



MARANDA HIGH SCHOOL

Kenya Certificate of Secondary Education
MOCK EXAMINATIONS 2021

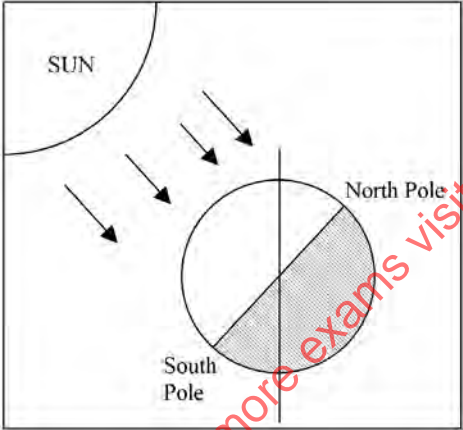
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GEOGRAPHY

Paper 1

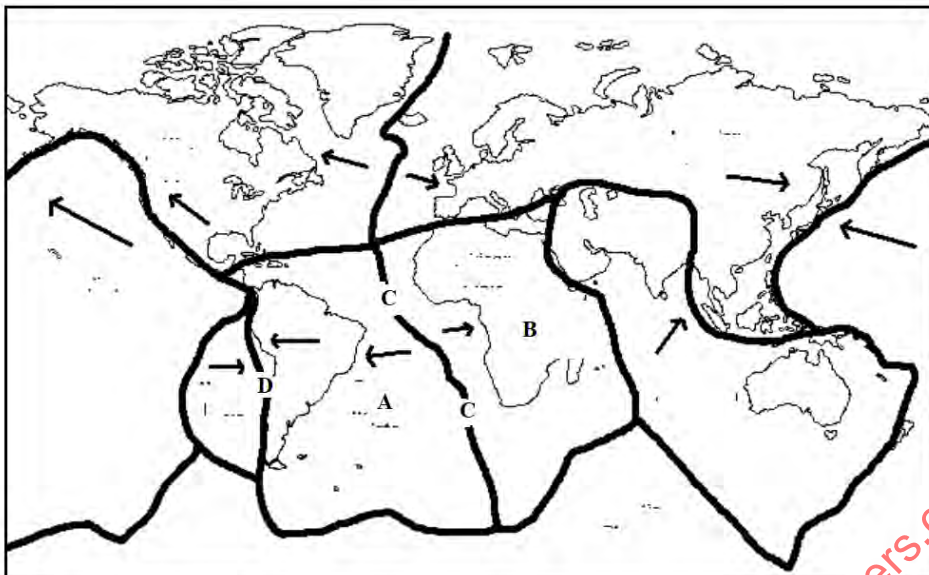
December 2021

MARKING SCHEME

No.	QUESTIONS & ANSWERS	COMMENTS
1.	<p>(a) Differentiate between rotation and revolution of the earth. ✓ <i>Rotation is the spinning of the earth around an axis while revolution of the earth is the movement of the earth around the sun</i></p> <p>(b) The diagram below shows an effect of the rotation of the earth. Use it to answer the questions that follow</p>  <p>(i) Identify the effect ✓ <i>Day and night</i></p> <p>(ii) Other than the effect shown in the diagram, give two other effects of the rotation of the earth. ✓ <i>Time difference of 1 hour between meridians that are 15° apart</i> ✓ <i>Deflection of winds and ocean currents</i> ✓ <i>Rise and fall of ocean tides</i></p>	<p><i>1×2mks=2mks</i></p> <p><i>1×1mk=1mk</i></p> <p><i>2×1mk=2mks</i></p>
	Total	5 mks

2.

The diagram below shows major plate boundaries of the world. Use it to answer the questions that follow.



(a) Identify the plates marked A and B.

- ✓ A – Pacific
- ✓ B – African

2×1mk=2mks

(b) Name the boundaries types labeled C and D.

- ✓ C – Constructive
- ✓ D – Destructive

2×1mk=2mks

Total

4 mks

3.

(a) Give three life cycles of a volcano.

- ✓ Active
- ✓ Dormant
- ✓ Extinct

2×1mk=2mks

(b) State three characteristics of a composite cone.

- ✓ It has a depression/crater/caldera at the top
- ✓ Has a subsidiary cone/conelets
- ✓ Has alternating layers of lava and pyroclastic materials
- ✓ It is steep sided
- ✓ It has a side vent
- ✓ It has a conical shape
- ✓ It consists of a vertical vent

2×1mk=2mks

Total

5 mks

4.	<p>(a) Give three conditions that favour the growth of coral polyps.</p> <ul style="list-style-type: none"> ✓ <i>Temperatures of 25⁰C to 29⁰C and should never fall below 20⁰C for proper growth.</i> ✓ <i>The polyps must be submerged in ocean.</i> ✓ <i>The water must be clear and salty.</i> ✓ <i>The waters must be shallow.</i> ✓ <i>The absence of moving wave and tidal load.</i> <p>(b) State two importance of emerged coasts.</p> <ul style="list-style-type: none"> ✓ <i>Provides land for settlement</i> ✓ <i>Exposition of features for tourists' attraction</i> 	<p><i>3×1mk=3mks</i></p> <p><i>2×1mk=2mks</i></p>
	Total	5 mks
5.	<p>(a) Define a local climate.</p> <p>(b) These are climates that are experienced in the immediate surroundings of some phenomena on the earth's surface.</p> <p>(c) State three characteristics of equatorial climate.</p> <ul style="list-style-type: none"> ✓ <i>Temperatures are high throughout the year/24⁰C – 27⁰C</i> ✓ <i>Small annual range of temperature/3⁰C – 5⁰C.</i> ✓ <i>Moderate diurnal range of temperature/8⁰C</i> ✓ <i>Thick cloud cover</i> ✓ <i>High rainfall throughout the year/ mean annual rainfall exceeds 1500 mm</i> ✓ <i>Rainfall is mainly convectional.</i> ✓ <i>Rainfall regime is double.</i> ✓ <i>High relative humidity throughout the year.</i> ✓ <i>Atmospheric pressure is relatively low even at sea level.</i> 	<p><i>1×2mks=2mks</i></p> <p><i>3×1mk=3mks</i></p>
6.	<p>Study the map of Kijabe (Sheet 134/3 and Scale 1: 50,000) provided and answer the questions that follow.</p> <p>(a) (i) Give two scales used in the map of Kijabe.</p> <ul style="list-style-type: none"> ✓ <i>Ratio/Representative Fraction Scale</i> ✓ <i>Linear Scale</i> <p>(ii) Name three physical features found in grid square 2699</p> <ul style="list-style-type: none"> ✓ <i>Kijabe Hill</i> ✓ <i>Steep slopes</i> ✓ <i>Scrub vegetation</i> <p>(b) (i) Measure the distance of the dry weather road in the north-western edge of the mapped area. Give your answer in kilometres.</p> <ul style="list-style-type: none"> ✓ <i>8.5 km ± 0.1 km</i> 	<p><i>2×1mk=2mks</i></p> <p><i>3×1mk=3mks</i></p> <p><i>1×2mks=2mks ✓✓</i></p>

	<p>(ii) Give the approximate position of Kijabe Station in terms of latitudes and longitudes ✓ $0^{\circ} 55'$ South, $36^{\circ} 35'$ East</p> <p>(c) (i) State two evidences that show the area covered by the map receives high rainfall ✓ Presence of coffee plantation ✓ Presence of many permanent rivers ✓ Presence of a forest on the eastern parts of the map</p> <p>(ii) Give two social functions of the mapped area. ✓ Education – presence of many schools ✓ Health care provision – dispensary in grid square 3790, Kijabe hospital in grid square 3295 ✓ Religion – a church grid square 3890</p> <p>(d) (i) Draw a frame measuring 14 cm by 10 cm to represent the area bound by Eastings 30 to 37 and Northings 90 to 95 (ii) On the frame, mark and label: <ul style="list-style-type: none"> Thicket vegetation All weather road bound surface (C68) <p>SEE GRAPH PAPER AT THE BACK PAGE</p> </p> <p>(e) Measure the bearing of the trigonometrical station SKP 209 (in grid square 3793) from the point ($1^{\circ} 00'$ South, $36^{\circ} 45'$ East) ✓ $308^{\circ} \pm 1^{\circ}$</p> <p>(f) Citing evidence from the map, explain three factors that influence coffee farming in the area covered by the Kijabe map. ✓ Highlands/areas of high relief evidenced by forests to the eastern parts of the map, ideal for coffee growing ✓ High rainfall evidenced by forests, many permanent river that ensure enough water supply during the growing ✓ Shelter of young coffee trees from direct sunlight evidenced by the forests ✓ Undulating/gently rolling topography evidenced by widely spaced contours to ensure the soils are well drained</p>	<p>$2 \times 1mk = 2mks$</p> <p>$2 \times 1mk = 2mks$</p> <p>$2 \times 1mk = 2mks$</p> <p>Frame – 1mk, Title – 1mk</p> <p>$2 \times 1mk = 2mks$</p> <p>$1 \times 2mks = 2mks$</p> <p>$3 \times 2mks = 6mks$</p>
	Total	25 mks
7.	<p>(a) (i) Name three areas in East Africa with glaciers ✓ Mt. Kenya ✓ Mt. Elgon ✓ Mt. Kilimanjaro</p>	$2 \times 1mk = 2mks$

(ii) Give two processes of glacial movements

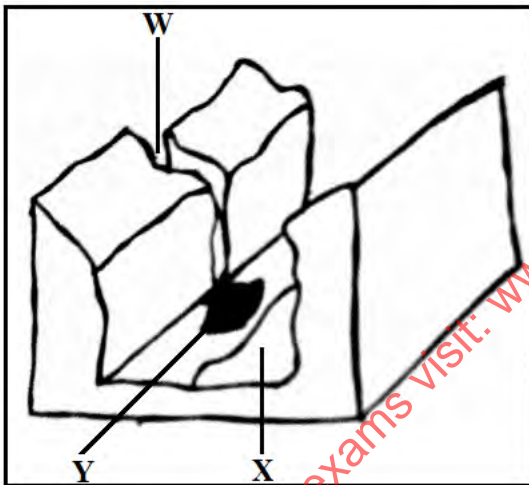
- ✓ Plastic flowage
- ✓ Basal slip
- ✓ Extrusion flow

2×1mk=2mks**(b) Explain how the following factors influence glacial erosion****(i) Presence of debris**

- ✓ The more the debris embedded in the glacier the more effective is abrasion process.

1×2mks=2mks**(ii) Nature of underlying rocks**

- ✓ Well jointed/faulted rocks are easily eroded by plucking since the joints allow water to enter the rock. Less resistant rocks are eroded faster by abrasion compared to more resistant rocks.

1×2mks=2mks**(c) The diagram below shows features resulting from glacial erosion in lowland areas. Use it to answer the questions that follow.****(i) Name the parts labeled W and Y.**

- ✓ W – Hanging Valley
- ✓ Y – Alluvial fan

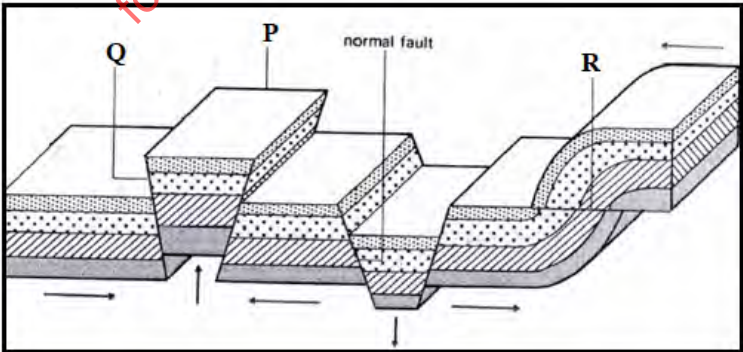
2×1mk=2mks**(ii) Describe how the feature marked X forms.**

- ✓ They start occurring when a pre-existing river valley is filled with ice/glacier
- ✓ As glacier moves downstream, tributary glaciers increase the amount of ice in the main valley
- ✓ Glacier erodes the main valley by plucking and abrasion
- ✓ The interlocking spurs in the main valley are trimmed into truncated spurs.
- ✓ Continued glacial erosion deepens, widens and straightens the main valley floor forming a U-shaped valley or a glacial trough

4×1mk=4mks

	<p>(d) Explain three ways in which glaciation influences agriculture.</p> <ul style="list-style-type: none"> ✓ <i>Areas under glaciation may experience permafrost condition that are less ideal for plant growth</i> ✓ <i>Some glacial features e.g. outwash plains, tills and old glacial beds may contain fertile soils that favour growth of crops and pasture for livestock</i> ✓ <i>Some outwash plains may contain infertile sandy soils that hinder agricultural practices</i> ✓ <i>Glaciation may lead to rugged landscape that discourages agricultural activities</i> <p>(e) Members of your class plan to conduct a field study on glaciated lowland area in Kenya.</p> <p>(i) State two reasons why they would likely use observation as a method of data collection.</p> <ul style="list-style-type: none"> ✓ <i>It gives first hand/real time information</i> ✓ <i>It saves time during the field study</i> ✓ <i>It is cheap/less expensive</i> ✓ <i>Data collected by observation is reliable</i> <p>(ii) Name three features of glacial deposition they are likely to observe during the study.</p> <ul style="list-style-type: none"> ✓ <i>Erratics</i> ✓ <i>Boulder trains</i> ✓ <i>Kames</i> ✓ <i>Eskers</i> ✓ <i>Drumlins</i> ✓ <i>Terminal moraines</i> ✓ <i>Outwash plains</i> 	<p>3×2mk=6mks</p> <p>2×1mk=2mks</p> <p>3×1mk=3mks</p>
	Total	25 mks
8.	<p>(a) (i) Other than lakes, seas and rivers, give two other sources of underground water.</p> <ul style="list-style-type: none"> ✓ <i>Magmatic/plutonic</i> ✓ <i>Water from snow melt</i> ✓ <i>Rain water</i> <p>(ii) Name two ways in which underground water may reach the surface of the earth.</p> <ul style="list-style-type: none"> ✓ <i>As springs</i> ✓ <i>Capillary action</i> ✓ <i>Wells drilled in to the water table</i> <p>(b) State four importance of underground water.</p>	<p>2×1mk=2mks</p> <p>2×1mk=2mks</p>

	<p>✓ <i>Springs are sources of many rivers that provides water for domestic, industrial and irrigations.</i></p> <p>✓ <i>Wells, boreholes, oases also provide water for domestic and industrial uses.</i></p> <p>✓ <i>A line of springs at the foot of an escarpment can attract settlements.</i></p> <p>✓ <i>Valuable minerals salts may be deposited at the mouth of hot springs and mined to earn revenue, create employment opportunities</i></p> <p>✓ <i>In areas under volcanic influence, underground water is heated to form geysers and hot springs that are sources of geothermal energy and tourists' attraction – earn foreign exchange</i></p> <p>(c) (i) Give <i>three</i> conditions necessary for development of karst scenery.</p> <p>✓ <i>Soluble rocks at the surface and below</i></p> <p>✓ <i>Rocks well jointed</i></p> <p>✓ <i>Resistant rocks</i></p> <p>✓ <i>Hot and humid climate</i></p> <p>✓ <i>Water table deep below the surface</i></p> <p>(ii) State <i>three</i> reasons for few settlements in karst landscape</p> <p>✓ <i>The areas are rocky/ have a rugged surface that discourages settlement and agriculture</i></p> <p>✓ <i>They have thin soils that are less ideal for growth of crops</i></p> <p>✓ <i>There is inadequate water supply/lack adequate water supply</i></p> <p>(d) (i) Draw a well labeled diagram of a limestone cave.</p> <div data-bbox="310 1178 849 1654"> </div> <p>(ii) On the diagram, mark and name the following features:</p> <ul style="list-style-type: none"> • Stalagmite • Limestone rock <p>(e) Describe the formation of the following features</p> <p>(i) Limestone Cavern</p>	<p>4×1mk=4mks</p> <p>3×1mk=3mks</p> <p>3×1mk=3mks</p> <p>2×1mk=2mks (well jointed rocks, cave – 1mk)</p> <p>2×1mk=2mks</p>
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	<ul style="list-style-type: none"> ✓ Carbonation and solution process along the joints of limestone rock leads to formation of a tunnel ✓ Continued solution enlarges the tunnel to form a cave. ✓ The process of cave formation may continue, widening and deepening the existing cave to form a cavern <p>(ii) Uvalas</p> <ul style="list-style-type: none"> ✓ River or rain water way disappear into the ground through joints in the rock ✓ The water widens and deepens the joints through solution leading to the development of a vertical hole/shaft called a sink or swallow hole ✓ The swallow hole is widened through continued solution until the rock blocks between the hollows are completely dissolved to form a doline ✓ Continued solution dissolve the rock blocks between dolines leading to their collapse or merger to form uvalas 	<p>3×1mk=3mks</p> <p>4×1mk=4mks</p>
	Total	25 mks
9.	<p>(a) (i) Define the term faulting</p> <ul style="list-style-type: none"> ✓ Breaking/cracking/fracturing of crustal rocks due to tectonic forces. <p>(ii) Name four main parts of a fault</p> <ul style="list-style-type: none"> ✓ Upthrow ✓ Downthrow ✓ Fault scarp ✓ Throw ✓ Heave ✓ Hade <p>(b) The figures below show some types of faults. Use them to answer the questions that follow.</p>  <p>(i) Name two examples in East Africa of the feature labeled P</p> <ul style="list-style-type: none"> ✓ Pare ✓ Usambara 	<p>2×1mk=2mks</p> <p>4×1mk=4mks</p>

- ✓ Ruwenzori
- ✓ Matthews Range
- ✓ Ndoto Hills
- ✓ Nyiru Hills

2×1mk=2mks

(ii) Identify the fault types marked Q and R.

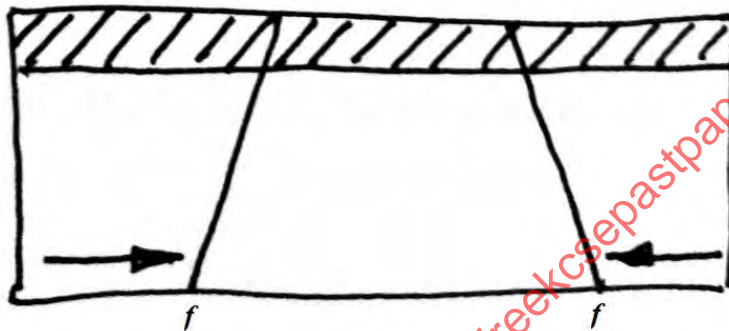
- ✓ Q – Thrust
- ✓ R – Reversed

2×1mk=2mks

(c) With the aid of clearly labeled diagrams, describe the formation of a Rift Valley through the compressional forces. (7 marks)

- ✓ When sections of crustal rocks are subjected to forces of compression, lines of weakness occur and leads to development of adjacent reversed faults

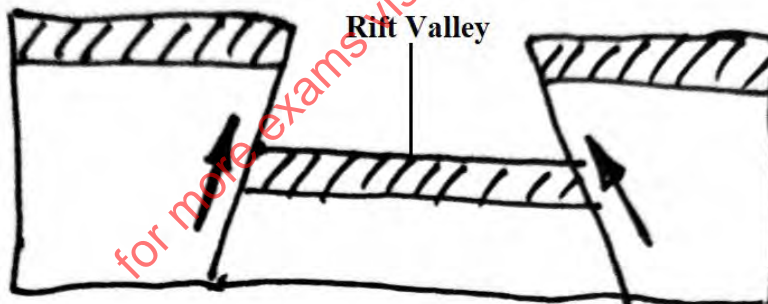
1×1mk=1mk



1×1mk=1mk

- ✓ Continued compression pushes the outer blocks towards each other and as a result, they thrust/rise over/above the central block to form the rift valley floor

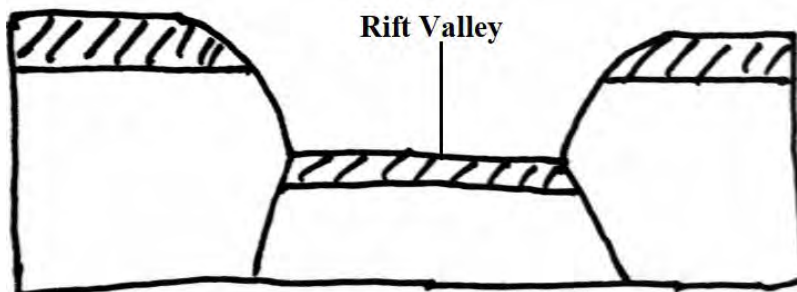
2×1mk=2mks



1×1mk=1mk

- ✓ The steep fault scarps on either side of the outer blocks are further worn out by denudation to form gentle slopes

1×1mk=1mk



1×1mk=1mk

	<p>(d) Members of your class plan to conduct a field study on the section of the Gregory Rift Valley.</p> <p>(i) Give <i>two</i> ways in which they would prepare for the study.</p> <ul style="list-style-type: none"> ✓ Seeking permission from school administration and local administration. ✓ Conducting a reconnaissance ✓ Preparing a working schedule ✓ Identification of data collection techniques/equipment <p>(ii) State <i>three</i> characteristics of the Great Rift Valley they are likely to observe during the study.</p> <ul style="list-style-type: none"> ✓ Heights of the fault scarps vary ✓ The major fault scarps here include Elgeyo, Mau, Laikipia, Nyandarua and Nguruman ✓ Step faulting is common within this. ✓ The width of the Rift Valley varies. ✓ The height of the valley floor also varies ✓ volcanic activity on the floor of this rift ✓ Unequal subsidence has created shallow basins, some occupied by lakes <p>(e) State <i>three</i> ways in which faulting may affect drainage.</p> <ul style="list-style-type: none"> ✓ Faulting along a river may make the river change/reverse its direction of flow ✓ It may lead to a back tilted drainage system ✓ It may make a river to completely disappear ✓ It may make the river to flow along the fault line/fault guided drainage pattern ✓ Faulting may lead to formation of depressions in which water may collect to form lakes ✓ Step faulting along a river course may lead to development of waterfalls 	<p>2×1mk=2mks</p> <p>3×1mk=3mks</p> <p>3×1mk=3mks</p>
	Total	25 mks
10.	<p>(a) (i) Differentiate between a lake and a river.</p> <ul style="list-style-type: none"> ✓ A lake is a water body that occupies a depression/hollow/basin on the earth's surface where as a river is a body of water flowing in a valley (along a natural channel) from an upland area towards the lowland <p>(ii) Name <i>two</i> sources of rivers in Kenya.</p> <ul style="list-style-type: none"> ✓ Forests e.g. Mau ✓ Mountains e.g. Mt. Kenya, Mt. Elgon ✓ Springs 	<p>1×2mks=2mks</p> <p>2×1mk=2mks</p>

<p>(b) State <i>three</i> reasons why some lakes may contain saline water</p> <ul style="list-style-type: none"> ✓ <i>Absence/lack of out-flowing rivers/outlets to drain out excess salts.</i> ✓ <i>Some lakes lack enough fresh water rivers that drain into them</i> ✓ <i>Some rivers empty into the lakes or are fed by underground water that may contain high concentration of salt</i> ✓ <i>Some lakes are located in arid areas with very high rate of evaporation which leads to increased concentration and accumulation of dissolved mineral salts in the lake</i> ✓ <i>The bed of the lake may comprise of soluble rock with mineral salts which dissolve in the lake water</i> ✓ <i>Surface run-off and rivers may dissolve a lot of salt from the rocks on which they flow.</i> <p>(c) (i) Describe the formation of an oasis.</p> <ul style="list-style-type: none"> ✓ <i>Physical weathering and abrasion in arid areas result in large scale production of unconsolidated materials of dust and sand particles.</i> ✓ <i>The loose materials are then scooped/removed by wind through deflation to form a shallow depression/basin</i> ✓ <i>Continued abrasion and deflation in the depression over time widens and deepens the depression to form a deflation hollow</i> ✓ <i>Wind eddies may remove unconsolidated materials from the deflation hollow through deflation.</i> ✓ <i>If the surface of the deflation hollow is lowered until it reaches the water bearing rocks/aquifer/water table, water oozes out of the ground and collects in the deflation hollow to form an oasis</i> <p>(ii) Name <i>three</i> examples of lakes formed due to faulting in Kenya.</p> <ul style="list-style-type: none"> ✓ <i>Turkana</i> ✓ <i>Bogoria</i> ✓ <i>Baringo</i> ✓ <i>Nakuru</i> ✓ <i>Naivasha</i> ✓ <i>Elementaita</i> ✓ <i>Magadi</i> <p>(d) Describe the following drainage systems</p> <p>(i) Superimposed</p> <ul style="list-style-type: none"> ✓ <i>If a river flows over the rocks it is down cutting, these rocks are removed through erosion.</i> ✓ <i>The river begins to flow over a new set of rocks of a different structure that are older.</i> ✓ <i>The river maintains its original direction of flow without being influenced by the newly exposed rock structure</i> 	<p>3×1mk=3mks</p> <p>5×1mk=5mks</p> <p>3×1mk=3mks</p> <p>3×1mk=3mks</p>
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	<p>(ii) Concordant</p> <ul style="list-style-type: none"> ✓ The river flows according to the rock structure and slope by following less resistant rocks. 	1×1mk=1mk
	<p>(e) Explain three economic significance of rivers.</p> <ul style="list-style-type: none"> ✓ Rivers provide water used for domestic, industrial and irrigation purposes. ✓ Some rivers especially in their older stage form natural waterways that can be used for transport. ✓ Drowned or submerged river mouths form rias/fjords that are deep and well sheltered thus facilitate the development of ports. ✓ Some rivers are rich fishing around hence source of food ✓ Gravel and sand harvested from river banks are used for building and construction purposes. ✓ Some river deposits contain alluvial soils with valuable mineral that can be mined for sale ✓ Features formed by rivers (waterfalls, gorges, meanders) are tourist attraction hence earning foreign revenue. ✓ Some rivers provide sites for development of hydroelectric power stations and projects. ✓ Rivers deposit fertile alluvial soils good for cultivation. 	3×2mks=6mks
	Total	25 mks

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