3.2 GEOGRAPHY (312)

The year **2018 KCSE Geography** examination was presented in two papers: **paper 1 (312/1)** examines the **"Physical Geography and Map Reading"** while **paper 2 (312/2)** examines **"Human and Economic Geography, Photographic Interpretation skills and Statistics".** Each of the two papers had ten (10) questions.

This report analyses the performance of candidates in the year 2018 geography examination papers, paying special attention to the poorly performed items. It looks at what the questions tested, the candidates' weaknesses and possible reasons for their poor performance. It also gives advice to Geography teachers with the aim of improving future performance in the subject.

3.2.1 GENERAL CANDIDATES' PERFORMANCE

The table below shows the overall performance in Geography over the period 2014 to 2018.

Table 10: candidates overall performance in Geography for the last five years

Year	Paper	Candidature	Maximum Score	Mean Score	Standard Deviation
2014	1		100	34.25	17.05
	2		100	53.81	19.16
	Overall	**121,854**	**200**	**88.03**	**34.17**
2015	1		100	35.70	16.95
	2		100	52.50	18.16
	Overall	**132,881**	**200**	**87.83**	**32.64**
2016	1		100	37.93	19.41
	2		100	46.79	20.99
	Overall	**146,504**	**200**	**84.67**	**38.72**
2017	1		100	42.21	17.09
	2		100	47.33	18.03
	Overall	**156,057**	**200**	**89.36**	**33.69**
2018	1		100	37.85	18.16
	2		100	45.4	17.97
	Overall	**166,507**	**200**	**83.25**	**36.13**

The following observations can be made from the table above:

(i) The candidature increased from **156,057** in 2017 to **166,507** in 2018.

(ii) There was a drop in the overall performance of the subject from an overall mean of **89.36** in 2017 to **83.25** in 2018. The overall performance of the subject was average.

(iii) The performance in Geography paper one **(312/1)** dropped from a mean of **42.21** in 2017 to **37.85** in 2018.

(iv) The performance of Geography paper two **(312/2)** also registered a slight drop from a mean of **47.33** in 2017 to **45.4** in 2018.

(v) The standard deviation in both papers shows a reasonable spread of candidates' scores from the mean; **18.16** in **312/1** and **17.97** in **312/2**.

Questions that were generally seen to performed poorly will be discussed in the section below.

3.2.2 Geography Paper 1 (312/1)

The performance of candidates in this paper dropped from a mean of **42.21** in 2017 to **37.85** in 2018. The paper adequately tested the syllabus and the questions were well balanced. This report will look at questions that registered poor performance, identify areas of weakness, the expected responses and general advice to teachers to improve performance.

The questions that were performed poorly are: Q 2(a) and (b), 6 b (ii), c, d and 7(b)

Requirement Q 2 (a)
Name **three** types of folds.

Weaknesses
Majority of the candidates confused types of folds with faults this led to many of the candidates giving wrong responses.

Expected responses.
Name three types of folds
- Simple / symmetrical fold.
- Asymmetrical fold.
- Over fold.
- Recumbent fold.
- Nappe fold./overthrust
- Isoclinal fold.
- Anticlinorium/synclinorium complex
- Monoclinal fold

Advice to teachers
Teachers should engage candidates in discussion on types of folds and faults using diagrams and the candidates should practice drawing each of the type for better understanding. Frequent exercises and quizzes will assist in the mastery of content.

Requirement Q 2 (b)
State **three** factors that determine the folding of crustal rocks.

Weaknesses
Most of the candidates used the general term of tectonic movements instead of isolating the specific tectonic force of compression which is responsible for folding of crustal rocks. .Other candidates did not relate folding with young sedimentary rocks.

Expected responses
State three factors that determine the folding of crustal rocks
- Crustal rocks should be in layers/sedimentary.
- The rocks should be young in order to bend.
- The forces operating on the crustal rocks should be compressional.
- The amount of pressure applied should be high.

Advice to teachers

Teachers should teach folding more keenly as guided by the syllabus. Teachers require to distinguish the tectonic forces and how they operate within the crustal rocks as well as their effects. This can be more effective with illustrations.

Requirement Q 6 b (ii) (c) (d).

6 b) (ii) Citing evidence from the map, identify three social services offered in the area covered by the map.

c) Describe the relief of the area covered by the map.

d) Citing evidence from the map, explain four factors that may have influenced agricultural activities in the area.

Weaknesses

Some candidates gave economic functions instead of social services. Most candidates had challenges in identifying relief features on the map, others could not describe the relief in the area covered by the map. Most candidates were not able relate factors that influence agriculture with the evidence given on the map.

Expected responses

6 (b) (ii) Citing evidence from the map, identify three social services offered in the area covered by the map

- Social service	- Evidence
- Health services	- Dispensary/Health centre.
- Religious services	- Church/Mosques.
- Educational services	- Polytechnics/Schools.
- Administration services	- Chiefs/DC's. Office.
- Rehabilitation services	- Rehabilitation center/prison.
- Security	- Police post.
- Water supply	- Pump house

(b) Describe the relief of the area covered by the map

- The land slopes from West to East.
- The western part is a highland while the eastern is a lowland.
- There are many hills in the area covered by the map. Example Mgange Hills/Mragua Hills.
- The area has several river valleys.
- The Eastern part of the area is generally gently sloping.
- The highest point is 2208 metres.
- The lowest point is 620 metres.
- There is rugged landscape in the Western part/there are many ridges.
- There are bluffs/cliffs.
- The North Western part of the Map has steep slopes.
- There are outcrop rocks.
- There are many Cols.

(c) Citing evidence from the map, explain four factors that may have influenced agricultural activities in the area.

- Presence of road network to provide transport facilities.
- The South Eastern part receives low rainfall as evidenced by scrub vegetation suitable for sisal growth.

- There is availability of labour due to dense settlement at on the Western part around Mgange, Mragua and ,Mwangea
- The Eastern part is sparsely settled/ widely spaced contours hence mechanization.
- The Western part receives high rainfall as evidenced by forests and permanent rivers which has influenced farming.
- Availability of vertinary services evidenced by cattle dips favour livestock farming.
- Availability of advisory services evidenced by farmers training center favour farming in the area.

Advice to teachers

Teachers should teach map work more thoroughly with regular use of topographical maps. More emphasis should be put on the interpretation skills in map reading. Simplified notes can be provided coupled with frequent practical exercises to sharpen the map reading skills.

Requirement Q 7 (b)

Describe the processes of formation of each of the following types of sedimentary rocks:

i) Mechanically formed
ii) Organically formed

Weaknesses

Candidates had difficulties explaining how the two types of sedimentary rocks are formed. Some gave the general description of sedimentary rocks while others confused the chemically formed with the organically formed sedimentary rocks. Most answers showed limited knowledge on this topic.

Expected responses

(i) Mechanically formed

- Sediments used to form the rocks are derived from weathering of existing rocks.
- The weathered materials are transported by wind/ice/water.
- The weathered materials are deposited in layers on land or sea.
- They are then compacted, and cemented into sedimentary rocks.

(ii) Organically formed

- These rocks are formed from remains of dead plants and animals./fossils
- These remains accumulate in the oceans/basins/land, in layers.
- The materials are deposited in layers/strata.
- The accumulated materials are compressed, compacted and cemented into sedimentary rocks.

Advice to teachers

Teachers should cover in details this topic on rocks and clarify concepts for easy interpretation and comprehension. The teaching of the topic can be enhanced by giving frequent tests and field work on rocks in the local environment as indicated in the syllabus.

Teachers should caution learners to always read and understand the question requirement.

3.2.3 Geography Paper 2 (312/2)

The performance of candidates in this paper registered a drop in performance from a mean of **47.33** in 2017 to **45.4** in 2018.

This report looks at questions; 3 (a), (b), 5, 6a (i), b (ii) ,7 a (i),(ii),b, d, which presented some challenges in the way candidates attempted them.

Requirement Q 3 a, b
a) Name **three** places in Kenya where geothermal energy has potential of being harnessed.

b) State **three** physical factors that have favoured high Hydro-Electric power production in Uganda.

Weaknesses
Most candidates had limited knowledge on potential places/areas where geothermal power can be harnessed in Kenya while others had minimal knowledge on Hydro-electric power production in Uganda.

Expected responses

3 (a) Name **three** places in Kenya where geothermal energy has potential of being harnessed.
- Mt. Longonot/ Suswa/Homa hills.
- Lake Bogoria/Baringo.
- Eburru.
- Menengai Crater/Mai-Mahiu.
- Lake Turkana.
- Lake Magadi.

(b) State **three** physical factors that have favoured high hydro-electric power production in Uganda.
- Large volume of water from River Nile/ other rivers/L. Victoria.
- The Owen Falls provided a natural waterfall for power generation.
- High rainfall/1000mm throughout the year to enable high volume of water.
- The regular supply of water from rivers/lakes.
- Presence of hard basement/rocks to form firm foundation.
- Presence of deep valleys/gorges.
- Presence of non-porous rocks / impervious prevent leakage of water.

Advice to teachers
Atlases should be used to identify all places with potential for geothermal exploitation in Kenya when teaching this topic. Teachers need to exhaustively discuss the development of HEP projects and be specific to the case studies highlighted in the syllabus such as in Uganda.

Requirement Q 5
List **three** environmental hazards that are caused by human activities.

Weaknesses.
Most candidates failed to single out environmental hazards caused by human activities as the question required hence mixed responses were given.

Expected responses

List **three** environmental hazards that are caused by human activities.

- Air pollution/Toxic gases/land pollution/noise/sound pollution.
- floods
- Fires
- Oil spills
- Desertification/drought.
- Soil erosion
- Landslides.
- Nuclear waste/radiation.
- Pests.

Advice to teachers.

In teaching this topic teachers should involve learners in identifying and categorizing environmental hazards in to two, the natural and man-induced hazards to avoid confusion.

Requirement Q 6a (i), b (ii)

Study the data provided below and answer the questions that follow.

Value of export earnings of selected crops from Kenya (Ksh millions)

Crop	2012	2013	2014
Tea	101441	104648	93996
Coffee	22271	16328	19913
Sisal	1184	1020	1325
Total	**124896**	**121996**	**115234**

(a) (i) **Using a scale of 1 cm to 50,000 million, draw proportional circles to represent the total export earnings between 2012 and 2014. Use the diameter method.**

(b) (ii) **State four disadvantages of using proportional circles to represent the export values.**

Weaknesses

Most candidates failed to use the diameter method as required and instead used the square root method in constructing the proportional circles. Candidates used negative approach in answering question b) (i).

Expected responses

(a) (i) Draw proportional circles to represent the total export Earnings during the period of 2012 to 2014. Use diameter method.

Round totals

2012	-	125,000
2013	-	122,000
2014	-	115,000

Scale; 1cm represents 50,000 million.

Year	Value in Millions	Diameter	Radius
2012	125,000	2.5	1.3
2013	122,000	2.4	1.2
2014	115,000	2.3	1.1

OR

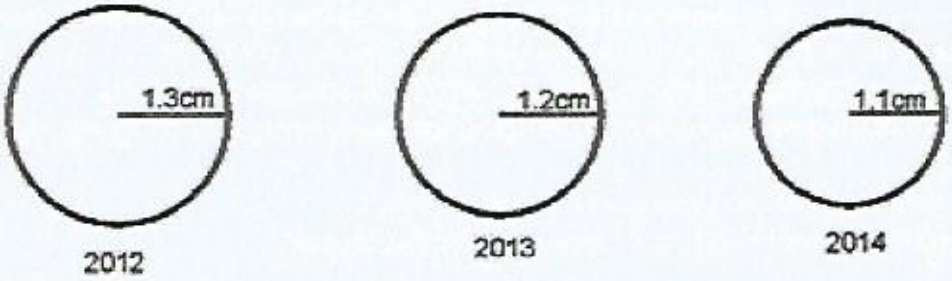
$2012=\frac{125,000,000,000}{50,000,000,000}=2.5$

$2013=\frac{122,000,000,000}{50,000,000,000}=2.4$

$2014=\frac{115,000,000,000}{50,000,000,000}=2.3$

The proportional circles showing the total export earnings for the period 2012 to 2014.

The total export earning for the period 2012 to 2014 . (Proportional circles)



Advice to teachers

Teachers need to teach all methods of constructing proportional circles and give regular exercises on the same. Candidates should be encouraged to avoid negative responses in answering questions and embrace positive approach.

Requirement 9a (i), (ii), b, d

(a) Explain each of the following methods of land rehabilitation:

(i) Mulching

(ii) Bunds and gabions

(b) Give **three** ways in which the government is trying to rehabilitate overgrazed lands in Kenya.

(d) Give the characteristics of land reclamation in Kenya.

Weaknesses

Inability to explain mulching, bunds and gabions as methods of land rehabilitation. The candidates could not relate the overgrazing and rehabilitation. They could also not give characteristics of land reclamation probably due to inadequate knowledge on the topic.

Expected responses

a) Explain the following methods of land rehabilitation.

(i) Mulching

- This is the use of crop residues such as vegetable remains, plant litter, and grass and polythene sheets to cover the soil/crop.
- It helps to retain soil moisture, reduce soil erosion and reduce the splashing effect of rain water on soil.
- It increases water infiltration in to the soil by preventing it from surface runoff.
- When the vegetative materials decompose it produces organic matter which increases the fertility of the soil.

(ii) Bunds and gabions

- Bunds are soil piles across a slope constructed to control soil erosion.
- Bunds are also built to check surface runoff which would cause soil erosion/influence water infiltration.
- Gabions are wire mesh that are filled with soil, stones and other materials.
- Gabions are constructed on slopes/across gullies to trap soils being carried by running water down slope.
- Gabions encourage vegetation growth in the trapped soil.
- Both are effective for controlling soil erosion/stabilizing slopes.

b) Give **three** ways in which the government of Kenya is trying to rehabilitate overgrazed lands in Kenya.

- Livestock extension officers move around advising farmers on the importance of keeping livestock according to the carrying capacity of the land.
- Introducing exotic breeds /cross breeds to emphasize quality and not quantity.
- It has established / encouraged establishment of ranches in the livestock keeping regions to improve quality of animals.
- It has encouraged farmers to grow fodder /introduced nourishing grass which is drought resistant.

Advice to teachers

Teachers' should illustrate the distinction of land reclamation and land rehabilitation during instruction. They can do interdisciplinary teaching with agriculture. They can use field studies and excursions, use resource persons and pictorial illustrations and diagrams.

3.2.4 GENERAL COMMENTS

i. Teachers should comprehensively cover the syllabus within the time allocated, marked by in-depth teaching of terms and concepts. The comparative studies outlined in the syllabus should be emphasized using approved revision books/Case Studies/Field work.

ii. Teachers should effectively test on the syllabus topics and desist from using unapproved revision examinations; they can use the KNEC past papers or teacher made tests. They should train candidates to on approaches to answer questions to avoid using a generalised approach.

iii. The teachers should train their students to use the rubric (instructions to candidates) and follow it during examinations. They should learn to thoroughly read and understand the requirement of each question before making an attempt.

iv. The teachers should expose students to discussions and debates and use of teaching and learning aids like videos, maps, charts and atlases in geography lessons for the learners to understand better the concepts. The resources should be carefully chosen.

v. Students should be exposed to varied topographical maps, photographs and statistical data for frequent practice on map reading, photograph interpretations, statistical data calculation and interpretation to enhance acquiring of different skills.

vi. Field excursions /study should be encouraged for better understanding of taught concept.

vii. Candidates should be encouraged to do in depth revision and reading on the topics covered in the syllabus using the relevant diagrams. Rote learning should be discouraged.

viii. There is need for in-service for geography teachers on how to handle the syllabus and detailed supervision by the quality and standards subject officers in the department of education at the county levels.

ix. County subject specialists' seminars/workshop should be held on annual basis to brainstorm on the best approach to improve subject performance and popularity.