312/1 MS
GEOGRAPHY
Paper 1
MARKING SCHEME
Nov. 2019

THE KENYA NATIONAL EXAMINATIONS COUNCIL

KENYA CERTIFICATE OF SECONDARY EDUCATION

GEOGRAPHY

Paper 1

MARKING SCHEME
(CONFIDENTIAL)

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This marking scheme consists of 21 printed pages.

MARKING SCHEME

SECTION A

Answer **all** questions this section.

1. (a)	**Distinguish between Geography and Environment** Geography refers to the study of the distribution of natural and human features/phenomenon and their interrelationship on the earth surface while environment refers to external conditions that surround an organism and has influence on its behaviour.	~~2 marks~~ 2
(b)	**Identify the two branches of Geography** - Physical Geography - Human Geography	~~2 marks~~ 2
2. (a)	**Name the parts marked P, Q and R.** P – Vacuum Q - Glass tube R - Mercury ~~3x1=~~	~~3 marks~~ 3

(b)	**State three benefits of weather forecasting to human activities.** - It enables farmers to plan their farming activities. - It helps in guiding tourist activities. - It enables military personnel to plan their military activities. - It enables people to choose suitable clothing. - It guides people on sporting activities. - It guides people on fishing activities. - It helps to determine the times for air/sea travels - Planning for weather related disasters. ~~Any 3x1=~~. Any 3x1	~~3 marks~~ 3
3.	**Give four proofs that support the theory of continental drift.** - Some continents seem to fit geometrically ~~and geologically into~~ a jigsaw fit along the coastal margins - There are similarities between the fossils of flora and fauna found on both sides of Atlantic Ocean. Paleontological/paleozoological - Some geological structure can be traced from one continent to another. - There are similarities in the past climate in the different parts of the world. Paleoclimatological evidence - There are continuous mountain ranges made	

3 3 (6)

	up of young volcanic rocks at the mid Atlantic. - The shores of Red Sea exhibits evidence of having undergone lateral displacement. / Sea flow spreading - Paleo-magnetic evidence/minerals with same alignment are found in different continents adjacent to one another. – Similarity of flora and fauna in different continents.		
4. (a)	**Give three factors that influence the way a river transports its load.** - The volume of water. - The gradient of the slope. - The nature of the load. - The velocity of the river. - The amount of the load. Any 4x1 =	4 marks 4	4 (4)
(b)	**Name the features marked X, Y and Z.** X – Bluff Y – Levees Z – Alluvium ~~3x1=~~	~~3 marks~~ 3	3
5. (a)	**State the two causes of vertical movement of the ocean water.** - The differences in the density. - The convergence of ocean currents.	~~3 marks~~ 3 ~~2 marks~~ 2	3 (6) 2
		(1)	

(b)	**List three types of ocean tides** - Spring tides - Neap tides - Perigian tides - Apogean tides. Any 3x1=	~~3 marks~~ 3 3 (5)

SECTION B

Answer **question 6** and **any other two questions** from this section.

6.	**Study the map of Yimbo 1:50,000 (Sheet 115/1) provided and answer the following questions.**	
(a)(ii)	**What is the magnetic variation of the map?** - 2°28'	~~2 marks~~ 2
(ii)	**Identify two natural features found at the grid square 3597.** -Scrub -River - Meanders -papyrus swamp - scattered trees - Thicket - Papyrus vegetation - Gentle slope - River valley Any 2X1	~~2 marks~~ 2
(iii)	**Identify two countries represented in the area covered by the map.** - Kenya - Uganda	~~2 marks~~ 2
(b)(i)	**Give the direction of the trigonometrical station at the grid square 2789 from the Air photo principal point at Nyangoma mission school** - North West. NNW/324°±1	~~2 marks~~ 2

6

(ii)	**Measure the length of the provincial boundary to the North West of the area covered by the map. Give your answer in kilometres.** - ~~6.2km~~ ± 0.1	~~2 marks~~ 2
(c) (i)	**Give evidence that show the area covered by the map receives low rainfall.** - Presence of scattered trees. - Presence scrub vegetation. - Presence of seasonal rivers/swamps. - Presence of dams/water holes. Any 3x1=	~~3 marks~~ 3
(ii)	**Explain how the following factors have influenced the distribution of settlements in the area covered by the map.** - Transport - Along the roads/motorable tracks/footpaths, there is linear settlement. - At road junctions there are clustered/nucleated settlements. Any 1x2 ~~Any 1x2=~~ Vegetation - There are no settlements within the thickets/areas where there are papyrus swamp. - Most of the areas covered by	~~2 marks~~

	scrub/scattered trees have clustered/nucleated settlement. Any 1x2 {2} Any 1x2= 2 marks Relief - There are no/few settlements on the hills/isolated islands in the lake. - There are clustered/nucleated settlements on the undulating land. Any 1x2 {2} Any 1x2= 2 marks		6 9
(d)	**Describe the drainage of the area covered by the map.** -The area has many, permanent, rivers. - There are many seasonal rivers. / indefinite rivers - There are lakes – Lake Sare, Lake Victoria. -The main drainage feature is L. Victoria - There are papyrus swamps/seasonal swamps - There are man-made reservoirs/dams. - Some rivers have tributaries - Some rivers form dendritic drainage pattern along River Yala. - Most of the rivers are draining into Lake Victoria. -The are dissappearing / vanishing rivers -There is a pond (grid 3891) -There is a waterhole (grid 2882) -The main River is R. Yala. Any 6x1= 6 marks		6

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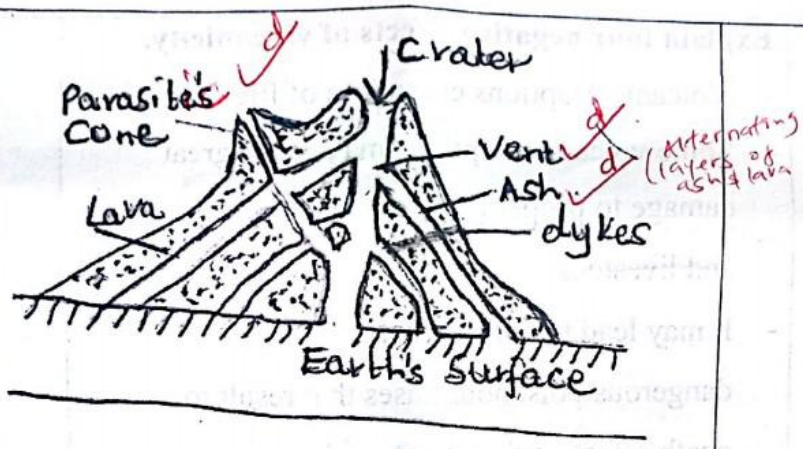
7. (a)	**Using examples from East Africa, describe each of the following types of volcanoes:**	
(i)	**Active volcano** - **They erupted in the recent past.** d ✓ - **They show current volcanic activities.** d ✓ - **They are likely to erupt, any time.** d ✓ **For examples, Ol donyo Lengai** e ✓ **in Tanzania.,** Shetani, Chaimu in Kenya. **Description – 2 marks** (3 max 2) **Example – 1 mark** (3 max 1)	~~3 marks~~ 3

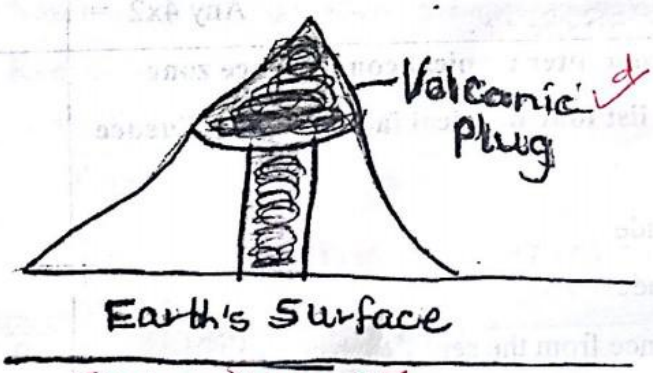
(ii)	Dormant volcano - This is a volcano that is not active. d - It has not shown any signs of activity in the recent past. d - It erupted in the last 500 years. d - It is likely to erupt again, d example is mount Longonot ,~~Kenya~~ ,mount Kilimanjaro Tanzania, Suswa, Menengai Description – ~~3 marks~~ 4 max 3 Example – ~~1 mark~~ 4 max 1	~~4 marks~~ 4 7
(b)	**Using a well labelled diagram, explain how the following features are formed.**	
(i)	Composite volcano - It is formed as a result of ~~x~~ central volcanic eruptions. t - Violent eruption forms a layer of ash. t - The violence ceases and lava pours out forming a layer of lava on top of the ash. t - Lava also escapes from the sides of the cone to form conelet/parasitic cone. t - A volcanic cone made up of ash & lava layers ~~It is~~ built up over a long period of time as a result of many eruptions. t ~~Explanation – 4 marks~~ t – 5 max 4 d 3 max 2	6



~~Diagram– 2 marks~~ ~~6 marks~~

(ii) Volcanic plug

- A volcano is exposed to agents of erosion and weathering over a prolonged period of time.
- This exposes a remnant of lava which had solidified ~~on top of a volcano~~ inside the vent because its more resistant.
- Continued ~~degradation~~ erosion of surrounding rocks leads to formation of a steep sided neck of solid lava on top of a volcano.
- The steep sided neck is called a volcanic plug.



~~Explanation~~
~~- 3 marks~~
~~Diagram – 1 mark~~

Text – 4 max 3
diagram – 1

4 | 10

(c)	**Explain four negative effects of vulcanicity.** - Volcanic eruptions cause loss of life/livestock - Some volcanic eruptions may cause great damage to property/infrastructure/buildings - Lava flows may bury minerals ~~and livestock.~~ - It may lead to emission of dangerous/poisonous gases that result to death/affect environment. - It causes powerful sea waves/tsunami that can drown ~~neighbouring~~ coastland islands. - Volcanic mountains create rain shadow on the leeward side causing dryness and this discourages agriculture. - Volcanic mountains may be barriers to construction of infrastructure, making it expensive. - The rugged nature of volcanic landscape make settlement/agriculture difficult. - Lava flows cover agricultural land - Eruption of volcanic ash and dust into the atmosphere hinders air transport. Any 4x2 = ~~8marks~~ 8		8
8. (a) (i)	**Apart from inter tropical convergence zone (ITCZ), list four physical factors that influence climate.** - Latitude - Relief/Altitude, Aspect - ~~Altitude~~ - Distance from the sea/continentality ~~Aspect~~		

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	- Ocean currents - Winds/air masses - Configuration of the coastline / Allignment of the coastline Any 4x1=	4 marks 4
(ii)	**Give four characteristics of inter-tropical convergence zone (ITCZ)** - It is found within $23\frac{1}{2}°$ North and $23\frac{1}{2}°$ south of the Equator. / within the tropics ✓ - It experiences high temperature. ✓ - It has low pressure. / doldrums - It is a zone where South East and North East trade winds converge. - The zone migrates North and South of the equator with the apparent movement of the overhead sun. - It is associated with convectional rainfall, high rainfall - It is associated with high humidity Any 4x1=	4 marks 4 8
(b) (i)	**Name the three equatorial climatic regions of Kenya.** - Modified equatorial climate of the Coast. - Modified equatorial climate of North Western margin. / border - Modified equatorial of Lake the region.	3 marks 3
(ii)	**Describe the Tundra climate.** - It is found above $66\frac{1}{2}°$ north / Arctic circle above and below $66\frac{1}{2}°$	

	south of the equator. / Antarctic circle. - It has cold winters / with temperatures varying between –29°C to - 40°C. - It has very long winters / lasting 8 months. - It has cool summers / ~~with~~ temperatures of about 10°C - 15°C. - It has short summers / lasting 3 months. - It has a very large annual range / ~~of~~ temperature going up to 73°C. - There is permanent cover of snow and ice/permafrost. - The area is generally dry / with low annual ~~rainfall of~~ precipitation / 100 – 250mm. - During the long cold winters, polar winds are dominant. - Snow storms/blizzards are common in this region. - It is a high pressure zone - Area of low humidity	Any 6x1= ~~6 marks~~ 6 9
(c) ✓✓	**Explain four human causes of desertification.** - Deforestation which interferes with the hydrological cycle leading to low rainfall. ✓✓ - Poor cultivation practices which has led to soil degeneration and reduction of vegetation. ✓✓ - Poor irrigation practices which lead to ~~water logging of the soil~~/excessive accumulation of salts in the top soil/~~lowering of the water table~~ hindering growth of vegetation ✓✓	

	- Overdrawing of ground water lead to lowering of the water table leading to aridity. ✓✓ ~~leading to aridity.~~ - Industrialization which has led to depletion of ozone layer thus leading to increased temperature and high rates of evaporation. ✓✓ - Overgrazing/overstocking which leads to destruction of vegetation interfering with the hydrological cycle. ✓✓ Any 4x2=	~~8 marks~~ 8
9. ~~x~~(a) (i) ✓	**Define an ocean.** - An ocean is an extensive body of saline water occupying a large basin between continents. ✓✓	~~2 marks~~ 2
(ii) ✓✓ *	**Explain the three causes of variation in the amount of salt in ocean water.**	
(i)	- High temperature in ocean water results to high evaporation which leaves behind higher salt concentration. ✓✓ - Fresh water added to the oceans through rainfall and melt ice reduces concentration of salts in the ocean. ✓✓ - Upwelling of water and ocean currents leads to mixing of ocean water causing variation in concentration of salts. ✓✓	3 x 2 = ~~6 marks~~ 6

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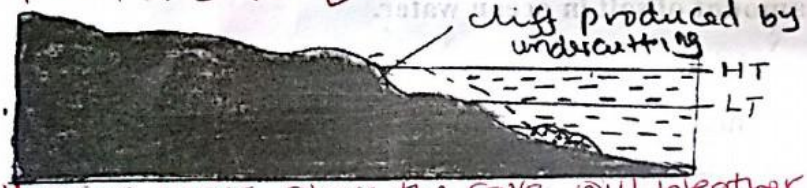
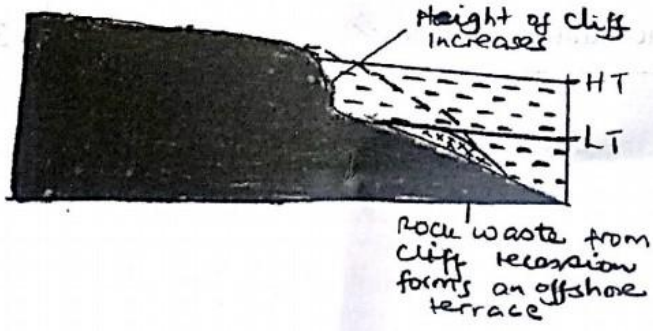
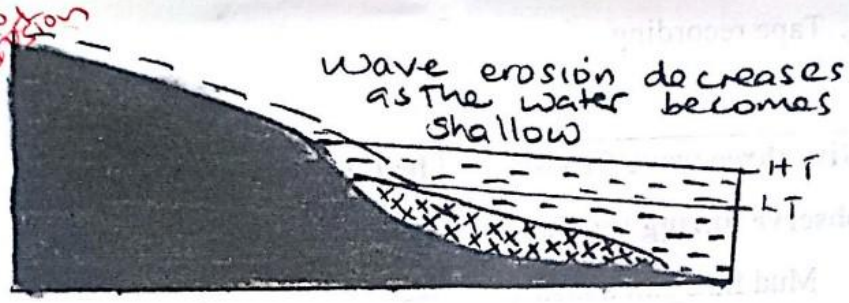
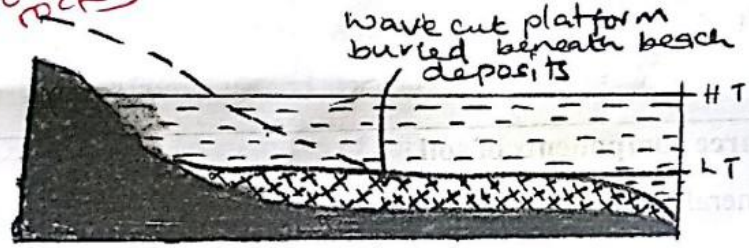
(b) (i)	**Identify three processes involved in wave erosion.** - Corrasion/abrasion - Hydraulic action/quarrying action - Attrition - Solution/corrosion Any 3x1=	3 marks 3
(ii)	**With the aid of well labelled diagrams, describe the processes through which a wave cut platform is formed.** - During high tides, there is undercutting at the base of the cliff by wave erosion. ✓ forming a notch ✓ - At low tide level, wave erosion is reduced at the base of the cliff. - Continued wave erosion enlarges the notch to form a cave. ✓  - Hanging rocks above the cave will weather and collapse ✓ - The fallen rocks resulting from wave erosion at the base and weathering above leads to the collapse of the upper part of the cliff to form an off-shore terrace. - When this process is repeated overtime the cliff will retreat ✓ to form a fairly flat surface on the shore called a wave cut platform. ✓	
		

4 2
3 3

- The rock debris is swept backwards and forwards and deposited by breaking waves resulting to the formation of a beach.



- The cliff continues to retreat and a gently sloping bench called a wave cut platform is formed.



HT - High tide
LT - Low tide

Text - 6 max 4
diagram - 4

Diagrams-4 marks
Text-4 marks 8 marks 8

(c)	**You intend to carry out a field study on types of features resulting from wave deposition along the coast.** Identify three methods you would use to record data.
(i)	- Photographying /videos.

	- Field sketching/drawing diagrams. - Note taking. - Filling in questionnaires. - Tape recording. Any 3x1=	~~3 marks~~ 3
(ii)	**Give three wave depositional features you are likely to observe during the field study.** - Mud flats/salt marshes - Tombolo/Bay bar/offshore bar - Beaches/beach cusps/beach ridges/beach berms - Cuspate forelands - Dune belts - Spit. Any 3x1=	~~3 marks~~ 3
10.(a)	**List three components of soil** - Mineral particles/inorganic matter - Humus /organic matter - Water - Air - ~~Soil organisms.~~ Any 3x1=	~~3 marks~~ 3

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(b) (i)	Explain each of the following in relation to the classification of soil. Zonal - These are soils that have undergone long time soil formation/have a well developed soil profile/~~mature soils~~.	~~2 marks~~
(ii)	Intrazonal - These are soils that are formed under poor drainage conditions/waterlogged areas.	~~2 marks~~
(iii)	Azonal - These are young soils that have not been affected by soil forming processes/they do not have a well developed soil profile/they are immature and skeletal.	~~2 marks~~
(c)	**Explain three causes of soil degeneration.** - Poor agricultural practices such as burning of land/over cultivation/monoculture/over cropping cause soil to be deficient in some mineral nutrients leading to loss of soil fertility. - Excessive/wrong application of fertilizer may affect the soil pH making it too acidic interfering with soil micro-organisms. - Leaching due heavy rainfall can lead to percolation of soil nutrients to the lower horizons leading to deficiency of the top	

	soil. - Excessive drought leads to accumulation of salts in the top soil making it saline. - Soil erosion interferes with soil structure leading to loss of top fertile soil. - Other human activities such as quarrying/construction of roads interfere with soil structure leading soil degeneration. Any 6x1= Any 3x2	6 marks 6 6
(d)	**Students from Mwema School visited a nearby ranch to study types of soil.**	
(i)	Explain why they carried the following tools. • Hoes - To enable them dig up the soil samples. • Polythene bags - To help them carry soil samples.	2 marks 2 marks 4
(ii)	**Give three reasons why they would need to seek permission from relevant authorities.** - To be permitted to enter the ranch. - To enable the ranch administration to organize for a guide to take them around. - To be allowed by the Principal to be away from the school.	

	- To alert other teachers that their learners will be away that day. Any 3x1=	~~3 marks~~ 3
(iii)	**List three types of soil erosion they are likely to observe.** - Splash erosion - Gulley erosion - Sheet erosion - Rill erosion. Any 3x1=	~~3 marks~~ 3

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