

MAGS
GEOGRAPHY Paper 1
Marking Scheme
Term 1- 2020

SECTION A

1 a) **State the major areas covered under physical geography.**

- The earth and the solar system.
- The external and internal structure of the earth.
- Internal land forming processes.
- Vegetation.
- Drainage.
- Soils and rocks.
- Weather and climate. (Any 2×1= 2 marks)

b) Reasons why the interior of the earth is very hot.

- Retaining of original heat during the formation of the earth..
- Radioactivity which produces energy in form of heat.
- Weight of the crustal rocks increases pressure leading to increased temperature (2×1= 2 marks)

2 a) **What is a line of longitude?**

- Is a line based on angular distance of a place east or west of prime meridian (0° longitude).

Or

- An imaginary line drawn on a map from North pole to South pole and is measured in degrees east or west of the prime meridian. (0 degree) (1×2= 2 marks)

b) What is the local time of Alexandria 30° E when the local time at Malindi 40° E is 12.00 noon?

Degree difference $40^{\circ}-30^{\circ}=10^{\circ}$

If $1^{\circ} = 4 \text{ min}$

$10^{\circ} = 4 \times 10^{\circ} = 40 \text{ min}$

Time at Alexandria 12.00 noon –40 min
= 11.20 am

(2 marks)

3 **a) State three causes of earth movement.**

- Isostatic adjustment.
- Gravitative pressure.
- Magma movement within the crust.
- Convectional currents in mantle. (3×1= 3 marks)

b) Name two main earth quake zones in the world.

- The circum pacific belt.
- The mid-atlantic ridge.
- The Mediterranean-Himalayan belt.
- Rift valley. (2×1= 2 marks)

4 a) **Name three features found on emerged highland coast.**

Raised cliffs, raised wave cut platform, raised beaches, raised caves, arches, stacks, stump, blow holes, geos.

(3 marks)

b) State three conditions necessary for the formation of a spit.

- The waves must carry large amounts of load/ the supply of sand being transported.
- The long shore drift must be weak.
- It must be a shallow shore/ continental shelf.

- Waves must have a strong wash and weak backwash/ constructive waves.(3 marks)

5 a) **Highlight any three factors that necessitate the occurrence of an artesian basin.**

- The aquifer must lie between two impermeable rocks.
- The aquifer must outcrop in a region which is a source of water.
- The aquifer must dip from a region of water intake and the rock layer must form a broad syncline or basin.
- The mouth of the well must be lower than the intake area.

b) Apart from lakes, rivers and seas, name any other two sources of underground water.

- Rain water.
- Melt water.
- Magmatic water.

(3 marks)

SECTION B

6 a) i) - Kenya
- Uganda

ii) 130°

iii) **1cm rep 50000cm**

$$\begin{aligned} 1\text{km} &= 100000\text{cm} \\ ? &= 50000 \end{aligned}$$



$$\frac{50000 \times 1\text{KM}}{100000\text{CM}}$$

1cm rep 0.5km
2cm rep 1km

.(b) (i) 0°00' to 0°15's

(ii) 2°28'

(iii)- settlements

- All weather road loose surface
- Footpath

c) -Presence of lake Victoria

- Presence of seasonal swamp
- Presence of seasonal river e.g Opondo
- Main river is R Yana
- R. Yana flows from North East to the Northern part of the map.
- Rivers draining into L. Victoria formed centripetal drainage of a waterhole-2882
- Water reservoirs e.g3391

d) Presence of Yala swamps.infested by tsetse fly which cause nagana to animals, thus discouraging dairy cattle keeping.

- Area covered by the map is lowland as shown by space contours , thus discourages diary cattle rearing.
- High temperatures in the area,

7(a)(i) **Distinguish between earth rotation and earth revolution**

(2 marks)

Earth rotation is the movement of the earth on its own axis once every 24 hours while earth revolution is the movement of the earth round the sun on its orbit

(ii) **Three effects of earth's revolution**

(3 marks)

It causes:

- Changes in the position of the midday sun at different times of the year
- Varying lengths of day and night at different times of year.
- The four seasons
- Lunar eclipses

(b) (i) **four characteristics of mesosphere in the structure of the atmosphere**

(4 marks)

- It extends from 50-80 km
- Temperatures decrease with increase in height/has positive lapse rate
- There is no water vapour, cloud or dust
- Experience high speed of wind of 3000km/h
- It experiences lowest temperature of -90°C

(ii) **Describe the origin of continents according to continental drift theory**

(4 marks)

- There was a super continent called Pangea (all lands) 350 million years ago
- Pangea was surrounded by a large ocean called Panthalasa
- Different gravitational forces caused Pangea to break up into two (Gondwanaland to the south and Laurasia to the north.
- They were separated by a long narrow sea; Tethys
- Gondwanaland and Laurasia further ruptured and drifted to form present six continents
- Gondwanaland formed S. America, Africa, Australia and Antarctica and Laurasia formed North America, Europe, Asia, and Arctic

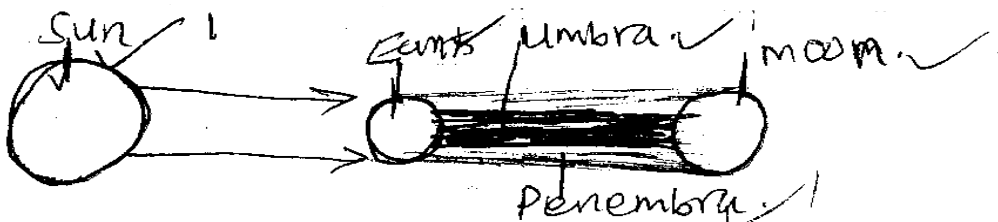
(c) (i) **Three proofs that the earth is spherical**

(6 marks)

- It is possible to fly or sail in one direction e.g. east and come back to the point of origin
- When a ship is approaching the port, an observer on a lift will first see the smoke and gradually the other part of the ship will appear/ if there are two ships the nearest will be seen first and the one behind will be seen later.
- The earth rotates from west to east and thereafter the sun appears earlier in East than in the west
- During the eclipse of the moon the shadow of the earth appears spherical and only spherical Bodies which have round shadows.
- The earth appears circular when observed from a very high tower or aeroplane
- All other planets appear round when observed through telescope from the earth, Earth is planet and therefore it must be round.

d) Using a well labeled diagram, describe the occurrence of lunar eclipse

(6marks)



Occurs when the earth lies between the sun and the moon during revolution.

- Earth blocks sun's rays from reaching the moon's surface.
- The moon is completely covered by the earth's shadow forming umbra and penumbra

8. a) i)

- 1 - Mediterranean climate
- 2 - Tropical climate.
- 3 - Equatorial climate. (3 marks)

ii) Characteristics of climate marked 5

- Mean monthly temperature is 28°C and 10°C during hot and cold seasons respectively.
- Annual temperature range is wide 26°C
- Diurnal range of temperature is high.
- Rainfall is very low less than 250mm p.a
- Rainfall is occasionally accompanied by heavy storms. (5×1= 5 marks)

iii) Factors influencing climatic region labeled 1

- Nearness to the sea.
- Altitude.
- Ocean currents (3 marks)

b) i) Three water towers in Kenya.

- Mt Kenya.
- Mau ranges.
- Aberdare ranges.
- Cheranganyi.
- Mt Elgon. (3 marks)

ii) Five measures taken in Kenya to conserve forests.

- Legislation aimed at controlling careless cutting of trees.
- Afforestation & Reforestation
- Creation of forest reserves.
- Development of other sources of energy.
- Agro - forestry.
- Encourage recycle of forest products. (5 marks)

c) Adaptation of vegetation in Sahara and Namib.

- Some plants have long tap roots for withdrawing water deep underground.
- Some plants have small leaves to reduce water lose through transpiration.
- Some plants have thick barks to store water.
- Some plants have shallow roots system to take moisture from soil layer.
- Some plants have waxy and water proof barks to reduce water lose through cuticles and lenticels.
- Some plants shed off their leaves during dry season to prevent excess water lose.
- Some plants remain dormant during dry season but active during wet season.

(Any 6X1= 6 marks)

9 **a) Differentiate between mass wasting and weathering?(2mrks)**

Mass wasting is the movement of rock materials down the slope under the influence of gravity while weathering is the breaking ,disintegration and decay of solid rock at or near the surface in situ (without movement) by physical and chemical processes.

b) i) Apart from soil creep , name two other processes of slow mass movement?(2mrks)

- Talus creep
- Solifluction
- Rock creep

ii) Explain three causes of soil creep. (6mrks)

- Temperature causes soil particles to expand and contract hence change in position down slope.
- Moisture causes the soil to become wet and compact .On drying the particles move and shift I position down slope.

- External forces e. g earthquakes, explosives in mining or heavy vehicles trigger the movement of particles down the slope.
 - Freezing and thawing water on the soil makes the particles shift down slope .It lubricates the soil particles hence downward movement.
 - Ploughing on the soil and turning the soil causes the soil to move down slope.
 - Removal of soil down the hill makes the rest of the soil to shift down slope.
- iii) **Explain three physical properties that influence landslides?** (3 marks)
- Under –cutting on the base of steep slopes by a river or sea
 - Occurrence of Earthquakes
 - Prolonged heavy rainfall
 - Frost action
- c) **Describe the following processes of mass wasting:**

i) Rock fall

Occurs when rocks are well jointed and with steep slopes .Rock parts are detached from steep slopes and fall rapidly at the slope base.

It may also occur due to frequent freeze-thaw action on steep slopes, particles which get detached fall at the base of the slope due to gravitational pull.

ii) Subsidence

Subterranean weathering leads to formation of caves/caverns where the roof is too heavy to remain suspended, it collapses vertically.

iii) Mud flows

Wet loose soil materials move easily downhill .As the semi-liquid mud collects more materials it becomes heavier until it comes to rest at the foot of the slope.

d) Explain the effects of weathering in the following:

i) **Tourism** - Features created through weathering are tourist attractions.

ii) **Agriculture**-weathering facilitates soil erosion leading to soil degeneration/.May lead to formation of fertile soils where such soil is deposited .This may be used for agriculture.

iii) **Pottery**-Weathering produces other natural resources such as clay which is used for making bricks.It is also used for pottery.

10 a) i) Define the term glaciation. (2 marks)

Glaciation refers to the action of moving ice/process by which glaciers change the landscape on large scale.

ii) Name three types of glaciers. (3 marks)

- Valley glaciers
 - Piedmont glaciers
 - Cirque glaciers. corrie glaciers
 - Continental glaciers
 - Niche glaciers
 - Expanded foot glaciers
 - Hanging glaciers

b) Describe how the following features found in upland glaciated landscape are formed:

i) U-shaped valley

-A pre-existing glacier is filled with ice /glacier.

- The glacier erodes the v-shaped valley by abrasion and plucking process vertically
- The valley is deepened and widened by vertical erosion and lateral erosion.
- The end spurs are truncated/trimmed/cut.
- The ice melts away leaving a u-shaped valley

i) Pyramidal peak

- Initially the ice collects in several hollows on the mountain side.
- The ice exerts pressure on the hollows/cracks.
- The plucking action of the ice enlarges the hollows so that more ice collects in them.
- Freeze and thaw action of the ice leads to the expansion of cracks/ hollows making them large basins which are called cirques.
- Nivation into back walls of the hollows make them recede into the mountain side/ the cirque recedes outwards.
- Steep sided knife edged ridges called arêtes are formed and they separate the cirques.
 - Eventually three or more of these ridges/ arêtes converge at the top of the mountain forming jagged peak /horn (surrounded by corries/ cirques). this is called pyramidal peak

c) Explain three significance of upland glaciated features to human activities.

- The warm glaciated valleys are suitable for farming / glaciated uplands provide suitable grazing lands as they form fine benches on which summer pastures grows e. g Switzerland.
- Glaciated farmlands form magnificent features that encourage recreation /sporting activities.
- Glaciated mountain discourage human settlement hence growth of forests (lumbering).
- Waterfalls formed by the rivers in glaciated highlands provide suitable sites for hydroelectric production.
- Corries lakes /tarn lakes are suitable areas for sport fishing.
- The U - shaped valleys / glacier trough form natural route ways.
- Fjords coastline form deep and well sheltered natural harbours as well as good fishing ground.

d) Suppose you were to carry out a field study of a glaciated lowland,

i) State two advantages of using oral interview to collect information during field study.

- Give first hand information.
- Interviewers can seek clarification on any ambiguities.
- Interviewer create a good rapport with an interviewee.
- Interviewers can get more information by initiating further discussion.
- The method is useful in collecting information from people who can not read and write.

(2 marks)

ii) Name two features found in glaciated lowlands that you are likely to study.

- Depression / glacial lakes
- Roche moutonnée.
- Craq and tail.
- Drumlin.
- Erratic.
- Boulder train.
- Till plain.
- Outwash plain

(2 marks)