MARANDA HIGH SCHOOL

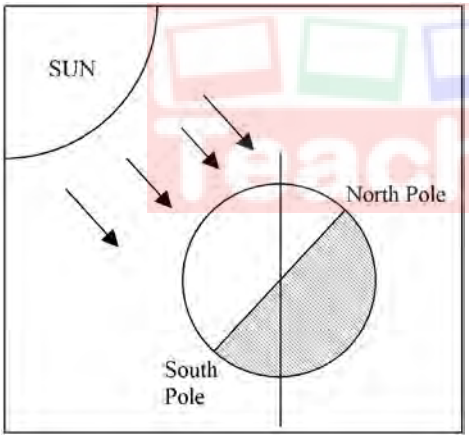
Kenya Certificate of Secondary Education

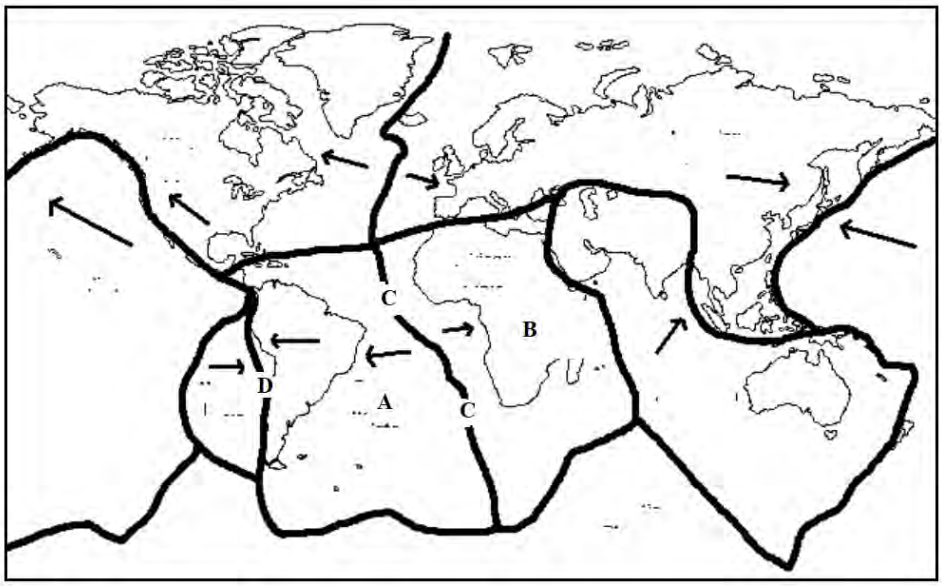
MOCK EXAMINATIONS 2021

312/1 GEOGRAPHY Paper 1

December 2021

MARKING SCHEME

No.	QUESTIONS & ANSWERS	COMMENTS
1.	**(a) Differentiate between rotation and revolution of the earth.** ✓ *Rotation is the spinning of the earth around an axis while revolution of the earth is the movement of the earth around the sun*	***1×2mks=2mks***
	(b) The diagram below shows an effect of the rotation of the earth. Use it to answer the questions that follow  	
	(i) Identify the effect ✓ *Day and night*	***1×1mk=1mk***
	(ii) Other than the effect shown in the diagram, give two other effects of the rotation of the earth. ✓ *Time difference of 1 hour between meridians that are 15^0 apart* ✓ *Deflection of winds and ocean currents* ✓ *Rise and fall of ocean tides*	***2×1mk=2mks***
	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* **(b) Name the boundaries types labeled C and D.** ✓ ***C*** *– Constructive* ✓ ***D*** *– Destructive*	***2×1mk=2mks*** ***2×1mk=2mks***
	Total	**4 mks**
3.	**(a) Give three life cycles of a volcano.** ✓ *Active* ✓ *Dormant* ✓ *Extinct* **(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*** ***2×1mk=2mks***
	Total	**5 mks**

4.	**(a) Give three conditions that favour the growth of coral polyps.** ✓ *Temperatures of 25^0C to 29^0C and should never fall below 20^0C for proper growth.* ✓ *The polyps must be submerged in ocean.* ✓ *The water must be clear and salty.* ✓ *The waters must be shallow.* ✓ *The absence of moving wave and tidal load.* **(b) State two importance of emerged coasts.** ✓ *Provides land for settlement* ✓ *Exposition of features for tourists' attraction*	***3×1mk=3mks*** ***2×1mk=2mks***
	Total	**5 mks**
5.	**(a) Define a local climate.** ***(b)*** *These are climates that are experienced in the immediate surroundings of some phenomena on the earth's surface.* **(c) State three characteristics of equatorial climate.** ✓ *Temperatures are high throughout the year/$24^0C - 27^0C$* ✓ *Small annual range of temperature/3°C – 5°C.* ✓ *Moderate diurnal range of temperature/8°C* ✓ *Thick cloud cover* ✓ *High rainfall throughout the year/ mean annual rainfall exceeds 1500 mm* ✓ *Rainfall is mainly convectional.* ✓ *Rainfall regime is double.* ✓ *High relative humidity throughout the year.* ✓ *Atmospheric pressure is relatively low even at sea level.*	***1×2mks=2mks*** ***3×1mk=3mks***
6.	**Study the map of Kijabe (Sheet 134/3 and Scale 1: 50,000) provided and answer the questions that follow.** **(a) (i) Give two scales used in the map of Kijabe.** ✓ *Ratio/Representative Fraction Scale* ✓ *Linear Scale* **(ii) Name three physical features found in grid square 2699** ✓ *Kijabe Hill* ✓ *Steep slopes* ✓ *Scrub vegetation* **(b) (i) Measure the distance of the dry weather road in the north-western edge of the mapped area. Give your answer in kilometres.** ✓ *8. 5 km ± 0.1 km*	***2×1mk=2mks*** ***3×1mk=3mks*** ***1×2mks=2mks*** ✓✓

	(ii) Give the approximate position of Kijabe Station in terms of latitudes and longitudes ✓ *0^0 55' South, 36^0 35' East*	***2×1mk=2mks***
	(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*	***2×1mk=2mks***
	(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*	***2×1mk=2mks***
	(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:** • **Thicket vegetation** • **All weather road bound surface (C68)** *SEE GRAPH PAPER AT THE BACK PAGE*	***Frame – 1mk, Title – 1mk*** ***2×1mk=2mks***
	(e) Measure the bearing of the trigonometrical station SKP 209 (in grid square 3793) from the point (1^0 00' South, 36^0 45' East) ✓ *308^0 ±1^0*	***1×2mks=2mks***
	(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*	***3×2mks=6mks***
	Total	**25 mks**
7.	**(a) (i) Name three areas in East Africa with glaciers** ✓ *Mt. Kenya* ✓ *Mt. Elgon* ✓ *Mt. Kilimanjaro*	***2×1mk=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.*

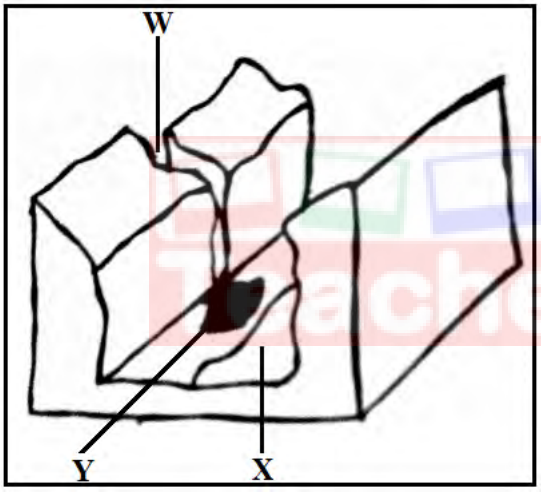
1×2mks=2mks

(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

	(d) Explain three ways in which glaciation influences agriculture. ✓ *Areas under glaciation may experience permafrost condition that are less ideal for plant growth* ✓ *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* ✓ *Some outwash plains may contain infertile sandy soils that hinder agricultural practices* ✓ *Glaciation may lead to rugged landscape that discourages agricultural activities*	***3×2mk=6mks***
	(e) Members of your class plan to conduct a field study on glaciated lowland area in Kenya. **(i) State two reasons why they would likely use observation as a method of data collection.** ✓ *It gives first hand/real time information* ✓ *It saves time during the field study* ✓ *It is cheap/less expensive* ✓ *Data collected by observation is reliable*	***2×1mk=2mks***
	(ii) Name three features of glacial deposition they are likely to observe during the study. ✓ *Erratics* ✓ *Boulder trains* ✓ *Kames* ✓ *Eskers* ✓ *Drumlins* ✓ *Terminal moraines* ✓ *Outwash plains*	***3×1mk=3mks***
	Total	**25 mks**
8.	**(a) (i) Other than lakes, seas and rivers, give *two* other sources of underground water.** ✓ *Magmatic/plutonic* ✓ *Water from snow melt* ✓ *Rain water*	***2×1mk=2mks***
	(ii) Name *two* ways in which underground water may reach the surface of the earth. ✓ *As springs* ✓ *Capillary action* ✓ *Wells drilled in to the water table*	***2×1mk=2mks***
	(b) State *four* importance of underground water.	

- ✓ *Springs are sources of many rivers that provides water for domestic, industrial and irrigations.*
- ✓ *Wells, boreholes, oases also provide water for domestic and industrial uses.*
- ✓ *A line of springs at the foot of an escarpment can attract settlements.*
- ✓ *Valuable minerals salts may be deposited at the mouth of hot springs and mined to earn revenue, create employment opportunities*
- ✓ *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*

4×1mk=4mks

(c) (i) Give *three* conditions necessary for development of karst scenery.

- ✓ *Soluble rocks at the surface and below*
- ✓ *Rocks well jointed*
- ✓ *Resistant rocks*
- ✓ *Hot and humid climate*
- ✓ *Water table deep below the surface*

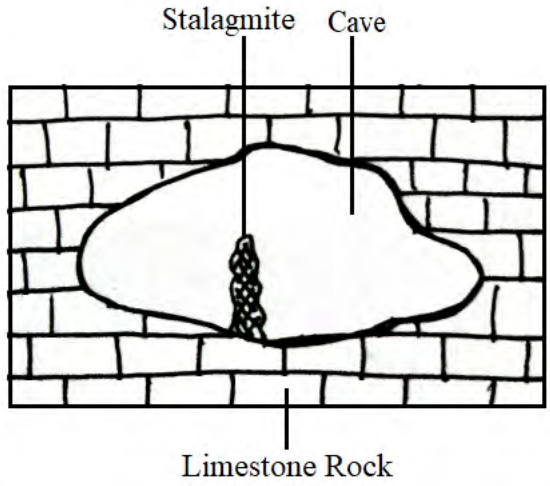
3×1mk=3mks

(ii) State *three* reasons for few settlements in karst landscape

- ✓ *The areas are rocky/ have a rugged surface that discourages settlement and agriculture*
- ✓ *They have thin soils that are less ideal for growth of crops*
- ✓ *There is inadequate water supply/lack adequate water supply*

3×1mk=3mks

(d) (i) Draw a well labeled diagram of a limestone cave.



2×1mk=2mks (well jointed rocks, cave – 1mk)

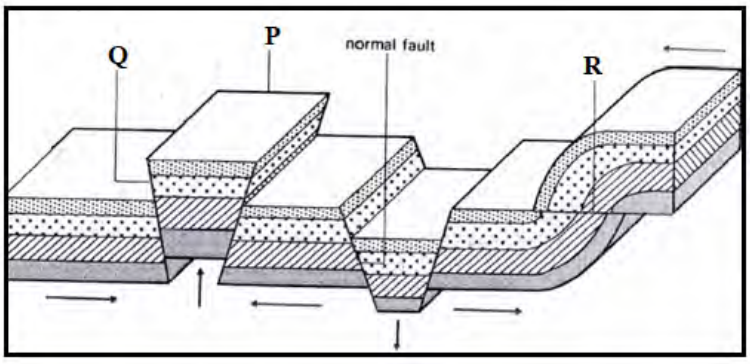
(ii) On the diagram, mark and name the following features:

- **Stalagmite**
- **Limestone rock**

2×1mk=2mks

(e) Describe the formation of the following features

(i) Limestone Cavern

	✓ *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*	***3×1mk=3mks***
	(ii) Uvalas ✓ *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*	***4×1mk=4mks***
	Total	**25 mks**
9.	**(a) (i) Define the term faulting** ✓ *Breaking/cracking/fracturing of crustal rocks due to tectonic forces.*	***2×1mk=2mks***
	(ii) Name *four* main parts of a fault ✓ *Upthrow* ✓ *Downthrow* ✓ *Fault scarp* ✓ *Throw* ✓ *Heave* ✓ *Hade*	***4×1mk=4mks***
	(b) The figures below show some types of faults. Use them to answer the questions that follow.  **(i) Name two examples in East Africa of the feature labeled P** ✓ *Pare* ✓ *Usambara*	

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

2×1mk=2mks

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

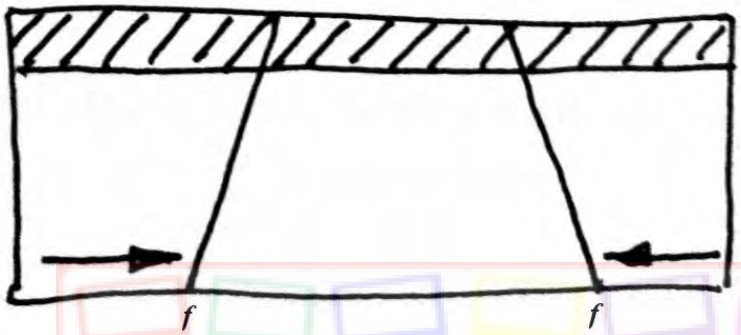
- ✓ ***Q** – Thrust*
- ✓ ***R** – Reversed*

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 of occur and leads to development of adjacent reversed faults*

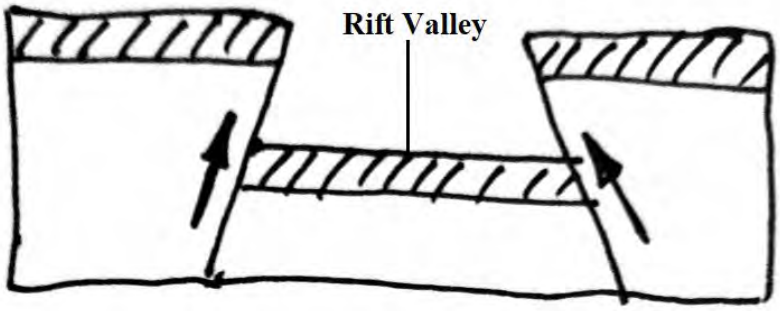
1×1mk=1mk



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*

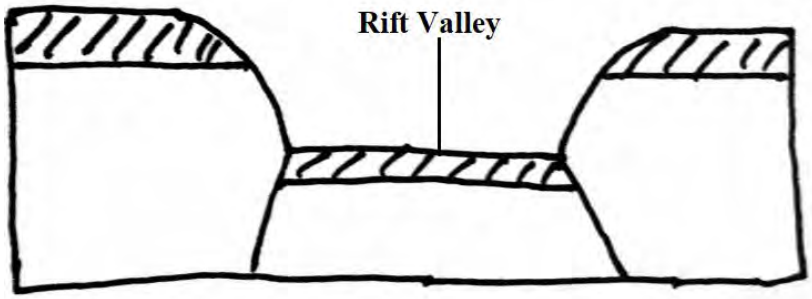
2×1mk=2mks



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

	(d) Members of your class plan to conduct a field study on the section of the Gregory Rift Valley. **(i) Give *two* ways in which they would prepare for the study.** ✓ *Seeking permission from school administration and local administration.* ✓ *Conducting a reconnaissance* ✓ *Preparing a working schedule* ✓ *Identification of data collection techniques/equipment*	***2×1mk=2mks***
	(ii) State *three* characteristics of the Great Rift Valley they are likely to observe during the study. ✓ *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*	***3×1mk=3mks***
	(e) State *three* ways in which faulting may affect drainage. ✓ *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*	***3×1mk=3mks***
	Total	**25 mks**
10.	**(a) (i) Differentiate between a lake and a river.** ✓ *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*	***1×2mks=2mks***
	(ii) Name *two* sources of rivers in Kenya. ✓ *Forests e.g. Mau* ✓ *Mountains e.g. Mt. Kenya, Mt. Elgon* ✓ *Springs*	***2×1mk=2mks***

(b) State *three* reasons why some lakes may contain saline water

- ✓ *Absence/lack of out-flowing rivers/outlets to drain out excess salts.*
- ✓ *Some lakes lack enough fresh water rivers that drain into them*
- ✓ *Some rivers empty into the lakes or are fed by underground water that may contain high concentration of salt*
- ✓ *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*
- ✓ *The bed of the lake may comprise of soluble rock with mineral salts which dissolve in the lake water*
- ✓ *Surface run-off and rivers may dissolve a lot of salt from the rocks on which they flow.*

3×1mk=3mks

(c) (i) Describe the formation of an oasis.

- ✓ *Physical weathering and abrasion in arid areas result in large scale production of unconsolidated materials of dust and sand particles.*
- ✓ *The loose materials are then scooped/removed by wind through deflation to form a shallow depression/basin*
- ✓ *Continued abrasion and deflation in the depression over time widens and deepens the depression to form a deflation hollow*
- ✓ *Wind eddies may remove unconsolidated materials from the deflation hollow through deflation.*
- ✓ *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*

5×1mk=5mks

(ii) Name *three* examples of lakes formed due to faulting in Kenya.

- ✓ *Turkana*
- ✓ *Bogoria*
- ✓ *Baringo*
- ✓ *Nakuru*
- ✓ *Naivasha*
- ✓ *Elementaita*
- ✓ *Magadi*

3×1mk=3mks

(d) Describe the following drainage systems

(i) Superimposed

- ✓ *If a river flows over the rocks it is down cutting, these rocks are removed through erosion.*
- ✓ *The river begins to flow over a new set of rocks of a different structure that are older.*
- ✓ *The river maintains its original direction of flow without being influenced by the newly exposed rock structure*

3×1mk=3mks

	(ii) Concordant ✓ *The river flows according to the rock structure and slope by following less resistant rocks.* **(e) Explain *three* economic significance of rivers.** ✓ *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/fiords 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.*	***1×1mk=1mk*** ***3×2mks=6mks***
	Total	**25 mks**