
KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

MARANDA HIGH SCHOOL
GEOGRAPHY
Paper 1
MARKING SCHEME

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**MARANDA SCHOOL KCSE TRIAL AND
PRACTICE EXAM 2016**

**Paper 1
Marking Scheme**

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- 1(a) It is the time of the year when the sun is overhead the tropic of Cancer ($23\frac{1}{2}^{\circ}\text{N}$) or tropic of Capricorn ($23\frac{1}{2}^{\circ}\text{S}$).
- 21st June.
 - Since the other planets are spherical, the earth being one of the planets is also spherical.
- Circumnavigation – when traveling around the earth in one direction, the traveller will come back to the starting point from the opposite direction.
- Satellite photographs taken from space show that the earth is spherical.
- Sunrise and sunsets – places to east receive sunlight earlier than places to west;- if the earth was flat, all places will receive sunlight at the same time. Hence proof that the earth is spherical.
- During lunar eclipse, the shadow of the earth cast on the moon surface is spherical.
- The earth's horizon appears curved when observed from a high point.
- The approaching ship – when an observer is on the shore, the approaching ship, will first see smoke, then mast and finally the whole ship appears gradually as if emerging from the sea suggesting that the earth is curved.
- (3 x 1 = 3mks)
- 2 (a) - Temperature
- Altitude
 - Rotation of earth.
 - Wind systems / Global wind systems (any 2 x 1 = 2mks)
- (b) - It is a zone of low pressure doldrums.
- It is migratory zone in relation to the apparent overhead sun.
 - It is a zone where the North East and South East trade winds converge (NE and SE winds converge).
 - It is associated with convectional rain and thunderstorms.
 - It is characterized by high temperature. any 5x1 = 5mks)
- 3 (a) P - Stalactite. ✓1
Q – Limestone Pillar ✓1
R – Stalagmite. ✓1
- (b) - Aquifer must be exposed to an area of sufficient rainfall.
- Aquifer must lie between two impermeable rocks to retain water.
 - Basin must dip towards the region where land surface is lower than it is at the exposed end of pervious formation.
4. Partial / total blockage of exit sufficient for water that collects to be placed under pressure.
- 5 (a) – Most are dark in colour.
- The rocks cool slowly forming large crystals.
 - Due to large crystal, rocks have a coarse texture.
- (b) - Relative dating. ✓1
- Absolute dating. ✓1
 - Radioactive carbon dating. ✓1 (3 x 1 = 3mks)
- 6 (a) - Collision between tectonic plates.
- Faulting / Cracking of rocks.
 - Movement of magma within the crust / violent and volcanic eruption.

- Adjustment of rocks as a result of stress e.g. caused by folding.
- Isostatic adjustment.
- Excessive energy releases within the mantle which is explosive.
- Gravitative pressure.
- Explosions caused by man e.g. quarrying, nuclear tests.

(b) - Collapsing / cracking

- Loss of life (human / animal and plant).
- Disruption of transport and communication lines.
- Outbreak of fires.
- Avalanches and landslides may cover the built up area.
- Tsunamis may wash down coastal settlements.

(any 2x1 = 2mks)

7 (a)

(i)

(ii) - Contours. ✓1

- Names e.g. Mt. Kenya. ✓1

(2 x 1 = 2mks)

(iii) No of full squares 18 => 18

$$\frac{1}{2} \text{ squares} = \frac{32}{2} \Rightarrow \underline{16}$$

$$\Rightarrow 32\text{km}^2$$

(2mks)

(b)

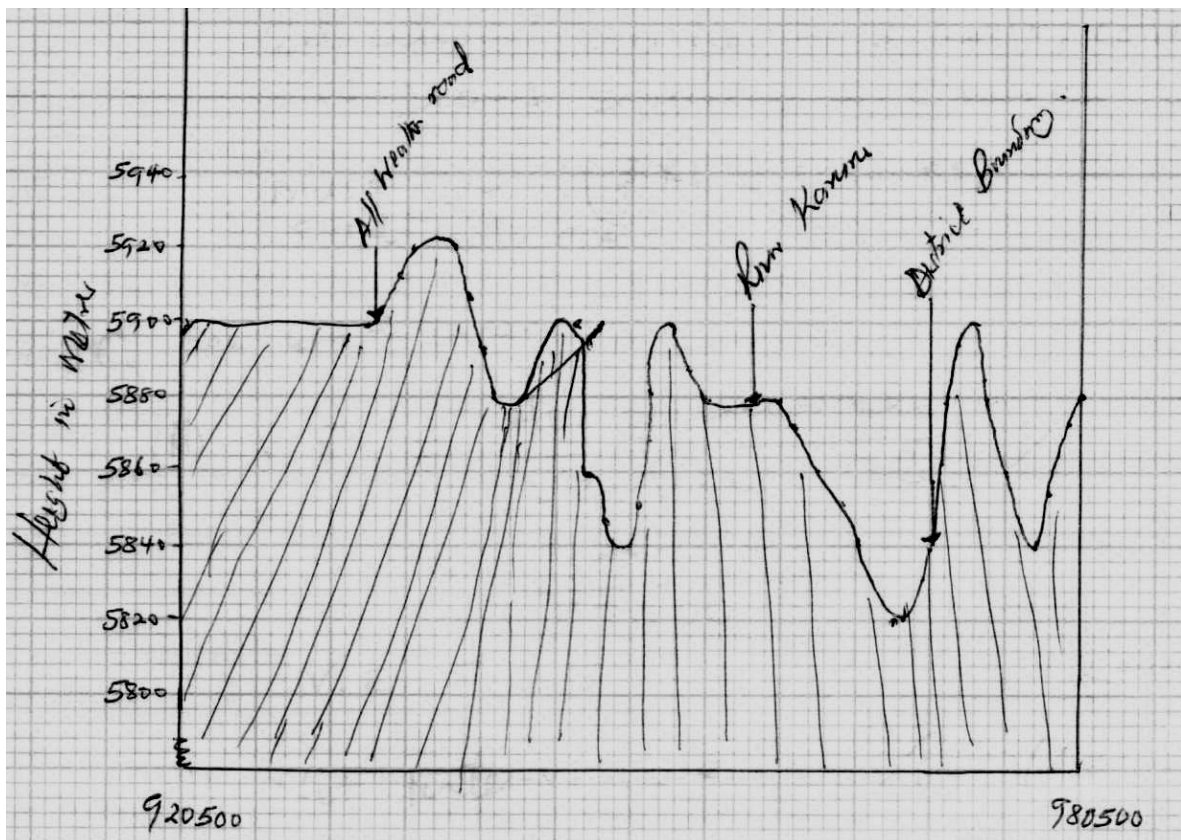
- Medical services – Hospital. ✓1

- Educational services – schools, colleges. ✓1

- Religious services – church. ✓1 (must give evidence to score) 3x1 = 3mks)

(c)

(i) A CROSS-SECTION ALONG NORTHING 50 FROM EASTING 92 TO 98



(ii) V.E = Horizontal scale

Vertical scale ✓1

= 1:50,000

1:2000

V.E = 25 ✓1

(2mks)

(iii) Not intervisible. ✓1

(1mk)

(d) - Drainage features consists of many permanent rivers (Sagana, Ragati, Rui-Ruiru).

- There are numerous dams and water reservoirs in the area covered by the map.
- Most rivers generally flow from north east to south west direction.
- Most rivers and their tributaries form dendritic drainage system as seen in Mt. Kenya forests.
- The main river is sagana which form meanders in upper section near Gatunganga.
- Some rivers and their tributaries like Rundu form parallel drainage system.
- There is a papyrus swamp near Gitaku GDSQ 4501.
- There are numerous water holes.

(e) The highest point on the area covered by the map is 9060m GDSQ 6504. ✓1

The lowest point is 5100 GDSQ 4501. ✓1

(2mks)

8 (a) (i) Tilt block

Escarpment slope

Block Mountain / horsts

(any 3x1 = 3mks)

(ii) Residential

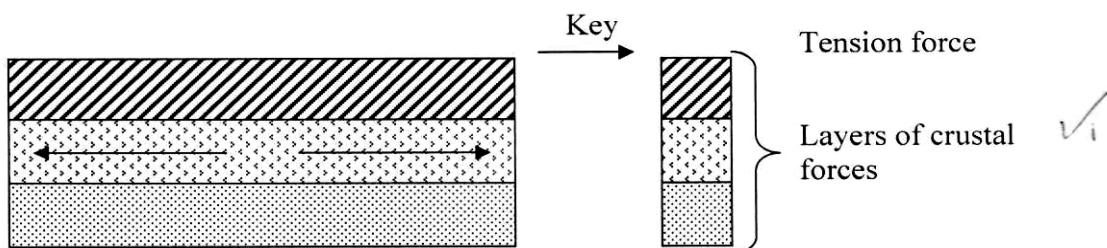
Communication

Trading

Health services

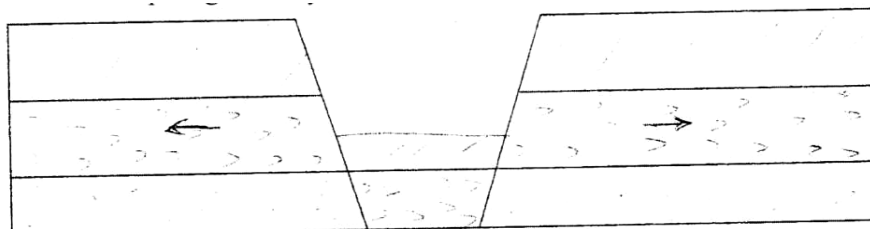
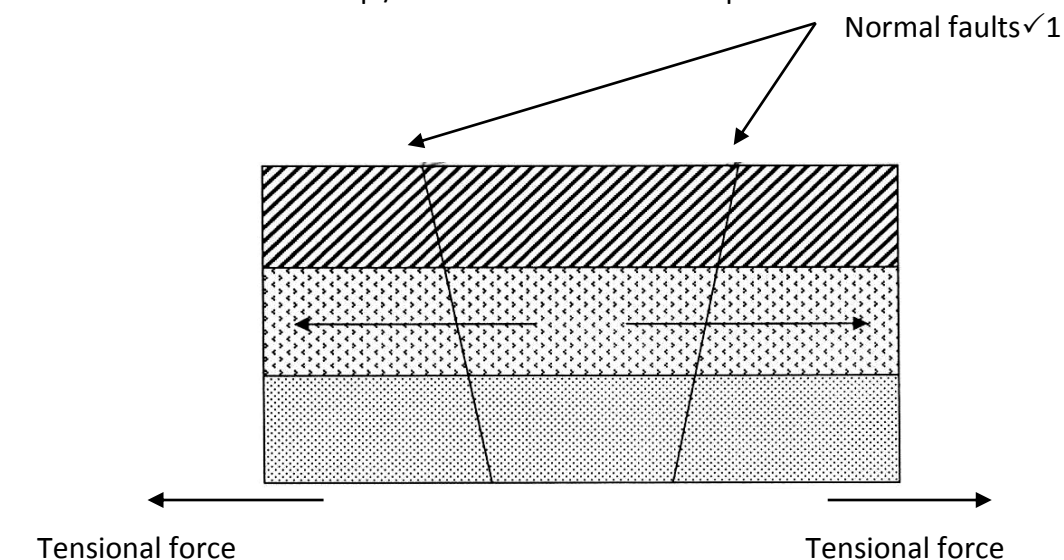
Transport

(any 2x1 = 2mks)

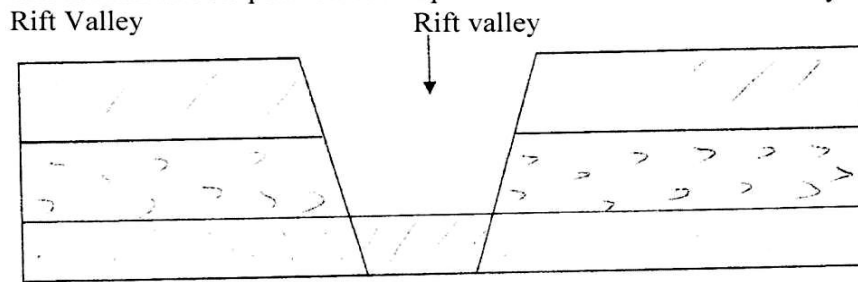


- Layers of rocks are subjected to tensional forces when there is some instability within the earth's crust. ✓1

- Parallel normal faults develop / lines of weakness develop.



The sunken middle part forms a depression known as the Rift Valley.



- (b) - Faulting / fault scraps make it difficult to construct roads / railways.
- Depression in the Rift Valley contain water that forms lakes.
 - Faulting exposes minerals such as diatomite.
 - Step faulting makes rivers to have water falls, rapids and cataracts.
 - The scrap slopes / steep slopes tend to discourage settlement.
 - Some rivers such as the Katonga in Uganda have had their directions of flow changed. (any 4x2 = 8mks)

- (c) - To enable them draw up study objectives / hypothesis.
- To familiarize themselves with the area of study.
 - To enable them draw a route map.
 - To enable them prepare a work schedule / plan of activities.
 - To enable them identify / sort out relevant tools / equipment for the study.
 - To identify suitable methods of data collection.
 - To seek permission from the occupants of their site of study.
 - To enable them prepare financial.

(any 4 x 1 = 4mks)

- (d) - It is expensive.
- It is time consuming.
 - It is tiresome.
 - It is limited only to direct sources / primary sources.
 - It is only suitable to the sighted people.

(any 3x1 =

3mks)

- 9(a) (i) **Weathering** – is the breaking down and decomposition of solid rocks on the earth through physical and chemical processes without movement.

Mass wasting – down slope movement of the weathered material by the aid of gravity. (2 x 1 = 2mks)

- (ii) - Water

- Heat / temperature.
- Chemicals / dissolved substances.

(any 3x1 =

3mks)

- (iii) - Plants roots e.g. trees grow into joints and cracks, they widen the joints and cracks as they grow causing rock blocks to disintegrate.

- Plants like algae, mosses and lichen retain water on rocks resulting to chemical weathering processes.
- Decaying plant material produce organic acids that react with some of the rock minerals causing it to decay.

- (b) (i) - Talus creep / scree creep

- Solifluction.

(2 x 1 = 2mks)

- (ii) - Heating and cooling of soil.

- Freezing of soil.
- Ploughing down hill.
- Shaking by earth quakes / heavy tracks.

- Alternate drying and wetting of the soil.
 - Trampling and burrowing of the ground.
- (c) - Leads to loss of fertile soil.
- Leads to loss of life and property.
 - It may block the river or stream.
 - Leads to displacement of people.
 - It may lead to destruction of infrastructure and buildings.
 - It may lead to formation of lakes.
- 10(a) - Glaciations are various processes by which moving ice (glacier) erode, transport and deposit material to form features.
- Very low temperature, below 0°C which allows formation of ice and snow.
 - Abundant and constant supply of snow fall.
 - Snow fall exceeds snow melt.
 - Plastic flowage
 - Internal shearing
 - Extrusion flow.
1. Basal slip.
- (ii)
2. **Nivation** is caused by continuous freeze and thaw action, water seeps into the cracks of rocks. When temperature falls it freezes and expand enlarging the cracks, when temperature rise, ice melts only to freeze when temperature fall again. This repeated freezing and thawing, expanding and contraction leads to pressure on the cracks hence leading disintegration of rocks.
 3. **Plucking / quarrying / sapling / gouging – when ice in a glacier.**
Ice in a glacier freezes into a block of rock on the floor or sides of the valley as the ice moves it pulls part of the rock or tears it away.
 4. **Abrasion / Corrosion** – the rocks frozen into the mass of ice scrap, scratch and grind the rocks of the bed and sides of the valley thus wearing away the land surface.
- (b)
- **Roche Moutonnée**
As ice moves, it meets a resistant rock outcrop, through abrasion the upstream is smoothed while downstream is eroded by plucking leading to steep and rugged leeward side, this produces a resistant rock with a smooth upstream and rugged leeward known as Roche mount one.
 - **Rock basin**
Ice abrasion and plucking on a main valley leads to formation of a glacial trough. Through abrasion the less resistant rocks on the base of the glacial trough are deepened. This leads to formation of hollow known as rock basin.
- (c) - Glacial deposition in lowlands leads to formation of marshy and bog landscape which interferes with the drainage of the region.
- Till and outwash plain contain infertile soils.
 - Fiords are inaccessible from the main land.
- 10 (a) Soil catena is the sequence of different soil types down a slope from the top to the bottom. (2mks)
- (i) **Laterisation**
In humid areas silica and salts are removed from the top soil by percolating water and deposited in the horizon B. The oxide of iron and aluminium are retained in horizon A to form a reddish hard crust called laterite. (3mks)
- (ii) **Podzolisation**

In cool temperate climate (subarctic) oxides of iron and aluminium are leached by humic acid from horizon A and redeposited in horizon B while silica is retained in horizon A to form soils which are grey or white or ash-like in colour. (3mks)

- (b) (i) - Increase soil fertility.
- Promote development of structure favourable to water and air circulation.
- Reduce acidity and alkalinity.
- Encourage active existence of micro-organisms. (3x1 = 3mks)
- (ii) - Crumb soil structure.
- Granular soil structure
- Plate soil structure.
- Prismatic soil structure.
- Single-grained soils. (3x1 = 3mks)

(c)

• **Change in soil pH.**

- Application of fertilizers may increase due to ammonia based fertilizer.
- Increased acidity interferes with activities of some micro-organisms e.g. bacteria. (2x1 = 2mks)

• **Irrigation in arid and semi-arid regions**

- Results in accumulation of salt on the soil surface changing the soil pH.
- Make the soil saline. (2x1 = 2mks)

• **Destruction of soil structure.**

- Using heavy machinery destroys the soil pores which lead soil prone to flooding.
- Affect soil water holding capacity.
- Affect soil air circulation.

(d) (i)

- Conduct interview on resource person.
- Photographing.
- Collecting soil samples.

(ii)

- Making notes.
- Drawing sketches of map.
- Filling in the questionnaire.
- Taking photographs.

(iii)

- Compare / share notes.
- Present the data.
- Holding group discussions.