KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

KENYA HIGH SCHOOL

GEOGRAPHY

Paper 1

MARKING SCHEME

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KENYA HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

Paper 1

Marking Scheme

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1. (a) A line of longitude is an imaginary line which is drawn on a map from North Pole or South Pole and is measured in degrees east or west of the Prime meridian (0^0).
It is a line based on the angular displacement of a place East or west of prime meridian.
(any 1 = 2mks)

(b)
- The earth experiences force of gravity pulling towards the centre which creates a rounding effect on its shape.
- The north and south poles experience centripetal forces while constantly pull towards each other causing the flattening at the poles.
- The earth experiences centrifugal force which causes the bulge at its equator.

(any 3x1 = 3mks)

2. (a) Magma is the molten material which originates from the interior of the earth and cools below the earth's surface, while lava is the molten material that has reached the surface of earth and solidified. (1 x 2 = 2mks)

(b) - It has vertical vent / pipe.
- It is composed of alternating layers of ash and lava.
- It has a conical shape.
- It has steep sides.
- It may have a crater at the top. (any 3x1 = 3mks)

3. (a) Weathering is the disintegration / decomposition / breakdown of rocks in situ while mass wasting is the down slope movement of weathered materials under the influence of gravity. (1 x 2 = 2mks)

- Steep slopes which allow soils to move down easily.
- Presence of loose soil / absence of firm rock which means soil are easily destabilized.
- Occurrence of earthquakes which interferes with stability of soils.
- Heavy rain facilitates movement of materials down slope. (any 3x1 = 3mks)

4. (a) – Traction / surface creep.
- Saltation
- Suspension

(b) - Rainwater absorbs carbon dioxide to form a weak acid (carbonic acid)
- The rain falls on jointed limestone rocks.
- The percolating rain water reacts with limestone along the joints.
- The reaction forms calcium bicarbonate $Ca(HCO_3)_2$ which is soluble.

(any 3x1 = 3mks)

5. (a) Vegetation is the total mass of plant life that occupies a given area.
(1 x 2 = 2mks)

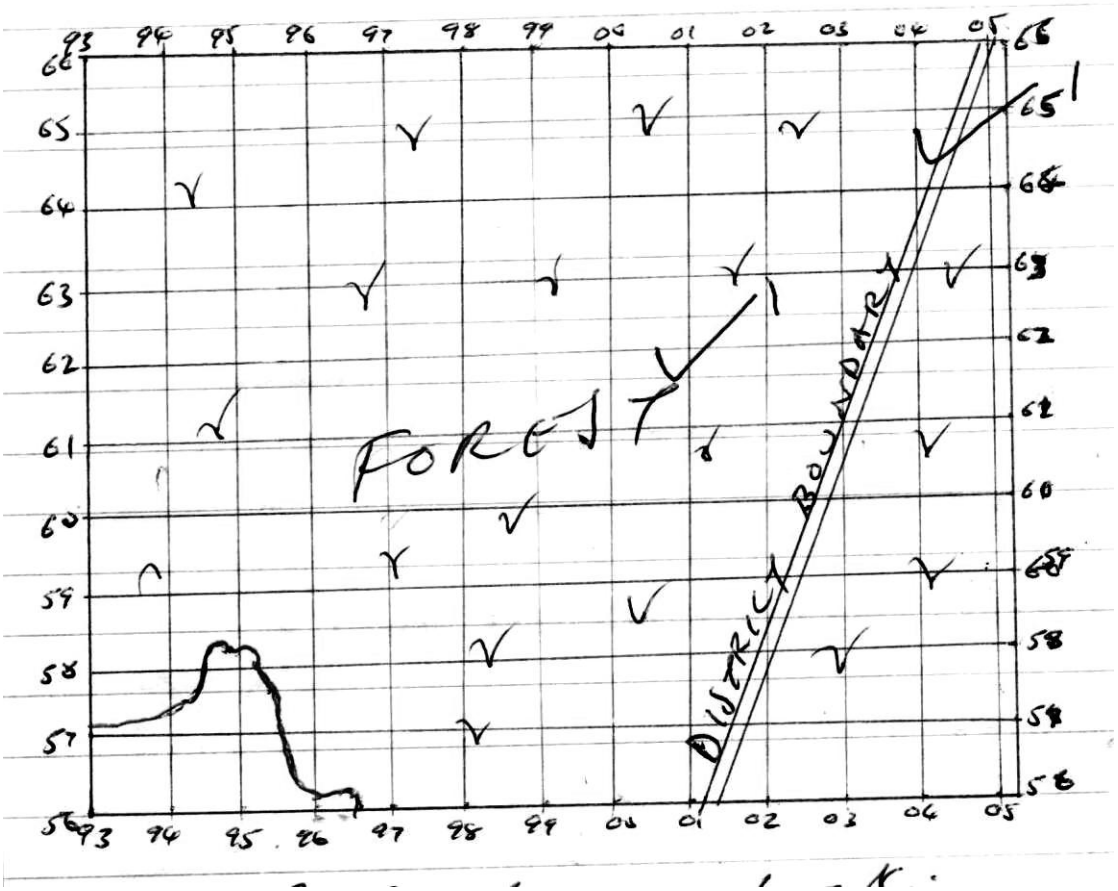
(b) - The area has scanty vegetation because it receives low rainfall.
- The high rate of evaporation / high temperature experiences in the area leaves the ground dry leading to scarce vegetation.
- The long periods of drought causes seeds to remain in a dormant state only to germinate during long rains.

6. (a) (i) - Contour
- Trigonometrical stations / spot heights. (any 2x1 = 2mks)

(ii) - 2^0 04' 00^0 (1 x 2 = 2mks)

(iii) 0^0 15' S
0^0 30' S (1 x 2 = 2mks)

(b) (i) **Map of Karatina East of easting 93 and north of northing 56 reduced by half.**



Rectangle	=>	1 mark
Forest	=>	1 mark
District boundary	=>	1 mark
Title	=>	1 mark
TOTAL		4 marks

(ii) Reduced scale: 1: 50,000 x 2
= 1 : 100,000 or 1cm rep 1km✓ (2mks)

© - Crop growing – tea, coffee factory.
- Livestock keeping – cattle dip.
- Transportation – roads
- Forestry – forest, roads in the forest.
- Trading / commerce – market, shops.
- Tourism – mountain lodge. (any 6x1 = 6mks)

(d) - The main river is river Sagana.
- There are many permanent rivers.
- Some rivers form dendritic drainage pattern.
- There is also trellis drainage pattern e.g. river Sagana.
- The area has dams / water reservoirs.
- There is papyrus swamp in the south eastern area.

- Most rivers flow from the Mount Kenya forest. (any 5x1 = 5mks)

(b) - The area has cool temperatures that favour tea growing, due to high altitude.
- The area receives high rainfall that is adequate for the growing as evidenced by presence of forests / many permanent rivers.
- The area has well drained soil suitable for tea growing, due to gently sloping terrain as indicated by spaced contours.
- The area has adequate supply of labour necessary for tea picking as evidenced by high density of settlements.
- The area has well developed transport network for transporting tea leaves to the factories as evidenced by many roads.

7. (a) (i) Weather is the daily atmospheric conditions of a place while climate is the average weather conditions of a place over a long period of time usually 35 years.

i. <u>Altitude</u>
Higher places have lower temperatures compared to lower places example top of mountain
have lower temperatures compared to lower places which have high temperatures.
(1 x 1 = 1mk)

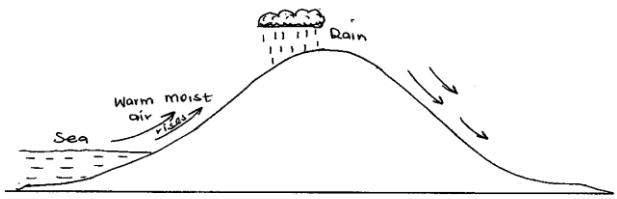
<u>Ocean currents</u>
Warm ocean currents bring warm conditions on the adjacent land whereas cold ocean currents don't have moisture therefore bring dry cool conditions on the adjacent land.
(1 x 1 = 1mk)

(b) (i) Mean annual range of temperature
$31^0 - 28^0 = 3^0C$ (1 x 2 = 2mks)

(ii) Annual rainfall for station y
Sum total = 250 + 250 + 325 + 300 + 213 + 25 + 25 + 100 + 275 + 380 + 200
= 2368mm.
Average rainfall of station y
$= \frac{2368}{12} = 197.33mm$

(c) - Experiences high temperatures throughout the year.
- High temperatures are experienced in the months of February, March and April.
- Low temperatures in the months of July.
- The station receives high rainfall in the month of November.
- The station has two rainy seasons between the month of January and May and September to December.
- Low rainfall is received in the months of June, July and August.

(d) (i) - When onshore winds rise over a hilly or mountain barrier it expands and cools.
- As it rises to higher levels it condenses to form clouds. If the clouds become heavy they fall as rain.
- This type of rainfall if also called orographic rainfall.



(ii) - Enables farmers to plan their calendar for farming activities.
- Guides landing and taking off of aircrafts.
- Helps to prepare and avert disasters related to weather.
- Determines suitable clothing to be worn at a given time. (3x1 = 3mks)

8. (a) (i) A lake is a mass of water which occupies a basin, depression or a wide hollow on the earth's surface. (1 x 2 = 2mks)

(ii) - Earth movement
- Vulcanicity
- Erosion
- Deposition
- Meteontes.
- Human activities
- By mass movement (any 3x1 = 3mks)

(iii) - Rainwater
- Rivers
- Underground water
- Melting ice (any 3x1 = 3mks)

(b) - Lake Victoria was formed as a result of earth movement (down warping) which resulted into formation of a basin like depression.
- The level to the west and south was uplifted therefore making the rivers flowing westward to start flowing eastward to back tilting.
- The reversal of the drainage caused river water to flood their valleys and fill the depression to form a lake.

(c) - They have surface outlets / rivers through which excess salt deposits are carried away.
- Some have underground outlets which drains the salts that would have accumulated at the bed.
- Some experience low rates of evaporation because they are located in low temperature areas.
- The lakes have regular influx of fresh water which dilutes the salts.
- Some of the lakes are located in areas of high rainfall which keeps the water fresh. 4mks)

(d) - Some lakes provide water for domestic and industrial use.
- Some lakes provide water for irrigation.
- Some lakes are sources of minerals e.g. Turkana and L. Magadi.
- Lake shores are sources of sand which is used in the construction industry.
- Some lakes are used to generate HEP.
- Some lakes are used for transport.
- Lakes attract tourists.
- Some lakes are used for fishing. (first 3 correct x 1 = 3mks)

(e) (i) NB: Mark any relevant as regards to the lakes e.g.
- To find out the importance of lakes.
- To find out problems affecting lakes.
- To find out the sources of water in the lake. (2 x1 = 2mks)

(ii) - Drawing sketches

- Note taking
- Tape recording
- Taking photographs. (any 2x1 = 2mks)

(iii) - Agriculture - excessive irrigation reduces the volume of the lake.
- Chemicals used in the farms pollute the water.
- Industrialization: disposal of industrial wastes pollutes the lake water.
- Deforestation – may cause the lake to be silted.
- Introduction of weeds. (any first 2x1 = 2mks)

9. (a) (i) Tides are the periodic rise and fall in the level of oceans / sea / large lakes and result in gravitational attraction of the sun and moon.
(1 x 2 = 2mks)

(ii) - Differences in ocean water density / salinity.
- Differences in ocean water temperature.
- Winds blowing over the ocean.
- Shape of coastal land mass.
- Rotation of the earth. (any 3x1 = 3mks)

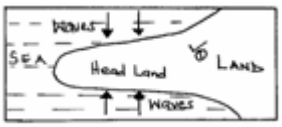
(iii) - Benguela
- Guinea
- Canary (any 3x1 = 3mks)

(b) (i) - The coasts have broad shallow indentations / estuaries.
- The coasts have several creeks / fjords / sea creeks.
- The coasts have expensive marshes / mudflats exposed at low tide.
- The coasts have broad continental shelf. (any 3x1 = 3mks)

(ii) - The duration of the exposure of the coast to wave erosion. The longer the exposure to coastal waves, the higher the rate of erosion.
- The degree of exposure of the coast to wave erosion. The exposed coasts are eroded more than the sheltered coasts hence reducing the rate of erosion.
- The nature / supply of materials. Heavy materials have a higher erosive power than fine materials.
- The nature / structure of the coastal rock. A coast made up of soft rocks wears away easily when subjected to sea waves. The rocks which are well jointed or consolidated are easily eroded.
- The nature of the coastal rocks. The rocks which are soluble / composed of limestone / chalk are easily eroded.
- The natural / strength of destructive waves. Strong waves cause greater erosion by hydraulic action and abrasion process. (any 3x2 = 6mks)

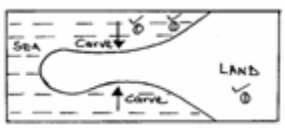
(c) Formation of a stack.

<u>Stage I</u>



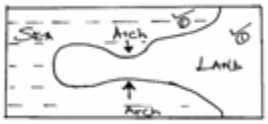
Waves attack both sides of a headland at right angle.

<u>Stage II</u>



The waves erode through abrasion and hydraulic action forming caves on both sides of the headlands.

Stage III



Continued wave erosion and weathering leads to elongation of the caves into the headlands, eventually the caves merge leading to formation of an arch.

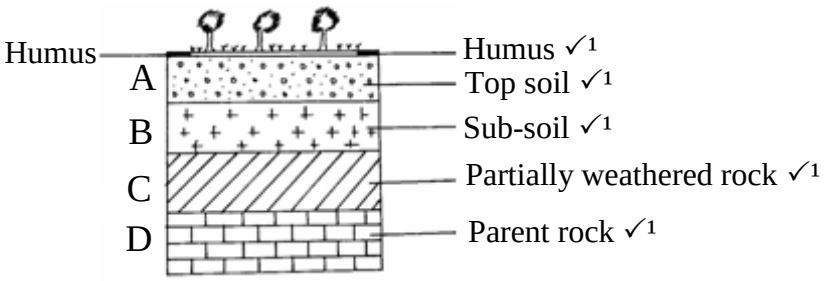
Stage IV

The roof of the arch collapses leading to isolation of part of the headland on the leeward side. The isolated headland is the stack.

Text = 4 x 1 = 4mks
Diagram = 4mks
Total 8mks

10. (a) (i) Soil catena is a sequence of different soils on a slope(1 x 2 = 2mks)

Well developed soil profile.



ii. - The soils are light in colour.
-They are saline.
-They are sandy / stony.
-They are loose in texture.
-They are thin.
-They have low moisture content. (any 3x1 = 3mks)

(b) - Type of the parent rock.
- The amount of organic matter / humus.
- The chemical composition / degree of concentration of iron oxides / minerals.
- The amount of water in the soil / drainage of the soil. (any 3x1 = 3mks)

(c) - During the wet season, mineral salts in the top layer of the soil dissolve in rain water.
- The dissolved minerals percolate / seep downwards from the top soil to the sub-soil (silica and bases).
- The dissolved minerals are deposited further downwards to the lower layer.

- Insoluble minerals such as iron and aluminium accumulate in the top layers

(any 3x2 = 6mks)

(d) (i) **Burning**

- Burning destroys micro-organisms which are essential for the humus, which bind soil particles together.
- Burning destroys vegetable matter that protects the soil against erosion.
- Burning destroys nitrogen fixing bacteria making the soil less fertile leading to fewer plants therefore less protection.
- Burning loosens the soil making it susceptible to erosion / leaching which drains away soluble mineral nutrients. (any 2x1 = 2mks)

(ii) **Continuous application of fertilizer**.

- This increases the acidity of the soil / changes the pH of the soil – the acidity destroys micro-organisms in the soil which forms humus that help in binding soil particles together for,
- Acidic soils are suitable for a variety of crops which protect soil from erosion.

(iii) **Monoculture**.

- Monoculture leads to exhaustion of certain minerals from the soil making it bare and leading to soil erosion.
- Monoculture leads to loosening of soil particles thereby encouraging soil erosion.

(any 2x1 = 2mks)

(e) (i)

-Hoes / spades / jembes.
-Polythene bags
-Plastic tins / containers
-Route maps
-Camera (any first 2 x 1

(ii)

-Group report
-Discussion on the major soil characteristics
-Displaying the soil samples
-Draw a sketch map to show the area covered by the study.
-Data analysis
-Data presentation
- Report writing. (any 1st 3 x 1 = 3mks)