

In part (c), most of the candidates had poor skills in drawing the two-wave erosion features required. Some of those candidates drew the features but failed to label them correctly while, others drew incorrect diagrams. For example, one of them drew a diagram showing oxbow lake while the other drew a diagram showing barrier reef and an atoll. Actually, oxbow lake is a feature produced by river deposition while barrier reef and atoll are types of coral reefs. Extract 6.1 is a sample of incorrect responses.



Extract 6.1 is a sample of incorrect responses to question 6

In Extract 6.1, the candidate mentioned wave erosion and earthquakes instead of two wave processes which are *Swash* and *Backwash* in part (a) (i). In part (a) (ii), he/she named convectional current movements, tectonic movements, accumulation on the sea and tsunami instead of wave erosion processes which are *Hydraulic action, Corrosion, Solution, Abrasion/Corrosion* and *Attrition.* In part (b), the candidates mentioned *movement of volcanic eruption and convectional currents instead of the factors influencing wave erosion which are type of wave, Depth of ocean/sea. Nature of coastal rock. Gradient of the coast/slope, Beach width, Coastal alignment and Human activities.*

Conversely, the 27,629 (5.30%) candidates who scored higher marks were knowledgeable about the topic *Forces that affect the Earth's Surface*

specifically (*external forces*) on wave erosion. These candidates were able to name the two wave processes which are *Swash* and *Backwash* in part (a) (i). In part (a) (ii), The candidates mentioned four erosion processes involved in ocean wave which are; *Hydraulic action, Corrosion, Abrasion and Attrition.*

In part (b), the candidates had sufficient knowledge on factors affecting wave erosion. These candidates were aware that coastal erosion are the ways in which the sea interacts with the land. Coastal erosion processes play an important role in shaping the landscape, as they are affected by different factors which are; *type of wave, depth of the ocean, nature of the coastal rock, gradient, beach width, coastal alignment and human activities*.

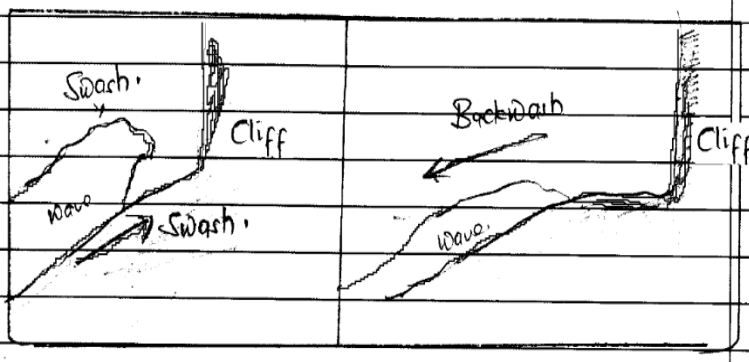
In part (c), those candidates had adequate skills in drawing the two-wave erosion features. These candidates drew well-labelled diagram showing wave erosion features, and labeling them correctly (*Blow holes* and *Caves).* Actually, blow hole is a feature formed when sea caves grow towards the land and upwards creating a vertical shaft that exposed on the surface while a cave is hollow created by sea waves beating against sea cliffs and eroding less resistance rocks. Extract 6.2 represents a sample of such good responses.

6 a) i) - Swash

- occurs when the waves move from the ocean to the shore

- Back wash.

- The wave returns back to the Ocean.



ii) Erosion processes of the Wave.

- Hydraulic action.

Occurs when the wave hits the cliff putting stress and pressure on the rocks hence causing erosion and weathering.

- Corrassion / Abrasion

Occurs when the load carried by the waves act as grinding tool when it reaches the cliff, the load carried in the wave hits the wall of the cliff causing the rock to disintergrate.

- Solution

Occurs when some of the rocks dissolve into the water wave to form solution hence causing disintergration of the rock.

- Attrition

Occurs when the load carried by the wave hit against

6(ii) each other thereby disintegration of the load hence the load reduces in size.

b) i) Wind strength / Veloaty.
- This affects the strength of the Wave, thereafter determine the rate of erosion.

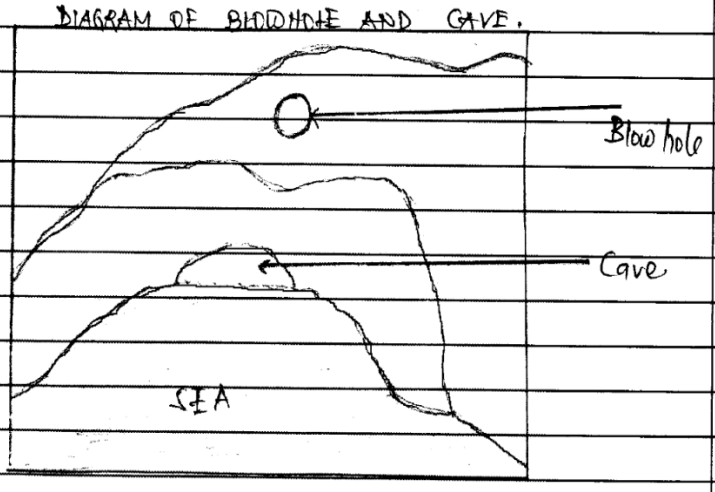
ii) Nature of the rock.
If the rock is soft then would be eroded easily.

iii) Amounts of load Carried by the Wave.
Large amount of load influence much erosion since it acts as grinding tool.

(c) i) Blow hole
- A hole that is vertically found on top of a Cave.

ii) Cave:- an opening or entrance that is formed by erosion in a cliff or head land.

DIAGRAM OF BLOWHOLE AND CAVE.



Extract 6.2 is a sample of correct responses to question 6

2.2.5 Question 7: Photograph Reading and Interpretation

The question required the candidates to study carefully the given photograph and then answer the followed questions in part (a) to (d).

(a) With two evidence, name the type of photograph.
(b) With evidence, suggest the time when the photograph was taken.
(c) Giving evidences, suggest two possible economic activities which takes place in the area.
(d) What are the two natural features which are seen in the photograph?

A total of 520,841 (100 %) candidates attempted this question. The analysis of data on performance shows that 132,927 (25.52%) scored from 00 to 03 marks, 225,078 (43.21%) candidates scored from 3.5 to 07 marks and 162836(31.26%) scored from 7.5 to 11 marks. Figure 7 illustrates the performance of the candidates on this question.

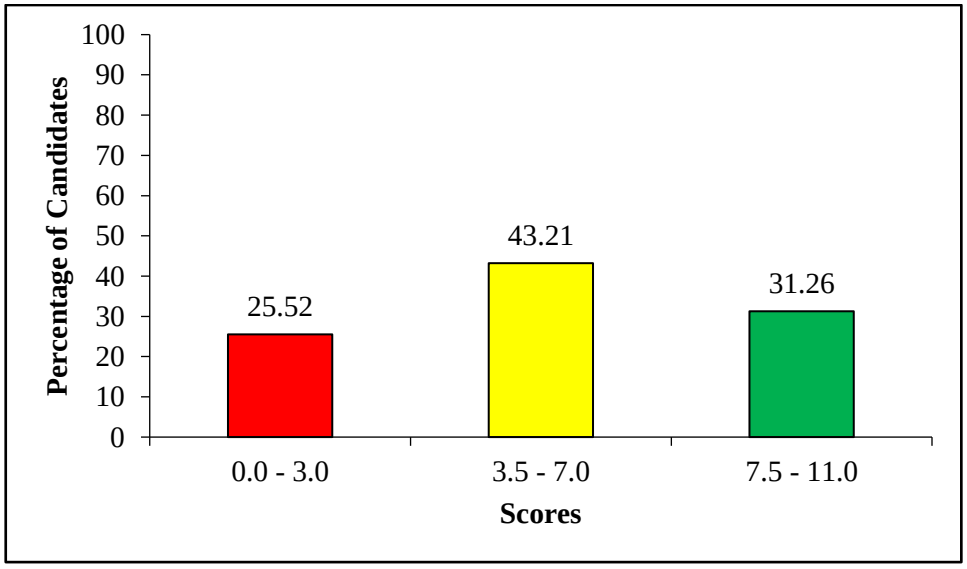


Figure 7: *The Percentage of Candidates' Performance on Question 7*

Figure 7 shows that the general performance on this question was good because 74.48 percent of the candidates had average scores and above. Among them, 31.26 per cent candidates had higher (7.5 to 11) scores. This indicates that the candidates had adequate knowledge of *Photograph Reading and Interpretation* topic.

The candidates with higher scores had adequate knowledge on *Photograph Reading and Interpretation*. In part (a) the candidates showed adequate knowledge in identification of types of photography provided hence named it correctly. The candidates named it as *Ground level/ Horizontal photograph,* which was evidenced with two out of the following*; people and objects on the ground are seen clearly on one side, the scale of the photograph decrease from the foreground to the background, shows horizons, covers a small area, it shows the dead ground, it shows three part which is foreground, middle and background.*

Moreover, in part (b), the candidates suggested the time when the photograph was taken as at *noon/afternoon/midday*. Moreover, they provided evidences such as*; the shadow is right at the bottom/fall under the object, clear sky* and *high light or shining sand*. The candidates had knowledge of interpreting and estimating time of the day when the photograph was taken.

In part (c), the candidates suggested two possible economic activities which take place in the area with evidence. The economic activities suggested were *fishing due to the presence of fishing boats and fishmongers, water transport due to the presence of boats, tourism due to the presence of beaches and ocean and trade due to the presence of fishing activity.* Those candidates had knowledge of identification and interpretation of human activities on photographs as most human activities are depicted in various forms of land use.

Furthermore, in Part (d), the candidates identified *body/lake/ocean and coast beach* as two natural features, which are seen in the photograph. The candidates had knowledge of estimating altitudes and describing the flat landscapes such as the water bodies and beach/seashore. However, their marks differed due to clarity of the responses provided. Extract 7.1 shows a sample of correct responses.

7 a) Horizontal photograph

Evidence; the photo only shows the sideview, indicating that the camera and the object are at the same level.

2. There is a horizon in the background of the photo.

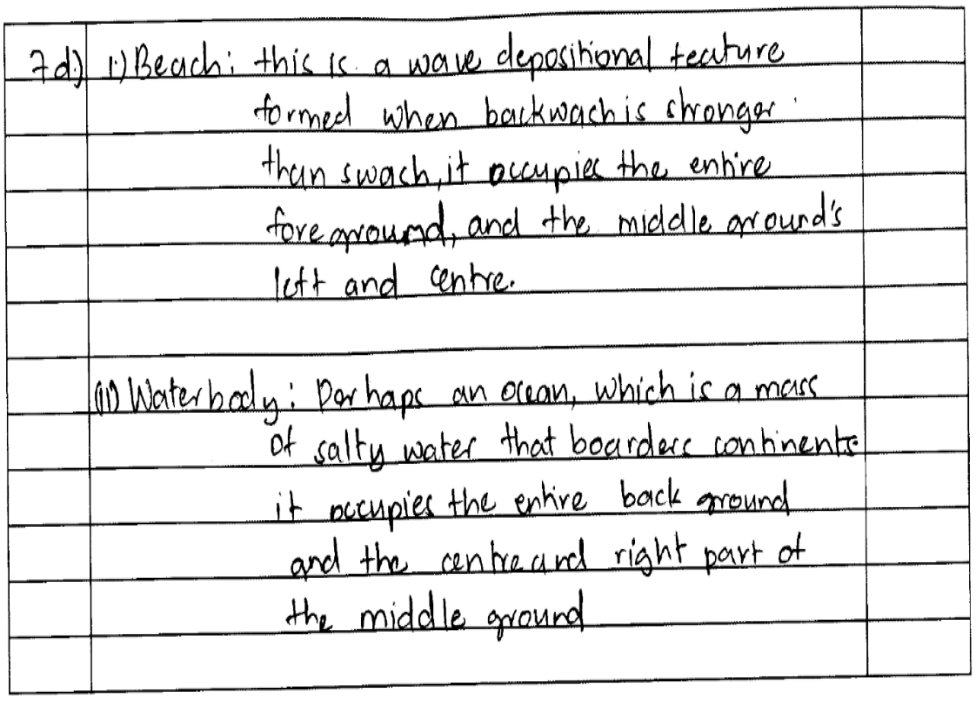
b) The photo was taken at noon.

Evidence: The shadows seem to be formed around the objects. (right below.)

: The light from the sun, in the photo is bright (midday sun.)

c) (i) Fishing: this is the extraction of aquatic organisms from water bodies, this is due to the presence of a water body on the right side of the photograph.

(ii) Transportation (navigation): this involves movement of people and goods through water, evidence is seen from the presence of ships and boats in the water body, on the right side of the photographed area.



Extract 7.1: A sample of correct responses to question 7

Despite the good performance on this question, 132,927 (25.52%) candidates had weak performance. Some of the candidates misinterpreted the demand of the question while others had inadequate knowledge of the subject matter.

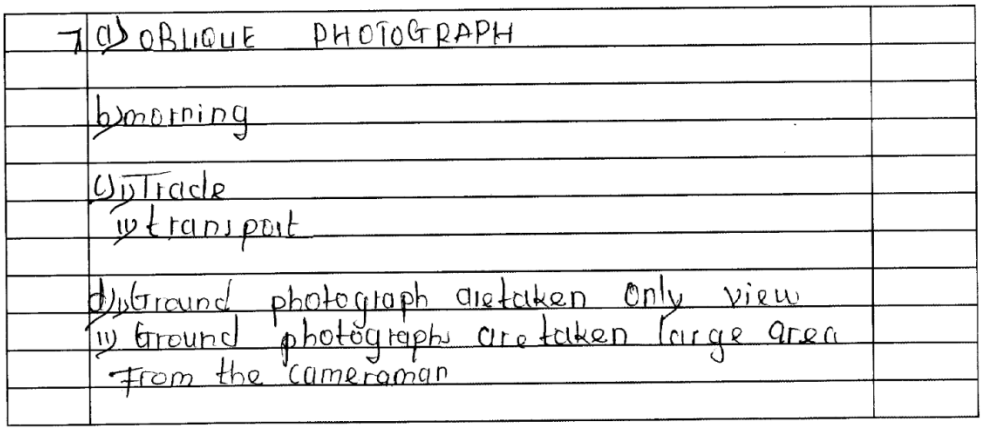
In part (a), the candidates had insufficient skills in observing and identifying the type of photograph provided by giving evidence. Majority of the candidates responded inadequately in some parts of the question. For example, one candidate wrote *oblique photograph* with incorrect evidence instead of *Horizontal photograph*. This candidate failed to recognize that an oblique photograph is taken from an elevated angle of less than 90^0. Another candidate named it as vertical air photograph instead of a horizontal photograph and provided evidences of vertical air photograph such as *it shows only the top side of the object and do not include horizons* instead of evidences of ground /Horizontal photograph which are; *it shows the side of the objects facing the camera, size of objects near the camera are larger than those far away and shows relatively small area*.

In part (b), most of the candidates failed to interpret and estimate the time of the day when the photograph was taken. For example, one of the candidates suggested; *the time was late afternoon evidenced by small shadows* instead

of afternoon. Actually, short shadows appear around mid-day while long shadows are associated with early morning or late afternoon. Another candidate had an incorrect responses; *in the evening because the shadow lies in the West.*

In part (c), some of the candidates were not able to suggest the two economic activities taking place in the area with evidence. Some of them mentioned social services such as *water for domestic uses* instead of economic activities such as *Navigation*. Most of the candidates in this part lacked skills in identifying and interpreting human activities, which are depicted in various forms of land use observed in the photograph provided.

In part (d), most candidates failed to identify two natural features seen in the photograph. Those candidates had inadequate knowledge of estimating altitudes and describing the flat landscapes such as the water bodies and beach/seashore. For example, one candidate named the features seen as; *water fall* and *habour* instead of *water body/ lake or ocean and a coast or beach*. Another wrote *soil* and *horizon* in part (d). Probably, the presence of soil in the picture attracted the candidate to give such a response. In addition, he/she failed to realize that *Horizon* is the characteristic of a Horizontal photograph where the sky seems to meet the land and not the natural feature. Extract 7.2 indicates a sample of incorrect responses.


7 a) OBLIQUE PHOTOGRAPH

b) morning

c) i) Trade
ii) transport

d) i) Ground photograph are taken only view
ii) Ground photographs are taken large area from the cameraman

Extract7.2: A sample of insufficient responses to question 7.

In Extract 7.2, the candidates wrote oblique photograph instead of horizontal photograph in part (a). In part (b), he/she wrote *morning* as the time when the photograph was taken instead of *in the Noon/ Afternoon*. In part (c), he/she mentioned *Trade and Transport* instead of suggesting the economic activities by giving evidences such as; *fishing due to the presence of fishing boats and*

fishmongers, water transport due to the presence of boats, tourism due to the presence of beaches and ocean and trade due to the presence of fishing activity. In part (d), the candidates wrote *Ground photograph* instead of identifying two natural features seen in the photograph which are; *water body/ lake or ocean and a coast or beach*.

2.3 SECTION C: ESSAY QUESTIONS

This section consisted of three essay questions whereby the candidates were instructed to answer only two questions, which carried 15 marks each, making a total of 30 marks.

2.3.1 Question 8: Introduction to Research

The question tested the candidates on the *Introduction to Research* topic specifically on *Stages of Research Work* sub topic. The candidates were required to read the given statement and answer the question that followed. The statement provided was "*Suppose you have asked to research the poor performance of students in Mathematics subject at your school, explain ten stages you would follow*."

A total of 253,921 (100 %) candidates opted for this question. The analysis of data on performance shows that 141,521 (55.72%) candidates scored from 00 to 4.5 marks, 82,416 (32.46%) candidates scored 05 to 9.5 marks and 29,984 9 (11.81%) scored from 10 to 15 marks. Figure 8 illustrates the performance of candidates on this question.

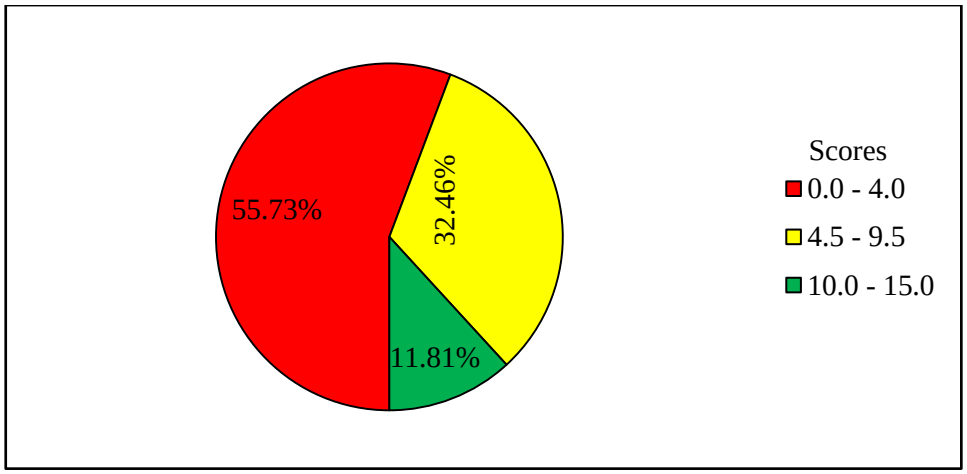
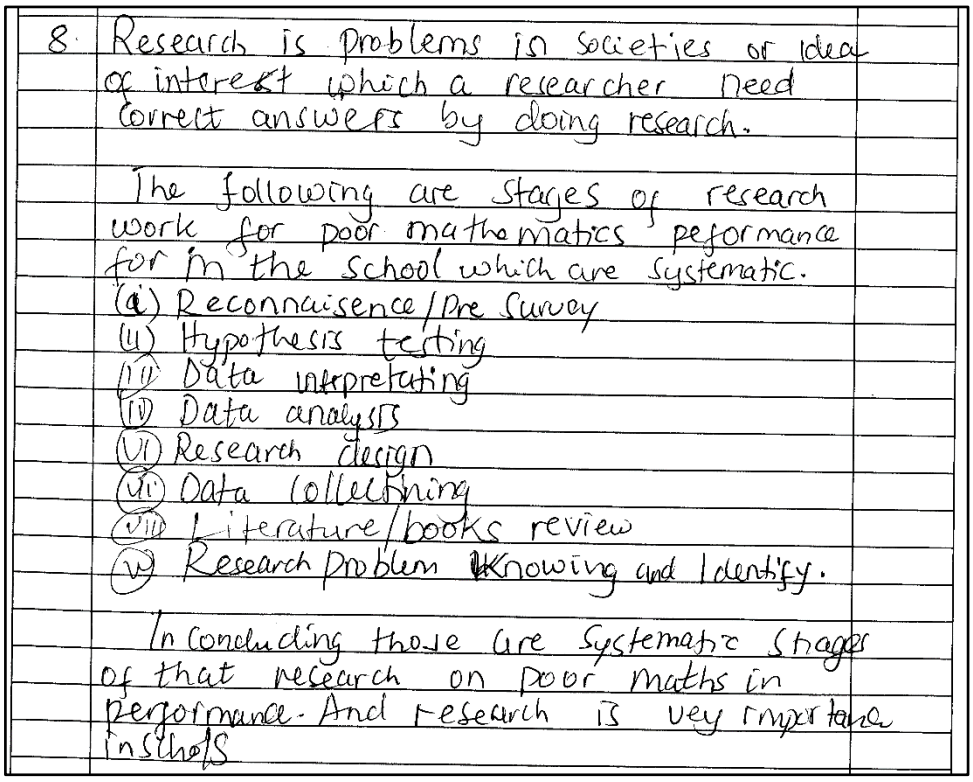


Figure 8:*The Percentage of Candidates' Performance on Question 8.*

Figure 8 shows that 112,400 (44.27%) candidates scored from 5 to 15 marks. This implies that the general performance on this question was average. This performance indicates that the candidates had insufficient knowledge about *Introduction to Research* topic though they provided few correct points, insufficient explanation and incorrect answers in some cases.

Analysis indicates that, 141,521 (55.73%) candidates had weak performance. These candidates had inadequate knowledge about stages of research work. Majority of them provided a relevant introduction, orderly explained three to four stages of conducting research and gave relevant conclusions while, others gave relevant introductions but mixed up correct and incorrect stages with a partial conclusion. For example, one candidate provided a relevant introduction but mixed up the stages of conducting research even though all the mentioned were correct. This candidate failed to realize that stages follow a chronological order. Examples of mixed-up stages were; *Literature review* as fourth stage instead of second stage, formulation *of hypothesis* as second stage instead of third stage, *pre-survey* as third stage instead of fifth and *hypothesis testing* as sixth stage instead of eighth. Other candidates misunderstood the demand of the question. For example, one candidate provided relevant introduction, explained the importance of conducting research instead of explaining the stages of research and ended up with irrelevant conclusions. Extract 8.1 is a sample of incorrect responses to question 8.


8. Research is problems in societies or idea of interest which a researcher need correct answers by doing research.

The following are stages of research work for poor mathematics performance for in the school which are systematic.

(a) Reconnaisence/Pre survey
(ii) Hypothesis testing
(iii) Data interpretating
(iv) Data analysis
(vi) Research design
(vii) Data collecting
(viii) Literature/books review
(ix) Research problem ~~K~~knowing and Identify.

In concluding those are Systematic Stages of that research on poor maths in performance. And research is very importance in schools

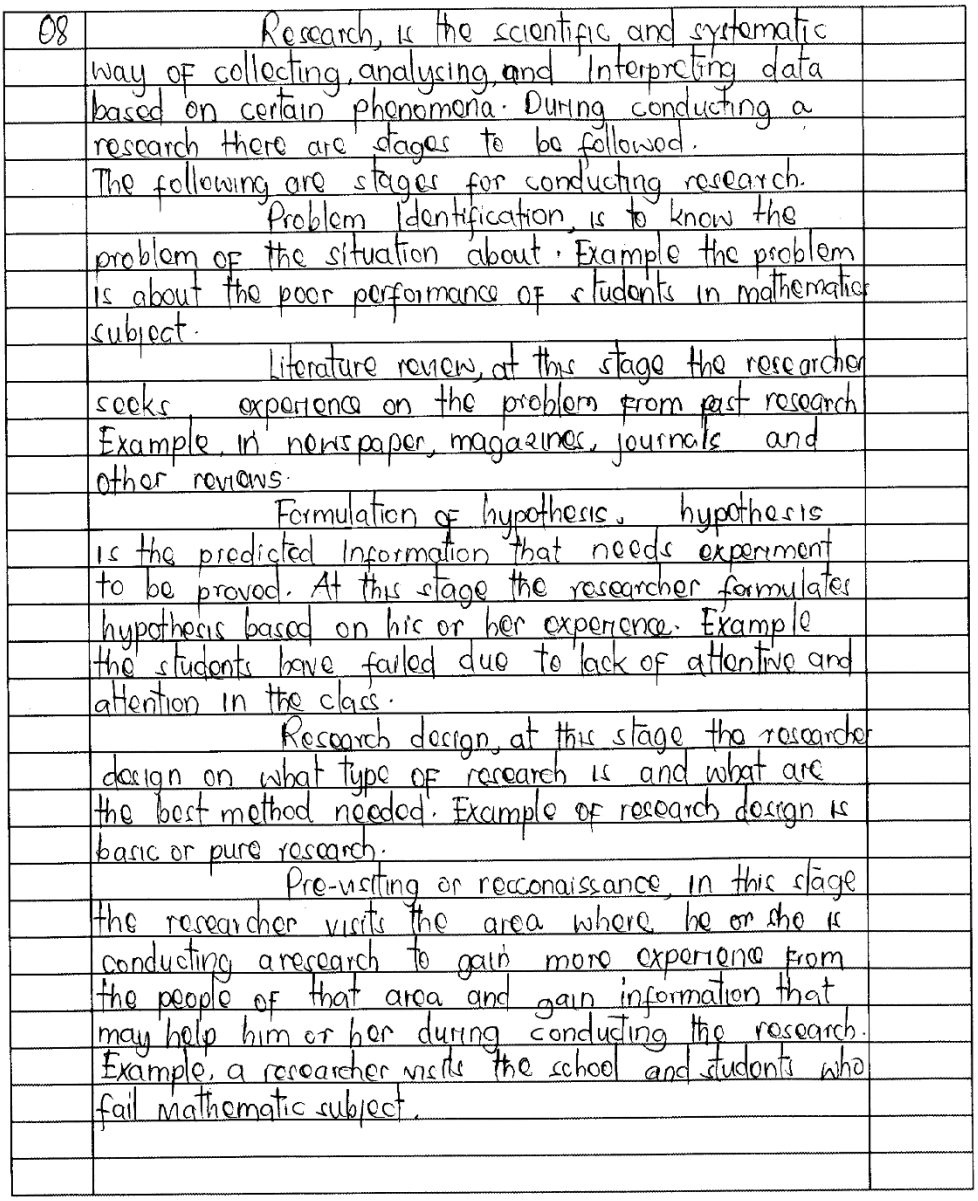
Extract 8.1 is a sample of incorrect responses to question 8

In Extract 8.1 the candidate provided irrelevant introduction and in the main body he/she outlined the correct research stages unsystematically instead of explaining research stages systematically such as *Problem identification/ formulation of the research problem, literature review, formulation of hypothesis, the establishment of research design, pre–survey/ reconnaissance, data collection, analysis of data, hypothesis, data interpretation and report writing.*

Analysis indicates that, 131,505 (20.72%) candidates had good performance. Their scores revealed sufficient knowledge of the stages of Research Work subtopic. These candidates were not only able to recall the stages of conducting research but also were able to apply them in the question scenario. However, their marks varied due to the clarity of their responses provided.

Moreover, those candidates provided relevant introductions by writing the correct meaning of research that is *Research is the scientific and systematic process of collecting, organizing, evaluating and reporting data to solve a*

problem and search for information. Problem identification/ formulation of the research problem, literature review, formulation of hypothesis, the establishment of research design, pre–survey/ reconnaissance, data collection, analysis of data, hypothesis, data interpretation and report writing. Lastly, the candidates ended up providing relevant conclusions. Most of the candidates in this category showed good English language proficiency in their essays. Extract 8.2 is a sample a correct response to question 8.



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Research, is the scientific and systematic way of collecting, analysing, and Interpreting data based on certain phenomena. During conducting a research there are stages to be followed.
The following are stages for conducting research.

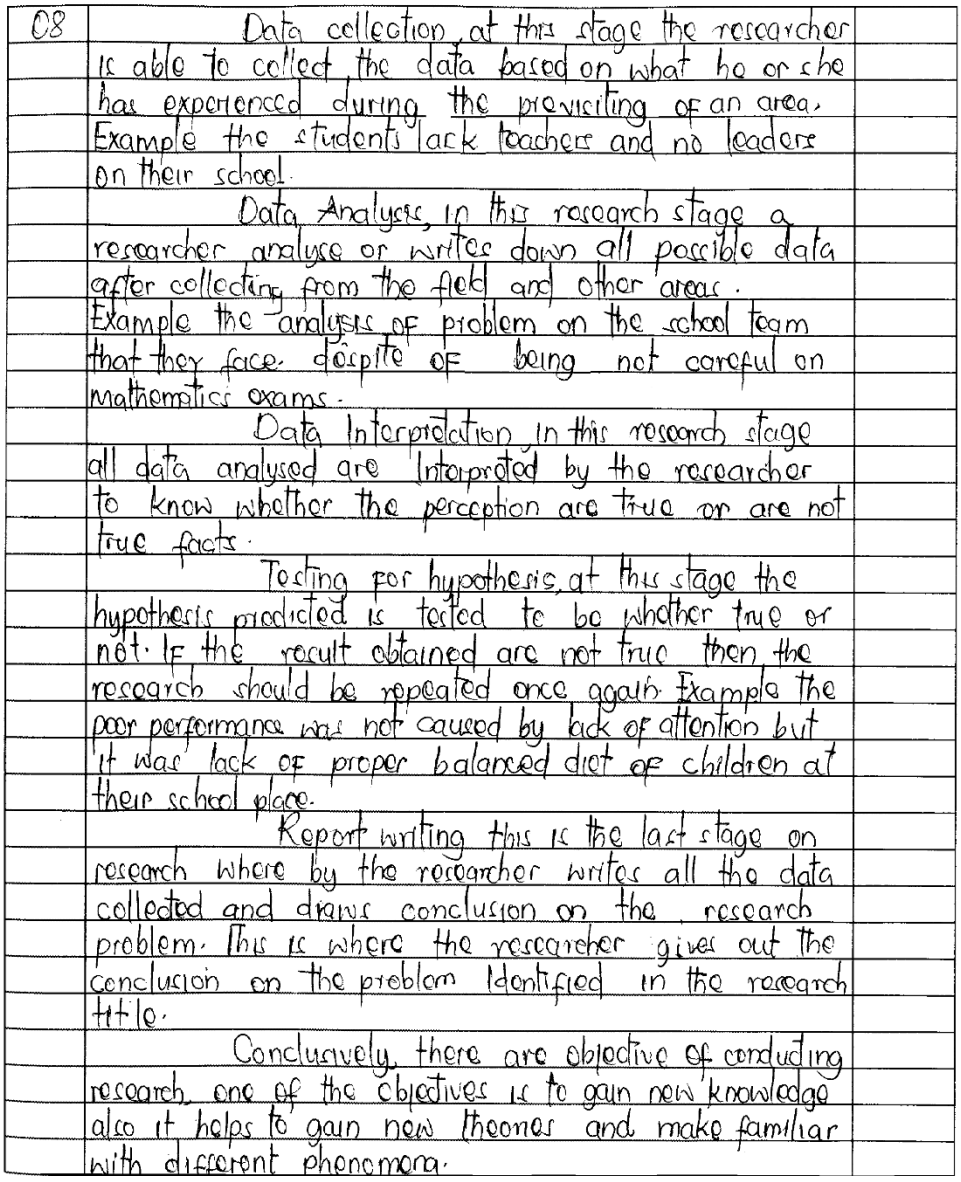
Problem Identification, is to know the problem of the situation about. Example the problem is about the poor performance of students in mathematics subject.

Literature review, at this stage the researcher seeks experience on the problem from past research Example, in newspaper, magazines, journals and other reviews.

Formulation of hypothesis, hypothesis is the predicted Information that needs experiment to be proved. At this stage the researcher formulates hypothesis based on his or her experience. Example the students have failed due to lack of attentive and attention in the class.

Research design, at this stage the researcher design on what type of research is and what are the best method needed. Example of research design is basic or pure research.

Pre-visiting or reconnaissance, in this stage the researcher visits the area where he or she is conducting a research to gain more experience from the people of that area and gain information that may help him or her during conducting the research. Example, a researcher visits the school and students who fail mathematic subject.


08
Data collection, at this stage the researcher is able to collect the data based on what he or she has experienced during the previsiting of an area. Example the students lack teachers and no leaders on their school.
Data Analyses, in this research stage a researcher analyse or writes down all possible data after collecting from the field and other areas. Example the analysis of problem on the school team that they face despite of being not careful on mathematics exams.
Data Interpretation, in this research stage all data analysed are interpreted by the researcher to know whether the perception are true or are not true facts.
Testing for hypothesis, at this stage the hypothesis predicted is tested to be whether true or not. If the result obtained are not true then the research should be repeated once again. Example the poor performance was not caused by lack of attention but it was lack of proper balanced diet of children at their school place.
Report writing this is the last stage on research where by the researcher writes all the data collected and draws conclusion on the research problem. This is where the researcher gives out the conclusion on the problem identified in the research title.
Conclusively, there are objective of conducting research, one of the objectives is to gain new knowledge also it helps to gain new theories and make familiar with different phenomena.

Extract 8.2: A sample of correct responses for question 8.

2.3.2 Question 9: Manufacturing Industry

The candidates were given the following statement "*Mr. Tumbile wants to establish a plastic processing industry in Visitu town. Analyse six factors he should consider before locating the industry.*"

A total of 444, 089 (100 %) candidates attempted this question. Data analysis on performance shows that 120,012 (27.02%) candidates scored

from 00 to 4.5 marks, 152,177 (34.27%) candidates scored from 05 to 9.5 marks, and 171,900 (38.71%) candidates scored from 10. to 15 marks.

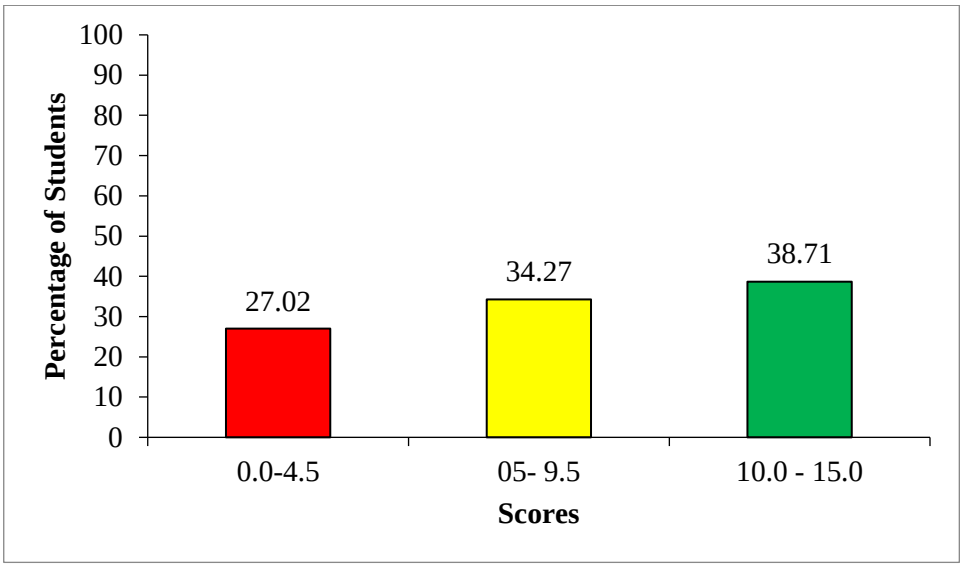
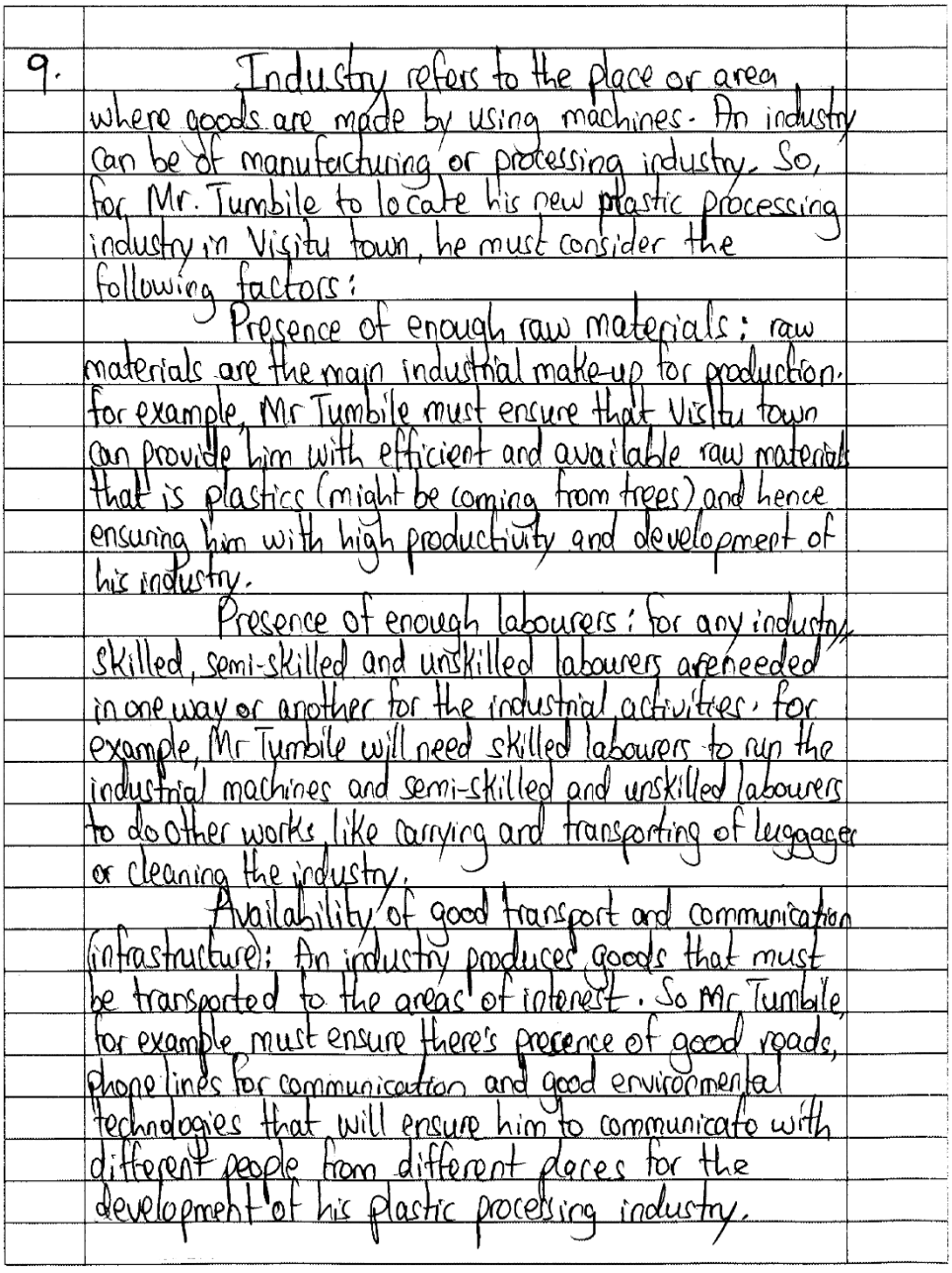


Figure 9:*The Percentage of Candidates' Performance in Question 9.*

Figure 9 shows that the general performance of candidates on this question is good because 72.98 percent of them scored from 05 to 11 marks. Among them, 38.71 percent scored higher marks (10 to 15). This indicates that, the candidates had adequate knowledge of *Manufacturing Industries* topic specifically on the *factors to be considered for locating manufacturing industries*.

The item response analysis shows that, 324,077 (72.98%) candidates with good performance had adequate knowledge of *Manufacturing Industries* topic specifically on the *factors to be considered for locating manufacturing industries*. In this group, some candidates managed to provide a relevant introductions and analysed six factors that Mr. Tumbile should consider before locating the industry. Such factors are *availability of raw materials, power supply, transportation and communication, availability of market, labour (human resource), high technology industries/ science and technology, availability of capital, water supply, government policy, availability of land and political stability.* Lastly, the candidates ended up providing relevant conclusions. Most of the candidates

in this category showed good mastery of English language proficiency in their essays. Extract 9.1 is a sample of correct response in question 9.

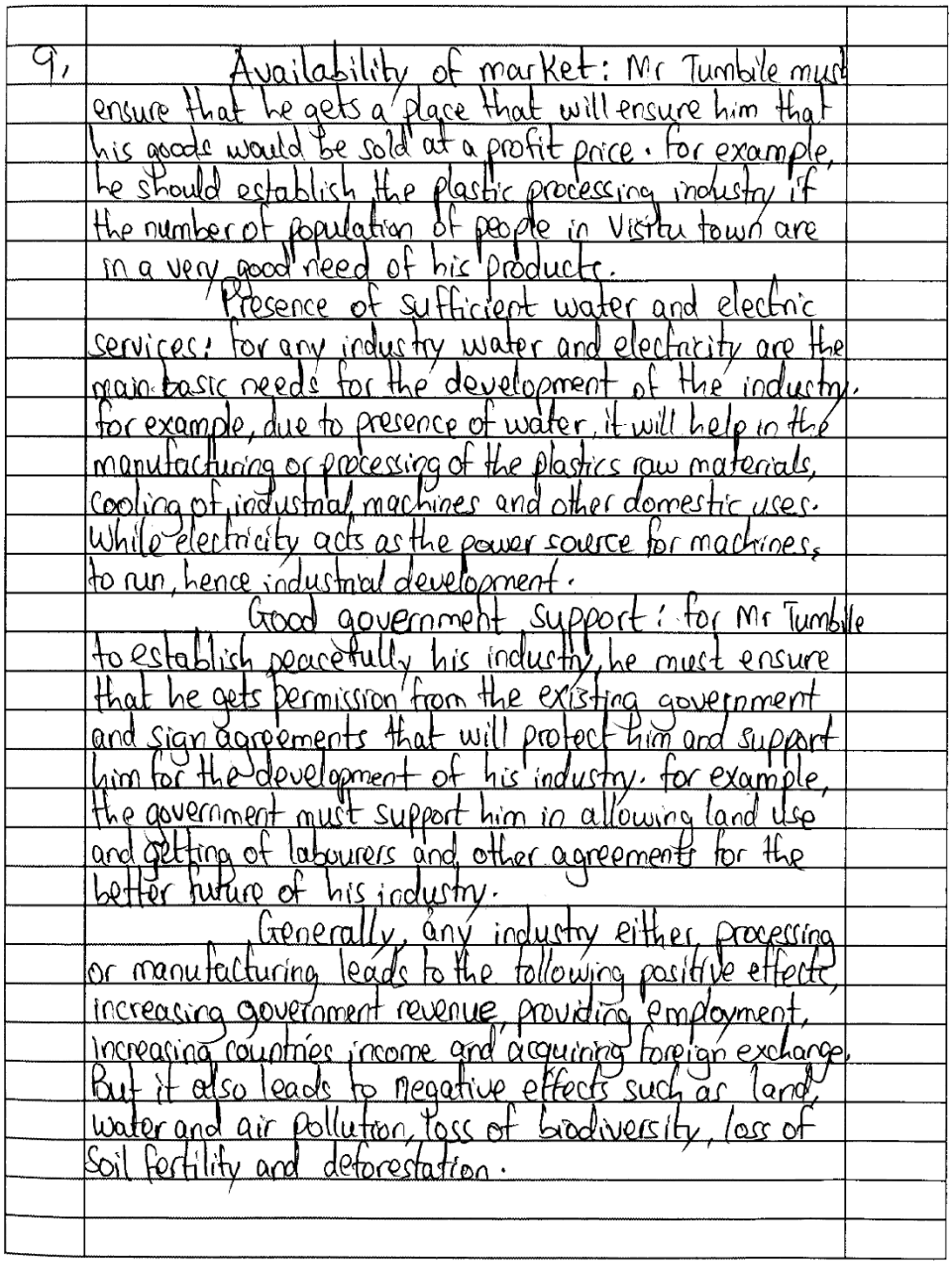


9. Industry refers to the place or area where goods are made by using machines. An industry can be of manufacturing or processing industry. So, for Mr. Tumbile to locate his new plastic processing industry in Visitu town, he must consider the following factors:

Presence of enough raw materials: raw materials are the main industrial make-up for production. for example, Mr Tumbile must ensure that Visitu town can provide him with efficient and available raw materials that is plastics (might be coming from trees) and hence ensuring him with high productivity and development of his industry.

Presence of enough labourers: for any industry, skilled, semi-skilled and unskilled labourers are needed in one way or another for the industrial activities. for example, Mr Tumbile will need skilled labourers to run the industrial machines and semi-skilled and unskilled labourers to do other works like carrying and transporting of leggages or cleaning the industry.

Availability of good transport and communication (infrastructure): An industry produces goods that must be transported to the areas of interest. So Mr Tumbile, for example must ensure there's presence of good roads, phone lines for communication and good environmental technologies that will ensure him to communicate with different people from different places for the development of his plastic processing industry.


9. Availability of market: Mr Tumbile must ensure that he gets a place that will ensure him that his goods would be sold at a profit price. For example, he should establish the plastic processing industry if the number of population of people in Visitu town are in a very good need of his products.

Presence of sufficient water and electric services: for any industry water and electricity are the main basic needs for the development of the industry. For example, due to presence of water, it will help in the manufacturing or processing of the plastics raw materials, cooling of industrial machines and other domestic uses. While electricity acts as the power source for machines, to run, hence industrial development.

Good government support: for Mr Tumbile to establish peacefully his industry, he must ensure that he gets permission from the existing government and sign agreements that will protect him and support him for the development of his industry. for example, the government must support him in allowing land use and getting of labourers and other agreements for the better future of his industry.

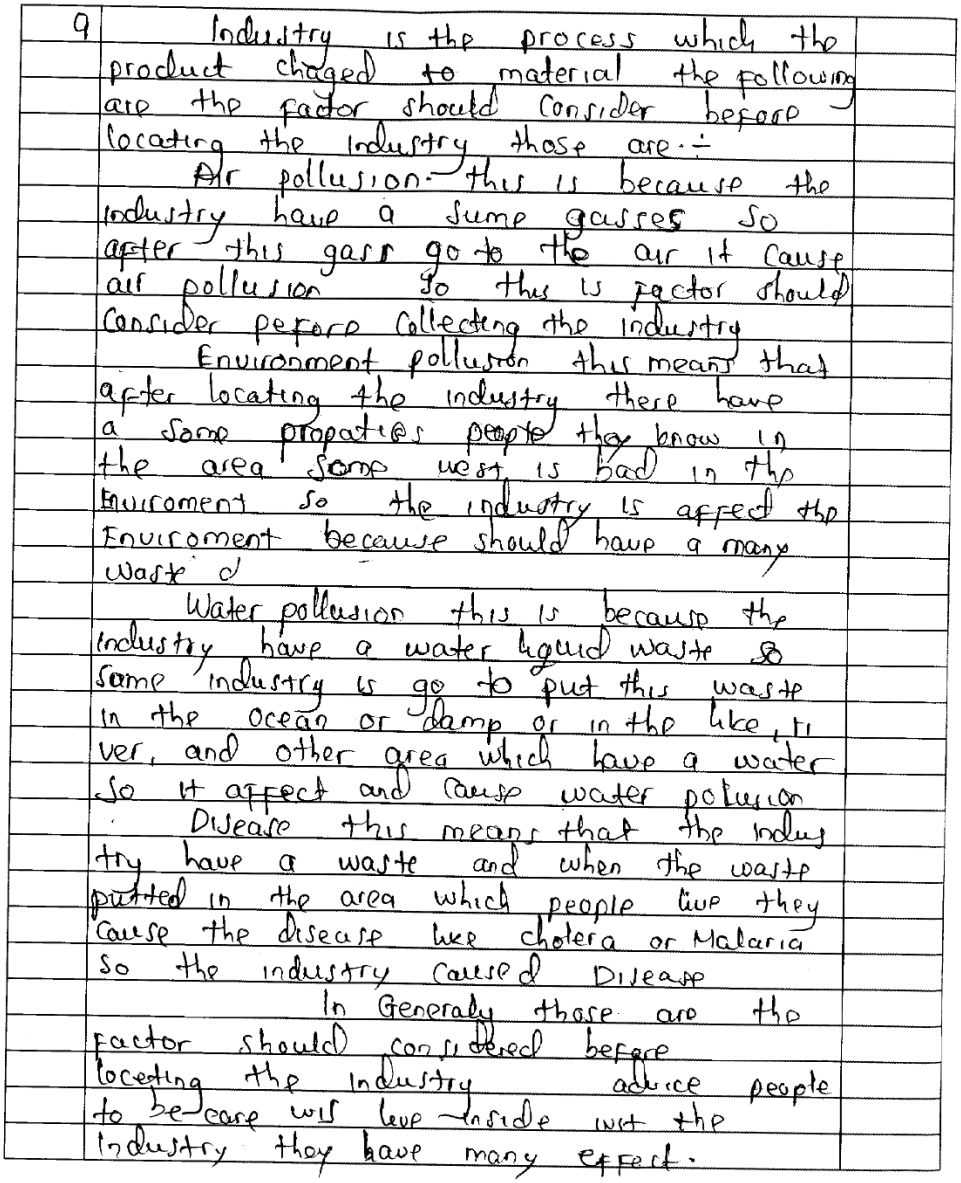
Generally, any industry either processing or manufacturing leads to the following positive effects, increasing government revenue, providing employment, increasing countries income and acquiring foreign exchange. But it also leads to negative effects such as land, water and air pollution, loss of biodiversity, loss of soil fertility and deforestation.

Extract 9.1 is a sample of correct responses to question 9

On the other hand, 120,012 (27.02%) candidates who had weak performance portrayed insufficient knowledge of the subject matter *Manufacturing Industries* especially on *factors for location of industries*. These candidates had insufficient knowledge about factors for the location of manufacturing industries. Some candidates failed to understand the

demand of the question while others had some weaknesses on their responses as they failed to write relevant introductions. They provided few correct factors for locating the industry with irrelevant conclusion. Others provided relevant introductions, analysed few correct factors for locating manufacturing industry but gave irrelevant conclusions. For example, one candidate failed to provide an introduction and mixed up correct and incorrect factors for locating the industry without a conclusion.

However, some of those who scored zero misconceived the question demand while others did not know the factors for location of manufacturing industries hence they failed to analyse the factors correctly. Extract 9.2 is a sample of incorrect responses to question 9.


9 Industry is the process which the product chaged to material the following are the factor should Consider before locating the industry those are.÷

Air pollusion this is because the industry have a fume gasses so after this gass go to the air it cause air pollusion so this is factor should Consider before Collecting the industry

Environment pollusion this meant that after locating the industry there have a some propaties people they know in the area some west is bad in the Enviroment so the industry is affect the Enviroment because should have a many waste of

Water pollusion this is because the industry have a water liquid waste & some industry is go to put this waste in the ocean or damp or in the like, river, and other area which have a water so it affect and cause water pollusion

Disease this means that the industry have a waste and when the waste putted in the area which people live they cause the disease like cholera or Malaria so the industry caused Disease

In Generaly those are the factor should considered before locating the industry advice people to be care wil live inside wit the industry they have many effect.

Extract 9.2 is a sample of incorrect responses for question 9.

In Extract 9.2 the candidate explained the types of environmental pollution such as; *air pollution, environmental pollution, water pollution* and *diseases* instead of factors to be considered before locating the industry such as *availability of raw materials, power supply, transportation and communication, availability of market, labour (human resource), high technology industries/ science and technology, availability of capital, water supply, government policy, availability of land and political stability.*

2.3.3 Question 10: Transport

The candidates were assessed on the *Transport* topic. They were required to read the given statement and answer the question that followed. The statement read "*Tanzania has realized that improving transport is inevitable for sustainable socio–economic development*." Justify this quotation by giving seven points.

A total of 319,933 (100%) candidates attempted this question. Data analysis on performance shows that 148,886 (46.54%) candidates scored from 00 to 4.5 marks, 123,943 (38.74%) candidates scored from 05 to 9.5 marks and 47,104(14.72%) scored from 10. to 15 marks. Further illustrations of performance of the candidates is given in Figure 10.

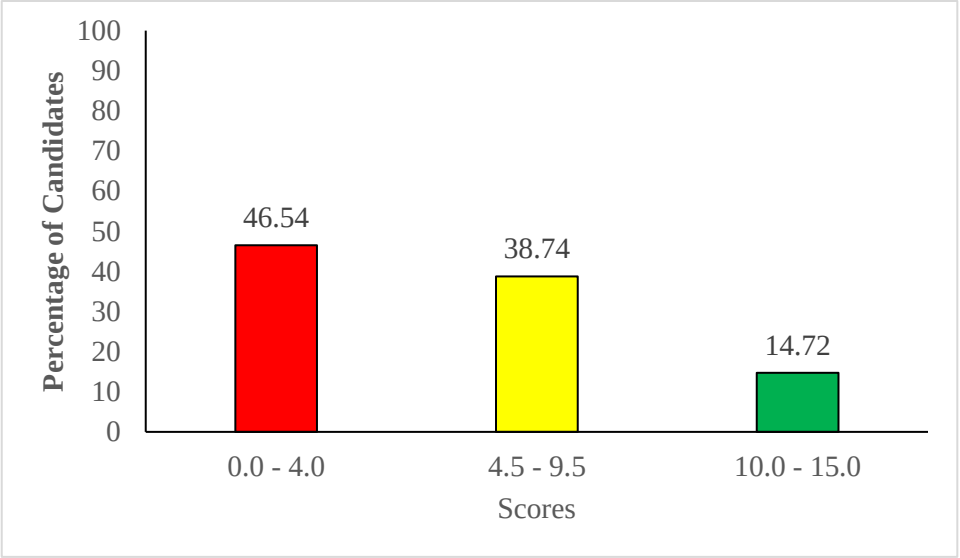


Figure 10: *The Percentage of Candidates' Performance on Question 10*

Figure 10 shows that the general performance on this question was average because 53.46 percent of the candidates scored 05 to 15 marks. Among them, 14.47 percent had higher (10 to 15) scores. This indicates that the candidates had adequate knowledge of *Transport* topic especially on *Importance of transport*.

The analysis showed that 47,104 (14.72%) candidates with good performance showed adequate knowledge about *Transport* specifically the importance of transport. These candidates managed to write relevant introduction and justified the statement by giving clear justifications of the

importance of transport for sustainable socio–economic development with a relevant conclusions. In this category, some candidates provided relevant introductions as; *Transport is the movement of people and goods from one place to another. The means of transport include land, water, pipeline and air transport. The Government of Tanzania has realized that to get development there is a strong need to improve transport and communication.*

In addition to that, other points provided on the importance of transport as follows*: It facilitates the transfer of raw materials to the manufacturing industries and goods from the industries to the markets, it facilitates the diffusion of technology from one region to another, it stimulates the development of other economic sectors such as mining, trade, agriculture and industries, it stimulates the growth of towns or cities e.g. Arusha, Mwanza, Dar es Salaam and Kilimanjaro, It facilitates the movement of factors of production such as capital and labour from one place to another.*

In addition to that, other importance provided by the candidates were; *It employs many Tanzania e.g. workers or staff in the ministry of transport and communication, it is a very important sector which brings much foreign currency and local to the country through tax when foreigners crossing the international boundaries towards our country, it helps the improvement of social services like education and health care and it stimulates international co – operations between Tanzania and health care.* Lastly, the candidates ended up by providing relevant conclusions. Most of the candidates in this category showed good English language proficiency and good essays. Extract 10.1 is a sample of correct responses to this question.

10: Transport is the movement of people and their goods from one place to another or a different destination. It's categorized into land, water and air transport. It's true that improving transport is inevitable for sustainable socio-economic development as elucidated below:-

Transport helps in promotion of tourism in Tanzania. It's through the transportation activity, either land, air or water transport that facilitates the movement of people to different places for leisure or pleasure, and therefore if tourism is promoted in the country there will be socio-economic development as the country will earn foreign currency and improve social interaction among the Tanzanians and other people from outside the country.

It facilitates the development of agricultural activities. Agricultural activities usually develop simply because of the establishment of transport facilities that will help the farmers to transport their goods from the farms to the markets for sale. For example if there are transport systems even the bulky and perishable goods can easily be transported for sale a fact that earns income to the farmers hence facilitating development of agricultural activities in the country.

Transport is a source of employment opportunities to people. Many people have been employed in the field of transportation to help in facilitating the transport activities. Example many individuals have been employed as drivers, traffics and other road agents to work in the field of which they are usually paid to earn their income that they could in return use in the development of their social and economic issues like agriculture, promotion of their cultures and many others.

It's a source of revenue to the government. The government through its revenue authorities, usually collects money that is as a tax from the transportation activities

10 and therefore the development of transport facilities will help the government to earn more income of which in return they could use it in planning for the development of the country in both aspects of social and economic issues.

Transport acts as a source of income to people. Many people have managed to raise their standards of living simply because they are employed and paid their salaries as their income which they use it to earn their own living and also they would in return use it in the developmental of the own economic and social issues in the society, and therefore having them earned such an income they can improve even the economic position of their own families.

It facilitates relationship among people from inside and outside the country. As people move from one place to another either in land or marine transport, they usually come into contact or they come together in the journeys and their create a strong bond or relationship. For example, it's through transportation facilities that Tanzania has managed to build a strong bond with other nations like South Africa, Uganda, Kenya and many others.

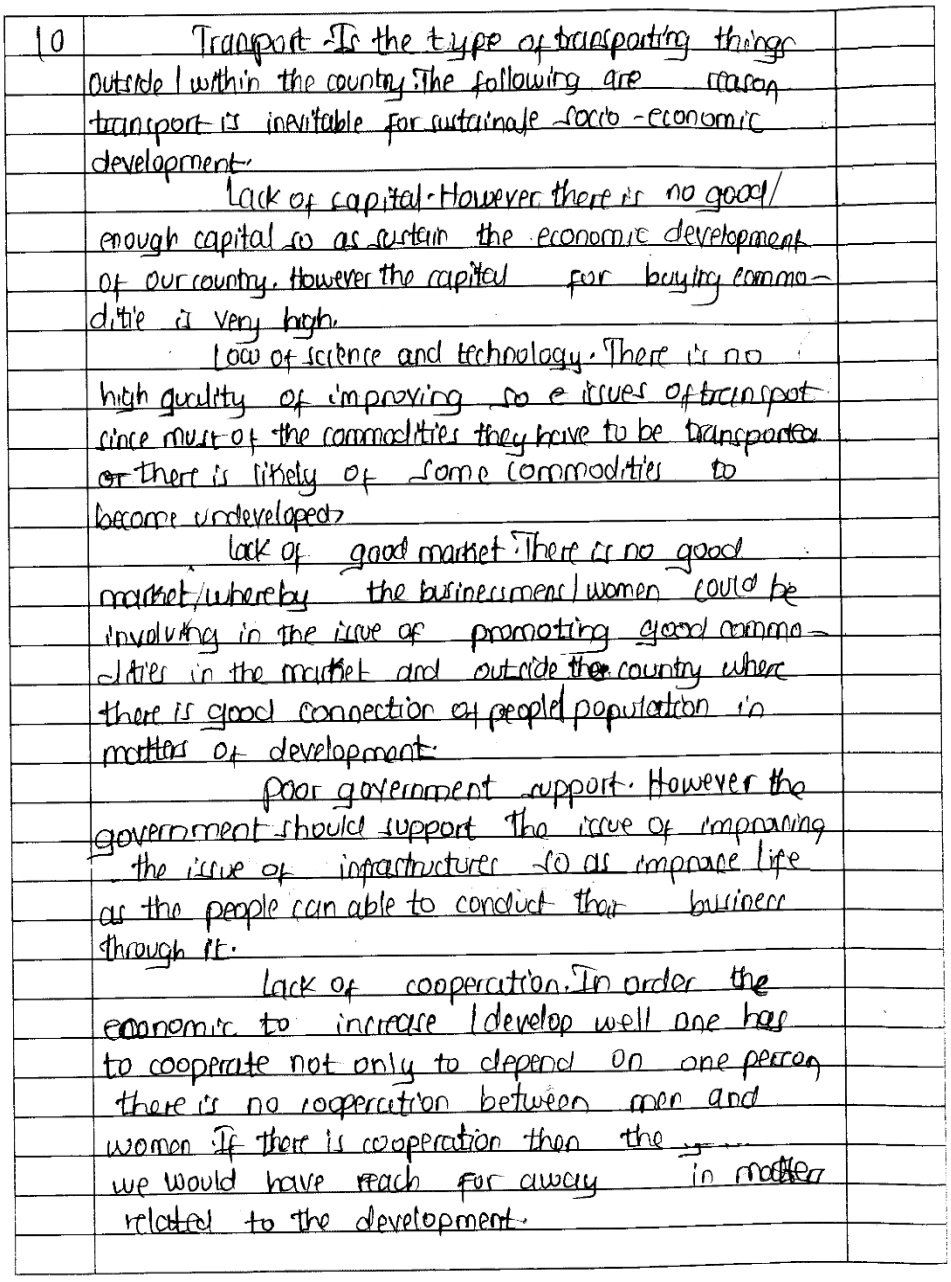
Transport acts as arrears of foreign currency. Through transportation activities we are able to acquire foreign currency from other countries. For example when tourists fly from South America through their airplanes coming to Tanzania, that we they have to exchange their money at the Central Bank of Tanzania (BOT) before they get into the country, such a scenario is also a very great source of socio-economic development in the country.

Generally, transportation activities are sometimes detrimentous or disadvantageous as they can act as source of intruders in our country, lead to fluctuation of trade and other economic activities and also the erosion of our own cultures.

ZX

Extract 10.1 shows a sample of correct responses to question 10.

On the other hand, 148,886 (46.54%) candidates had weak performance on this question. Some of the candidates in this category misinterpreted the demand of the question, while others had poor knowledge of the subject matter. Some of them provided relevant introductions and incomplete justification of the importance of transport for sustainable socio–economic development with irrelevant conclusions. Examples of irrelevant responses include *reduction of accidents* and *reduce government costs*. This candidate failed to realize that these are the challenges of transport because transport contributes to the increase or occurrence of accidents. Also a lot of capital needed to develop the transportation network. Other incorrect responses were *unskilled labour, poor government support* and *lack of capital*. He/she failed to understand that these are the problems facing the transport industry. Some of the responses provided by candidates reflected their poor English language proficiency and poor essay writing skills. Extract 10.2 indicates a sample of incorrect responses.


10 Transport -Is the type of transporting things outside / within the country. The following are reason transport is inevitable for sustainable socio-economic development.

Lack of capital. However there is no good/ enough capital so as sustain the economic development of our country. However the capital for buying commodities is very high.

Low of science and technology. There is no high quality of improving so e issues of transport since most of the commodities they have to be transported or there is likely of some commodities to become undeveloped.

lack of good market. There is no good market/whereby the businessmens/women could be involving in the issue of promoting good commodities in the market and outside the country where there is good connection of people/population in matters of development.

poor government support. However the government should support the issue of improving the issue of infrastructures so as improve life as the people can able to conduct their business through it.

lack of cooperation. In order the economic to increase / develop well one has to cooperate not only to depend on one person there is no cooperation between men and women. If there is cooperation then the ... we would have reach for away in matter related to the development.

Extract 10.2 is a sample of incorrect responses to question 10

In Extract 10.2, the candidate explained on factors hindering development of transport such as ;*lack of capital, low science and technology, lack of good market, poor Government support and lack of cooperation* instead of social economic importance of transport in Tanzania such as *it facilitates the transfer of raw materials to the manufacturing industries, it facilitates the diffusion of technology, it stimulates the development of other economic*

sectors, it stimulates the growth of towns or cities, It facilitates the movement of factors of production such as capital and labour from one place to another.

3.0 ANALYSIS OF THE CANDIDATES' PERFORMANCE IN EACH TOPIC

The CSEE 2022 Geography Examination paper consisted of 10 questions that were set from 15 topics, namely *Weather, the Solar System, Environmental Issues and Management, Forces that Affect the Earth, Agriculture, Soil, Sustainable Mining, Climate and Natural Regions, Map Reading and Map Interpretation, Application of Statistics, Elementary Survey and Map Making, Photograph Reading and Interpretation, Introduction to Research, Manufacturing Industry and Transport*. These topics were assessed in multiple choices questions, matching items, short answers questions and essay questions.

Analysis of the candidates' performance per topic in CSEE 2022 showed that candidates had good performance on *Photograph Reading and Interpretation (74.48%), Manufacturing Industry (72.985)*; and *Weather, Solar System, Environmental Issues and Management, Forces that Affect the Earth, Agriculture, Soil and Sustainable Mining* which were assessed in multiple choice items *(67.39%).* Moreover, *Transport (53.46%), Climate and Natural Regions (45.55%), Introduction to Research (53.63%)* and *Map Reading and Interpretation (40.93%)* topics had average performance.

The candidates had weak performance on *Elementary Survey and Map Making (29.88%), Introduction to Simple Statistics (28.58%)* and *Forces that Affect the Earth's surface (5.30%)* topics. The attached Appendix shows the candidates' performance in each topic.

4.0 CONCLUSION

The analysis of individual questions shows that the general performance of the Geography subject (CSEE) in 2022 was good since 66.10 percent of the candidates passed while 33.90 percent failed. The level of performance has increased by 0.52 percent as compared to that of 2021 where 60.55 percent of candidates passed and 39.45 failed. The candidates who passed the examination demonstrated awareness of the demands of the questions, adequate knowledge of the subject matters tested, good essay writing skills, adequate mathematical skills, drawing skills, Map reading and Interpretation skills, Photograph Interpretation skills and good command in English language.

5.0 RECOMMENDATIONS

The recommendations proposed are based on the observations made through the analysis in this report. In order to improve the performance of the candidates in the Geography subject examination, the following are suggested.

(a) Teachers should use television and study tours in teaching and learning of *Forces that Affect the Earth's surface* topic. This will improve the students' competences in the topic, as it will help to observe wave erosion activities and resulting features in the coast area compared to other physical features on the Earth's surface.

(b) Teachers should teach by practical method. The method will enable the student to participate in chain survey activities by using survey tools in *Elementary Survey and Map Making* topic. By so doing, the students will get skills and understanding of the difference between the survey measuring tools and other survey tools with their uses.

(c) For the *Introduction to Simple Statistics* topic, teachers should help the students to observe and prepare different types of statistical charts and to know their uses, advantages and disadvantages. This will help the candidates to be competent in the uses of statistics in daily life.

(d) Students should read questions carefully in order to identify the requirement of each question. This will overcome the challenge of the candidates' inability to identify the requirements of the questions.

(e) Teachers should use Bloom's action verbs during the teaching and learning process. This will enable the candidates to acquire skills on how to respond to the question given and ultimately provide relevant responses.

(f) Students should practise communicating in English language since the language is used as a medium of instruction and communication in their daily school routines. They should also read both fiction and non-fiction books in order to improve their English language

proficiency in writing, reading, speaking and listening. This will help them to overcome the challenge of writing ungrammatical and meaningless sentences in answering some of the questions.

Appendix

SUMMARY OF THE CANDIDATES' PERFORMANCE IN EACH TOPIC FOR 013-GEOGRAPHY-CSEE 2022

Na.	Topic	Question Number	|% of candidates who scored 30 marks and above	Remark
1.	*Photograph Reading and Interpretation*	7	74.48	Good
2.	*Manufacturing Industry*	9	72.98	Good
3.	*Weather, Solar System, Environmental Issues and Management, Forces that Affect the Earth, Agriculture, Soil and Sustainable Mining*	1	67.39	Good
4.	*Transport*	10	53.46	Average
5.	*Climate and natural regions*	2	45.54	Average
6.	*Introduction to Research*	80	44.27	Average
7.	*Map Reading and Interpretation*	3	40.93	Average
8.	*Elementary Survey and Map Making*	5	29.88	Weak
9.	*Introduction to Simple Statistics*	4	28.58	Weak
10.	*Forces that Affect the Earth's*	6	5.30	Weak