



**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.

<p>1. (a) * ✓✓</p>	<p><b>Distinguish between Geography and Environment</b></p> <p>Geography refers to the study of the distribution of natural and human features/<sup>phenomena</sup>phenomenon and their interrelationship on the earth surface/while environment refers to external conditions that surround an organism (and has influence on its behaviour.)</p>		
	<p>(b) <b>Identify the two branches of Geography</b></p> <ul style="list-style-type: none"> <li>- Physical Geography</li> <li>- Human Geography</li> <li>- <i>practical geography</i></li> </ul>		<p>2-marks <u>2</u> 2</p>
<p>2. (a)</p>	<p><b>Name the parts marked P, Q and R.</b></p> <p>P - Vacuum</p> <p>Q - Glass tube</p> <p>R - Mercury</p>		<p>2-marks <u>2</u> 2</p> <p>(4)</p> <p>3-marks <u>3</u> 3</p>

<p>(b)</p>	<p><b>State three benefits of weather forecasting to human activities.</b></p> <ul style="list-style-type: none"> <li>- It enables farmers to plan their farming activities.</li> <li>- It helps in guiding tourist activities.</li> <li>- It enables military personnel to plan their military activities.</li> <li>- It enables people to choose suitable clothing.</li> <li>- It guides people on sporting activities.</li> <li>- It guides people on fishing activities.</li> <li>- It helps to determine the times for air/sea travels</li> </ul> <p><i>planning for weather related disasters.</i></p>	<p><del>3 marks</del> 3</p>
<p>3.</p>	<p><b>Give four proofs that support the theory of continental drift.</b></p> <ul style="list-style-type: none"> <li>- Some continents seem to fit geometrically and <del>geologically</del> into a jigsaw <sup>fit</sup> along the coastal margins</li> <li>- There are similarities between the fossils of flora and fauna found on both sides of Atlantic Ocean. <i>Paleontological/Paleozoological</i></li> <li>- Some geological structure can be traced from one continent to another.</li> <li>- There are similarities in the past climate in the different parts of the world. <i>paleoclimatological evidence</i></li> <li>- There are continuous mountain ranges made</li> </ul>	<p><del>3 marks</del> 3</p> <p>6</p>

2014  
1.10  
2.16

	<p>up of young volcanic rocks at the mid Atlantic.</p> <ul style="list-style-type: none"> <li>- The shores of Red Sea exhibits evidence of having undergone lateral displacement. <i>Sea flow spreading</i></li> <li>- Paleo-magnetic evidence/minerals with same alignment are found in different continents adjacent to one another.</li> <li>- <i>Similarity of flora and fauna in different continents.</i></li> </ul>		
4. (a)	<p><b>Give three factors that influence the way a river transports its load.</b></p> <ul style="list-style-type: none"> <li>- The volume of water.</li> <li>- The gradient of the slope.</li> <li>- The nature of the load.</li> <li>- The velocity of the river.</li> <li>- The amount of the load.</li> </ul>	Any 4x1 =	4-marks 4 <del>4</del> <del>4</del>
(b)	<p><b>Name the features marked X, Y and Z.</b></p> <p>X - Bluff Y - Levees Z - Alluvium</p>	Any 3x1 =	3-marks 3 3
5. (a)	<p><b>State the two causes of vertical movement of the ocean water.</b></p> <ul style="list-style-type: none"> <li>- The differences in the density.</li> <li>- The convergence of ocean currents.</li> </ul>	3x1 =	3-marks 3 <del>3</del> <del>6</del>
			2-marks 2 <del>2</del>



<b>(b)</b>	<b>List three types of ocean tides</b> <ul style="list-style-type: none"><li>- Spring tides</li><li>- Neap tides</li><li>- Perigean tides</li><li>- Apogean tides.</li></ul>	-3 marks 3
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5/3

the set of tides

**SECTION B**

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

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

<p>(ii) * ✓</p>	<p>Measure the length of the provincial boundary to the North West of the area covered by the map. Give your answer in kilometres.</p> <p>6.1 KM - 6.2 km ± 0.1 (6.0 KM - 6.2 KM) ✓</p>	<p>2-marks 2 4</p>
<p>(c) (i)</p>	<p>Give evidence that show the area covered by the map receives low rainfall.</p> <ul style="list-style-type: none"> <li>- Presence of scattered trees.</li> <li>- Presence scrub vegetation.</li> <li>- Presence of seasonal rivers/swamps. ✓</li> <li>- Presence of reservoirs ✓</li> <li>- Presence of dams/water holes. ✓</li> </ul> <p>Any 3x1=</p>	<p>3-marks 3</p>
<p>(ii) * ✓</p>	<p>Explain how the following factors have influenced the distribution of settlements in the area covered by the map.</p> <ul style="list-style-type: none"> <li>- Transport</li> <li>- Along the roads/motorable tracks/footpaths, there is linear settlement ✓</li> <li>- At road junctions there are clustered/nucleated settlements. ✓</li> </ul> <p>Any 1x2 [2] Any 1x2=</p> <p>Vegetation</p> <ul style="list-style-type: none"> <li>- There are no <sup>few</sup> settlements within the woodlands ✓</li> <li>- thickets/areas where there are papyrus swamp. <i>Vegetation</i></li> <li>- Most of the areas covered by</li> </ul>	<p>2-marks</p>



	<p>scrub/scattered trees have clustered/<sup>✓</sup>nucleated settlement.</p> <p><i>Any 1x2 {2}</i></p> <p>Any 1x2=</p> <p>Relief</p> <ul style="list-style-type: none"> <li>- There are no <sup>few</sup> settlements on the hills/<sup>✓</sup>isolated islands in the lake<sup>✓</sup></li> <li>- There are clustered/nucleated settlements on the undulating land<sup>✓</sup></li> </ul> <p><i>Any 1x2 {2}</i></p> <p>Any 1x2=</p>	<p>2-marks</p> <p>2-marks</p>
<p>(d)</p>	<p><b>Describe the drainage of the area covered by the map.</b></p> <ul style="list-style-type: none"> <li>- The area has many <sup>✓</sup>permanent rivers<sup>✓</sup>.</li> <li>- There are <sup>many</sup> <sup>✓</sup>seasonal rivers<sup>✓</sup> / indefinite rivers.</li> <li>- There are lakes<sup>✓</sup> - Lake Sare, Lake Victoria.</li> <li>- The main drainage feature is L. Victoria</li> <li>- There are papyrus swamps/<sup>✓</sup>seasonal swamps<sup>✓</sup></li> <li>- There are man-made reservoirs/<sup>✓</sup>dams.</li> <li>- Some rivers have <sup>✓</sup>tributaries<sup>✓</sup></li> <li>- Some rivers form dendritic<sup>✓</sup> drainage pattern along River Yala.</li> <li>- Most of the rivers are draining into Lake Victoria.</li> <li>- There are <sup>✓</sup>disappearing / <sup>✓</sup>vanishing rivers</li> <li>- There is a pond (grid 3891)</li> <li>- There is a waterhole (grid 2882)</li> <li>- The main River is R. Yala.</li> </ul> <p><i>Any 6x1=</i></p>	<p>6 9</p> <p>6-marks</p> <p>6</p>

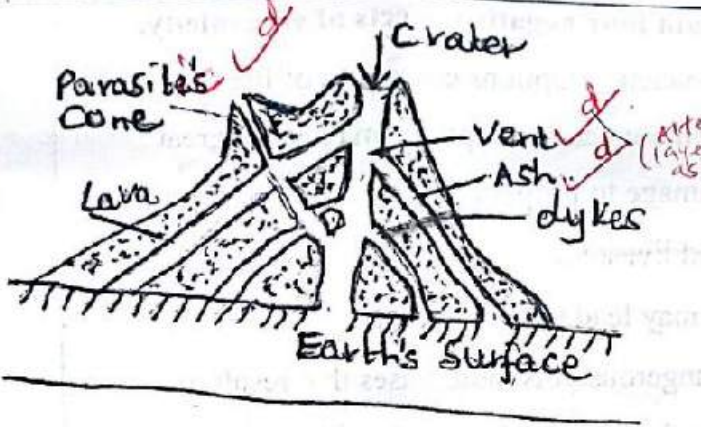
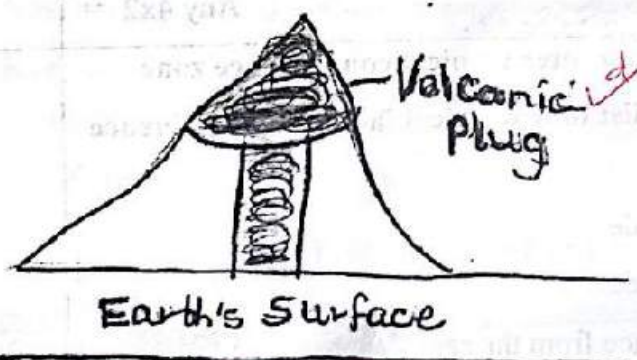
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<p>7. (a)</p>	<p><b>Using examples from East Africa, describe each of the following types of volcanoes:</b></p> <p>(i) <b>Active volcano</b></p> <ul style="list-style-type: none"> <li>- They erupted in the recent past. ✓</li> <li>- They show current volcanic activities. ✓</li> <li>- They are likely to erupt, any time. ✓</li> </ul> <p>For examples, Ol donyo Lengai in Tanzania, Shetani, Chaimu in Kenya. ✓</p>	<p><b>3-marks</b></p> <p><b>3</b></p>
	<p>Description - 2 marks Example - 1 mark</p>	<p><b>3-marks</b></p>

<p>(ii)</p>	<p><b>Dormant volcano</b></p> <ul style="list-style-type: none"> <li>- This is a volcano that is not active. ✓</li> <li>- It has not shown any signs of activity in the recent past. ✓</li> <li>- It erupted in the last 500 years. ✓</li> <li>- It is likely to erupt again, ✓ example is mount Longonot, Kenya, mount Kilimanjaro Tanzania, <i>Suswa, Menengai</i>.</li> </ul> <p>                 Description - <i>4 max 3</i>                  Example - <i>1 mark</i> </p>	<p>4 marks <i>4 7</i></p>
<p>(b)</p>	<p><b>Using a well labelled diagram, explain how the following features are formed.</b></p>	
<p>(i)</p>	<p><b>Composite volcano</b></p> <ul style="list-style-type: none"> <li>- It is formed as a result of <i>central</i> volcanic eruptions. ✓</li> <li>- Violent eruption forms a layer of ash. ✓</li> <li>- The violence ceases and lava pours out forming a layer of lava on top of the ash. ✓</li> <li>- Lava also escapes from the sides of the cone to form <i>conolet/parasitic cone</i>.</li> <li>- <i>A volcanic cone made up of ash &amp; lava layers</i></li> <li>- <del>It</del> <i>is</i> buildup over a long period of time as a result of many eruptions. ✓</li> </ul> <p>                 Explanation - <i>4 marks</i>  <i>St - 5 max 4</i>  <i>d 3 max 2</i> </p>	<p>6</p>



	 <p style="text-align: center;"><del>Diagram - 2 marks</del></p>	<p>6 marks</p>
<p>(ii)</p>	<p><b>Volcanic plug</b></p> <ul style="list-style-type: none"> <li>- A volcano is exposed to agents of erosion and weathering over a prolonged period of time. ✓</li> <li>- This exposes a remnant of lava which had solidified <sup>inside the vent because its more resistant</sup> on top of a volcano. ✓</li> <li>- Continued <sup>erosion of surrounding rocks</sup> degradation leads to formation of a steep sided neck of solid lava on top of a volcano. ✓</li> <li>- The steep sided neck is called a volcanic plug. ✓</li> </ul>  <p style="text-align: center;"><del>Diagram - 1 mark</del></p> <p style="color: red;">Text - { max 3 } diagram - 1 }</p>	<p>Explanation - 3 marks Diagram - 1 mark</p> <p style="text-align: right; font-size: 2em;">4 10</p>



<p>(c) ✓</p>	<p><b>Explain four negative effects of vulcanicity.</b></p> <ul style="list-style-type: none"> <li>- Volcanic eruptions cause loss of life ✓/livestock ✓</li> <li>- Some volcanic eruptions may cause great damage to property/infrastructure/buildings ✓</li> <li>- Lava flows may bury minerals ✓ and livestock ✓</li> <li>- It may lead to emission of dangerous/poisonous gases that result to death/affect environment. ✓</li> <li>- It causes powerful sea waves ✓/tsunami ✓ that can drown coastland/ ✓neighbouring islands.</li> <li>- Volcanic mountains create rain shadow on the leeward side causing dryness and this discourages agriculture. ✓</li> <li>- Volcanic mountains may be barriers to construction of infrastructure, making it expensive. ✓</li> <li>- The rugged nature of volcanic landscape make settlement/agriculture difficult. ✓</li> </ul> <p><i>- Lava flows cover agricultural land - Eruption of volcanic ash and dust into the atmosphere hinders air transport.</i></p>	<p>Marks 8</p>
<p>8. (a) (i)</p>	<p><b>Apart from inter tropical convergence zone (ITCZ), list four physical factors that influence climate.</b></p> <ul style="list-style-type: none"> <li>- Latitude</li> <li>- Relief / Altitude, Aspect</li> <li>- <del>Altitude</del></li> <li>- Distance from the sea / continentality</li> <li>- <del>Aspect</del></li> </ul>	<p>Marks 8</p> <p>25</p>

	<ul style="list-style-type: none"> <li>- Ocean currents</li> <li>- Winds/air masses</li> <li>- Configuration of the coastline / <i>Alignment of the coastline</i></li> </ul> <p style="text-align: right;">Any 4x1=</p>	<p>4 marks</p> <p style="text-align: right;">4</p>
(ii)	<p><b>Give four characteristics of inter-tropical convergence zone (ITCZ)</b></p> <ul style="list-style-type: none"> <li>- It is found within <math>23\frac{1}{2}^{\circ}</math> North and <math>23\frac{1}{2}^{\circ}</math> south of the Equator. / <i>within the tropics ✓</i></li> <li>- It experiences high temperature. ✓</li> <li>- It has low pressure. / <i>doldrums</i></li> <li>- It is a zone where South East and North East trade winds converge.</li> <li>- The zone migrates North and South of the equator with the apparent movement of the overhead sun.</li> <li>- It is associated with convectional rainfall, <i>high rainfall</i></li> <li>- <i>It is associated with high humidity</i></li> </ul> <p style="text-align: right;">Any 4x1=</p>	<p>4 marks</p> <p style="text-align: right;">8</p>
(b) (i)	<p><b>Name the three equatorial climatic regions of Kenya.</b></p> <ul style="list-style-type: none"> <li>- Modified equatorial climate of the Coast.</li> <li>- Modified equatorial climate of North Western margin. / <i>border</i></li> <li>- Modified equatorial of Lake <del>the</del> region.</li> </ul>	<p>3 marks</p> <p style="text-align: right;">3</p>
(ii)	<p><b>Describe the Tundra climate.</b></p> <ul style="list-style-type: none"> <li>- It is found above <math>66\frac{1}{2}^{\circ}</math> north / <i>Arctic circle above</i> and below <math>66\frac{1}{2}^{\circ}</math></li> </ul>	


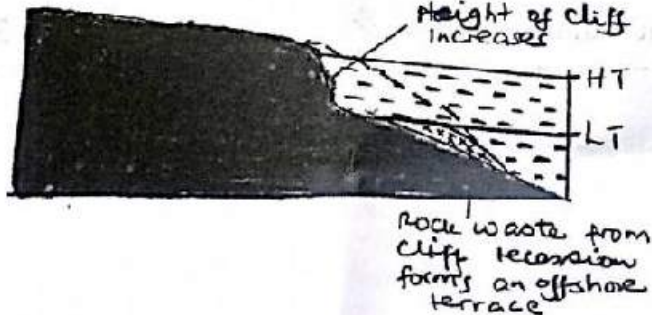


	<p>south of the equator.   <i>Antarctic circle.</i></p> <ul style="list-style-type: none"> <li>- It has cold winters   with temperatures varying between <math>-29^{\circ}\text{C}</math> to <math>-40^{\circ}\text{C}</math>.</li> <li>- It has very long winters   lasting 8 months.</li> <li>- It has cool summers   with temperatures of about <math>10^{\circ}\text{C}</math> - <math>15^{\circ}\text{C}</math>.</li> <li>- It has short summers   lasting 3 months.</li> <li>- It has a very large annual range   of temperature going up to <math>73^{\circ}\text{C}</math>.</li> <li>- There is permanent cover of snow and ice/permafrost.</li> <li>- The area is generally dry   with low annual <i>precipitation</i> rainfall of <math>100 - 250\text{mm}</math>.</li> <li>- During the long cold winters, polar winds are dominant.</li> <li>- Snow storms/blizzards are common in this region.</li> <li>- <i>It is a high pressure zone</i></li> <li>- <i>Area of low humidity</i></li> </ul>	<p>Any 6x1 = 6 marks <span style="float: right;">69</span></p>
<p>(c) ✓ ✓</p>	<p><b>Explain four human causes of desertification.</b></p> <ul style="list-style-type: none"> <li>- Deforestation which interferes with the hydrological cycle leading to low rainfall. ✓</li> <li>- Poor cultivation practices which has led to soil degeneration and reduction of vegetation. ✓</li> <li>- Poor irrigation practices which lead to water logging of the soil/excessive accumulation of salts in the top soil/ <i>hindering growth of</i> lowering of the water table <i>vegetation</i> ✓</li> </ul>	



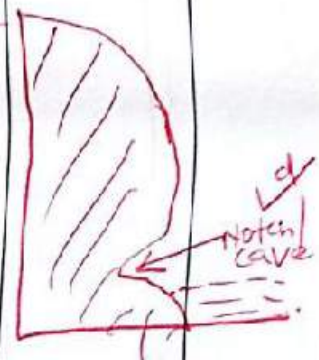
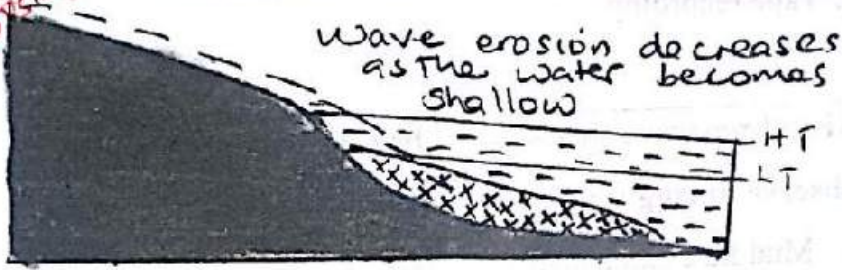
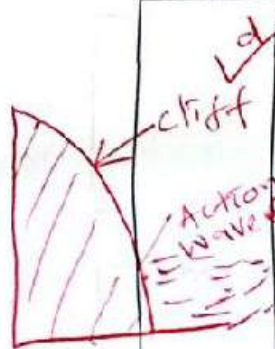
- Overdrawing of ground water lead to lowering of the water table leading to aridity. ✓

	<p>- Industrialization which has led to depletion of ozone layer thus leading to increased temperature and high rates of evaporation. ✓</p> <p>- Overgrazing/overstocking which leads to destruction of vegetation interfering with the hydrological cycle. ✓</p> <p>Any 4x2=</p>	<p>8 marks 8 3 25</p>
<p>9. (a) (i) ✓</p>	<p><b>Define an ocean.</b></p> <p>- An ocean is an <u>extensive</u> body of saline water occupying a large basin <u>between continents</u>. ✓</p>	<p>2 marks 2</p>
<p>(ii) ✓ (i)</p>	<p><b>Explain the three causes of variation in the amount of salt in ocean water.</b></p> <p>- High temperature in ocean water results to high evaporation which leaves behind higher salt concentration. ✓</p> <p>- Fresh water added to the oceans through rainfall and melt ice reduces concentration of salts in the ocean. ✓</p> <p>- Upwelling of water and ocean currents leads to mixing of ocean water causing variation in concentration of salts. ✓</p>	<p>3 x 2 = 6 marks 6 8</p>

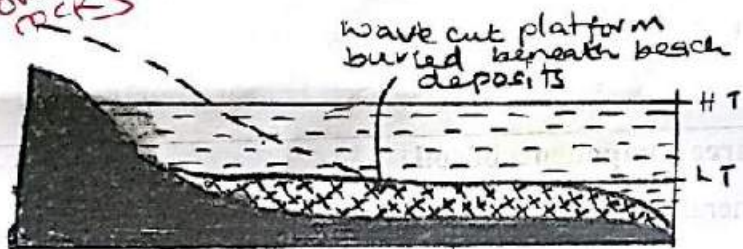
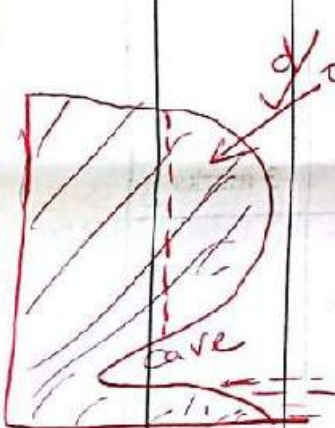
<p>(b)</p> <p>(i)</p>	<p><b>Identify three processes involved in wave erosion.</b></p> <ul style="list-style-type: none"> <li>- Corrasion/abrasion</li> <li>- Hydraulic action/quarrying action</li> <li>- Attrition</li> <li>- Solution/corrosion</li> </ul> <p style="text-align: right;">Any 3x1=</p>	<p style="text-align: right;">3-marks 3</p>
<p>(ii)</p>	<p><b>With the aid of well labelled diagrams, describe the processes through which a wave cut platform is formed.</b></p> <ul style="list-style-type: none"> <li>- During high tides, there is undercutting at the base of the cliff by wave erosion. <i>forming a notch</i></li> <li>- <del>At low tide level, wave erosion is reduced at the base of the cliff.</del></li> <li>- <i>Continued wave erosion enlarges the notch to form a cave.</i></li> </ul>  <ul style="list-style-type: none"> <li>- <i>Hanging rocks above the cave will weather and collapse.</i></li> <li>- <i>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.</i></li> <li>- <i>When this process is repeated over time the cliff will retreat to form a fairly flat surface on the shore called a wave cut platform.</i></li> </ul>	
<p>42 33</p>		



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 11

(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) - Photographing / videos.



	<ul style="list-style-type: none"> <li>- Field sketching/drawing diagrams. ✓</li> <li>- Note taking. ✓</li> <li>- Filling in questionnaires. ✓</li> <li>- Tape recording. ✓</li> </ul>	Any 3x1=	3-marks 3
(ii)	<p><b>Give three wave depositional features you are likely to observe during the field study.</b></p> <ul style="list-style-type: none"> <li>- Mud flats/salt marshes ✓</li> <li>- Tombolo/Bay bar/offshore bar ✓</li> <li>- Beaches/beach cusps/beach ridges / beach berms ✓</li> <li>- Cuspate forelands ✓</li> <li>- Dune belts ✓</li> <li>- Spit. ✓</li> </ul>	Any 3x1=	3-marks 3
10.(a)	<p><b>List three components of soil</b></p> <ul style="list-style-type: none"> <li>- Mineral particles/inorganic matter</li> <li>- Humus /organic matter</li> <li>- Water</li> <li>- Air</li> <li>- <del>Soil organisms.</del></li> </ul>	Any 3x1=	3-marks 33

25

<p><del>*(b)</del> ✓ (i)</p>	<p>Explain each of the following in relation to the classification of soil.</p> <p>Zonal</p> <ul style="list-style-type: none"> <li>- These are <sup>mature</sup> soils that have undergone long time <sup>of</sup> soil formation/have a well developed soil profile/<del>mature</del> soils. <del>2</del></li> </ul>	<p>2-marks 2</p>
<p>(ii)</p>	<p>Intrazonal</p> <ul style="list-style-type: none"> <li>- These are soils that are formed under poor drainage conditions/<del>waterlogged</del> areas. <del>2</del></li> </ul>	<p>2-marks 2</p>
<p>(iii)</p>	<p>Azonal</p> <ul style="list-style-type: none"> <li>- 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. <del>2</del></li> </ul>	<p>2-marks 2</p>
<p><del>*(c)</del> ✓ ✓</p>	<p>Explain three causes of soil degeneration.</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- Excessive/wrong application of fertilizer may affect the soil pH making it too acidic interfering with soil micro-organisms.</li> <li>- Leaching due heavy rainfall can lead to percolation of soil nutrients to the lower horizons leading to deficiency of the top</li> </ul>	<p>2-marks 2</p>



	<p>soil.</p> <ul style="list-style-type: none"> <li>- Excessive drought leads to accumulation of salts in the top soil making it saline.</li> <li>- Soil erosion interferes with soil structure leading to loss of top fertile soil.</li> <li>- Other human activities such as quarrying/construction of roads interfere with soil structure leading soil degeneration.</li> </ul>	
* (d) ✓✓	<p>Any 6x1 = 6 Or 3x2</p> <p>Students from Mwema School visited a nearby ranch to study types of soil.</p>	6 marks 6
(i)	<p>Explain why they carried the following tools.</p> <ul style="list-style-type: none"> <li>• Hoes             <ul style="list-style-type: none"> <li>- To enable them dig up the soil samples. ✓</li> </ul> </li> <li>• Polythene bags             <ul style="list-style-type: none"> <li>- To help them carry soil samples. ✓</li> </ul> </li> </ul>	2 marks
(ii)	<p>Give three reasons why they would need to seek permission from relevant authorities.</p> <ul style="list-style-type: none"> <li>- To be permitted to enter the ranch. ✓</li> <li>- To enable the ranch administration to organize for a guide to take them around. ✓</li> <li>- To be allowed by the Principal to be away from the school. ✓</li> </ul>	2 marks 4

	<p>- To alert other teachers that their learners will be away that day.</p> <p style="text-align: right;">Any 3x1=</p>	<p><del>3</del>-marks 3</p>
(iii)	<p><b>List three types of soil erosion they are likely to observe.</b></p> <ul style="list-style-type: none"> <li>- Splash erosion</li> <li>- Gully erosion</li> <li>- Sheet erosion</li> <li>- Rill erosion.</li> </ul> <p style="text-align: right;">Any 3x1=</p>	<p>3-marks 3</p>

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