

---

**KENYA NATIONAL EXAMINATION COUNCIL  
REVISION MOCK EXAMS 2016  
TOP NATIONAL SCHOOLS**

**SACHO HIGH SCHOOL  
GEOGRAPHY  
Paper 1  
MARKING SCHEME**

**SCHOOLS NET KENYA**  
Osiligi House, Opposite KCB, Ground Floor  
Off Magadi Road, Ongata Rongai | Tel: 0711 88 22 27  
E-mail: [infosnkenya@gmail.com](mailto:infosnkenya@gmail.com) | Website: [www.schoolsnetkenya.co](http://www.schoolsnetkenya.co)

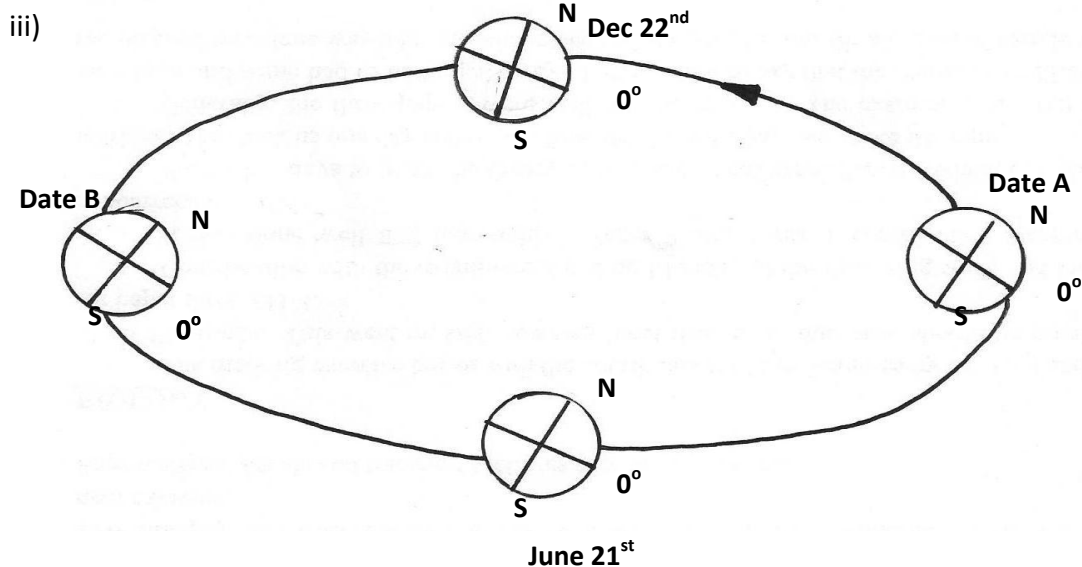
# SACHO HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

312/1  
MARKING SCHEME

**1) a. Differentiate between rotation and revolution of the earth (2mks)**

Rotation of the earth is the spinning of the earth on its axis in an anticlockwise direction from West to East while revolution is the movement of the earth along its orbit round the sun

b) study the diagram below and answer the questions that follow



- i. The seasons market X –Autumn 1mk
- ii. The date market A –Sept .23<sup>rd</sup> 1 mk
- iii. Characteristics of summer solstices
  - i) Daytime is longer than night-time at latitudes beyond the equator
  - ii) The hours of daytime increase from the tropics towards the poles

2) The diagram below

a. Name the expel of fault mountain

E, F, G

E-Asymmetrical

F- Over fold

G – Nappe /over thrust

b. State two causes of folding

-Tectonic forces which results in horizontal earth movement

-Convectional currents within the mantle triggering off horizontal movement of the earth

-Plate hectionism

3) a.State three ways in which wind transports its load (3mks)

- i. Suspension –Wind pica and curry house and dry unconsolidated materials like dust, the air current turbulence
- ii. Surface area where wind push and roll heavy materials on the surface

- iii. Siltation-Where by wind carries medium sized materials through services of hops and jumps /looping or jumping.

b. Identify 2 features produced by water in and areas( 2mks)

- i. insulbergs
- ii. Wadis
- iii. Masus and butes
- iv. Bajadas
- v. Gorges
- vi. Plaxans
- vii. Canfens
- viii. Salines

4) Describe how lake Victoria was formed (3mks)

- Earth movements caused crystals down warping
- Ahasin-Like depression was formed
- Uplifting of land masses around the depression deported the flow of rivers into the depression /caused reversed drainage
- Deposition into the depression resulted into ..... down warping –water from rivers accumulated in depression form a lake Victoria

b.State two economic importance of Lake Naivasha (2mks)

- It provides water for irrigation
- provides water for domestic /industrial use
- The lake is tourist attraction i.e. home of hipped
- Fishing activities take place in the lake i.e. source of fish
- Water ways i.e. water transport

5) The diagram below represents underground features in a limestone and use it to answer question (1)

a. i) Name the features marked X and Y (2mks)

X-stalactite

Y- Limestone pillar

ii) Describe how stalagmite is formed (3mks)

- Water on the surface percolates through the rocks of the roof of a limestone cave ‘
- This water ,which is a solution up calcium bicarbonate ,drips slowly from the roof of the cave to the floor
- Each drop which falls on the floor spreads out and evaporates
- Residue of  $\text{CaCO}_3$  which is in the form of tiny crystals ,is left on the floor
- More crystals form on top of the previous ones
- The accumulation of such crystals builds a structure upwards called a stalagmite

6) a. (i) Two physical features found in grid square 0450 (2mks)

- Rivers – Hill
- River Valley – Escarpment

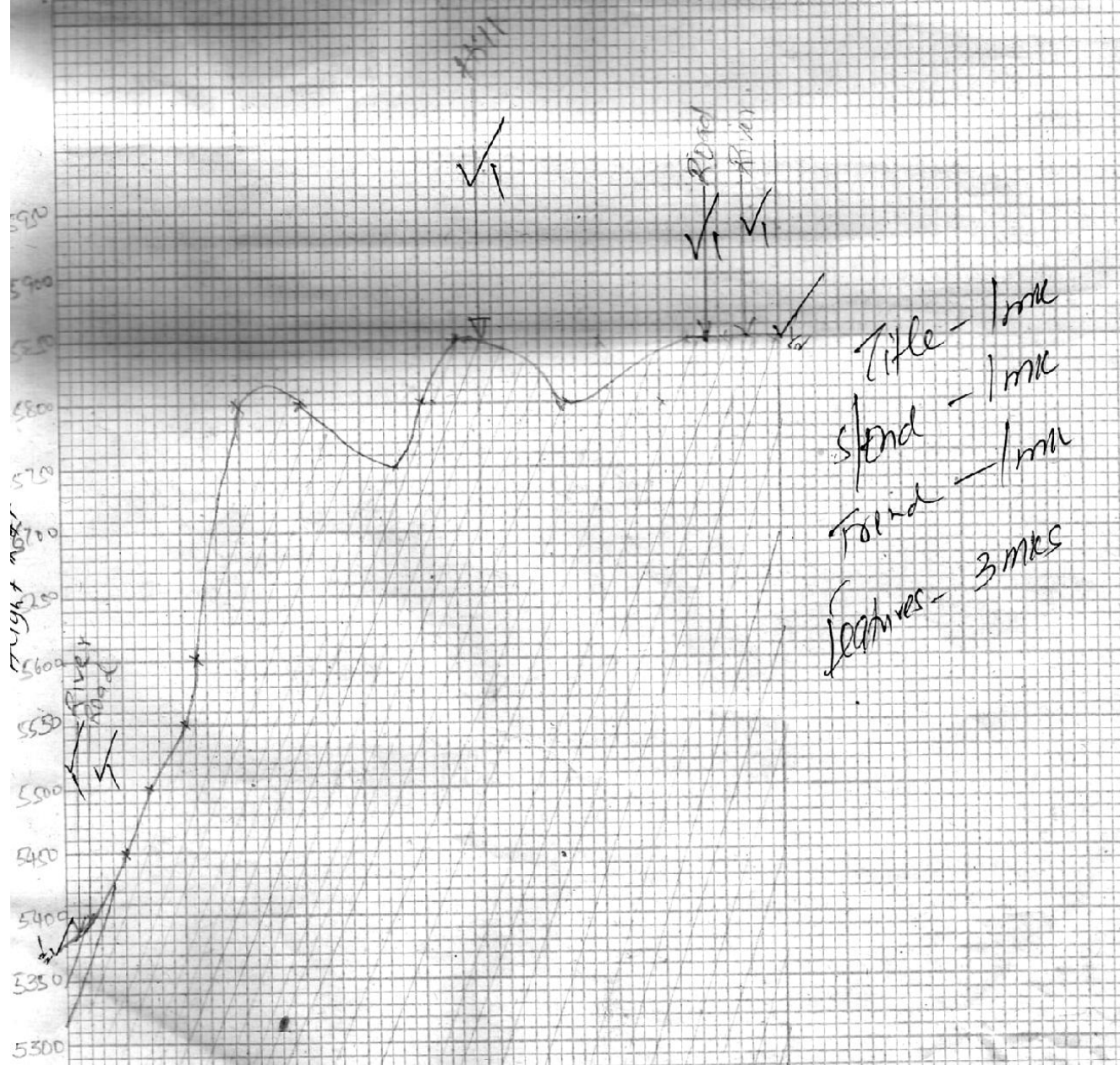
ii)  $0^{\circ}25's$   $37^{\circ}04'E$ / $0^{\circ}25's$   $37^{\circ}03.88'E$

iii) Districts covered by Karatina map (2MKS)

- Nyeri district
- Kirinyanga district

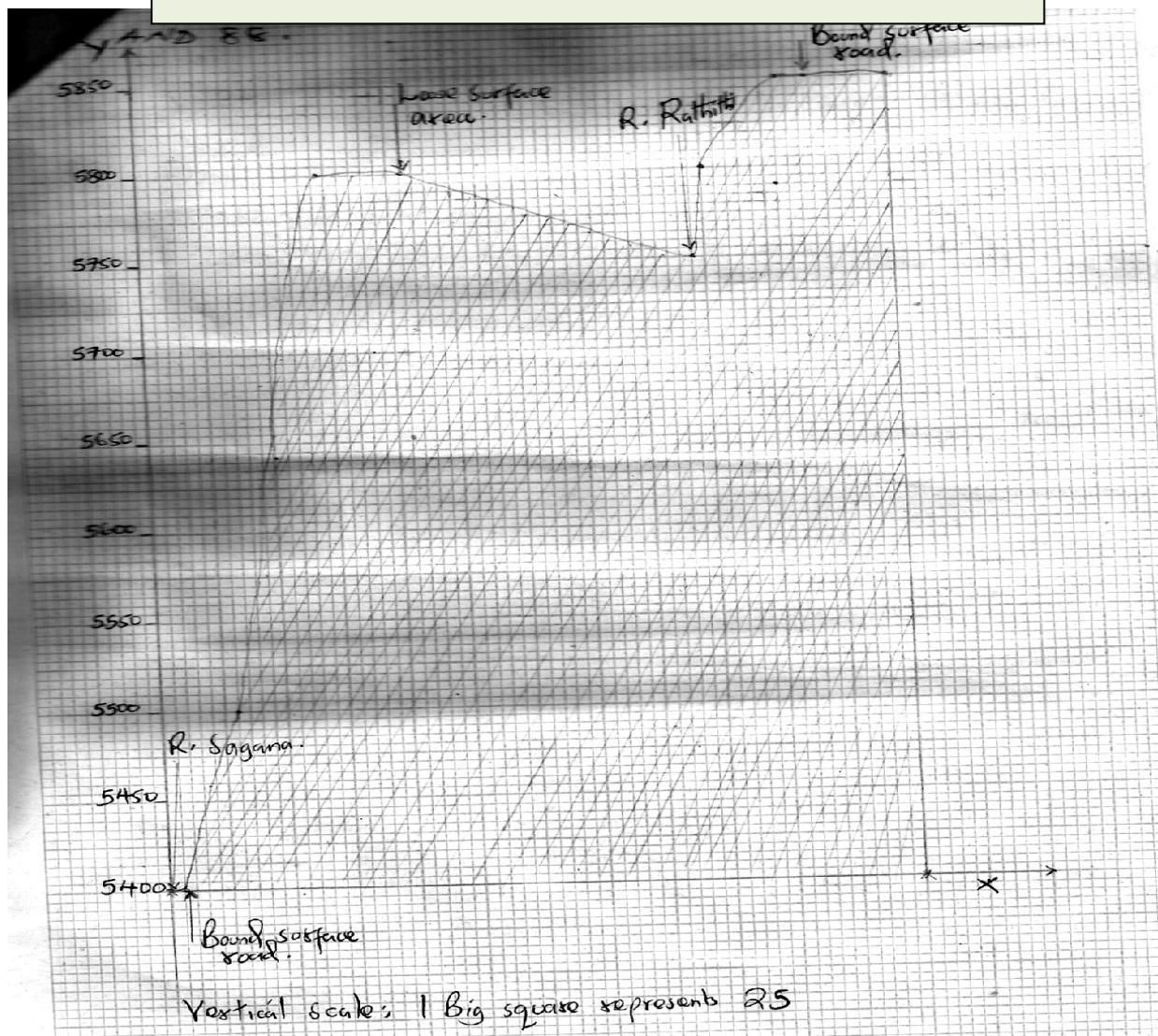
iv) 4km; 3.9km, 4.1km

### A CROSS SECTION ALONG 51 BETWEEN EASTINGS 82 AND 88





## A CROSS SECTION ALONG NORTHING 51 BTWN EASTINGS 82 AND 88



### c. Four economic activities of the area covered by the map

- Trading evidenced by the presence of markets e.g. Giakagina market in grid square 9252, Gaikuyu 9155
- Transportation evidence by presence of roads e.g. all weather bound surface road D451, loose surface road E601 towards Munyi wa Murogi
- Forestry evidence by the presence of mount Kenya forest, forest station in grid square 0055
- Fishing evidence by the presence of fisheries dept 9074
- Coffee processing/manufacturing evidenced by the presence of several coffee factories e.g. Baricho coffee factory 8945, 8149, 8353
- Livestock keeping /rearing evidenced by the presence of cattle dips in the area 8749, 8148, 9045, 9745.

### d. How relief has influenced the distribution of settlements in the area covered by the map

- Gently sloping areas are densely populated
- River valleys are not settled due to the fear of flooding e.g. along river sagama
- Mt. Kenya is avoided due to altitude as evidenced by the height of contours
- Hill tops/hilly areas are not settled

### 7a) Characteristics of the inter-tropical convergence zone (3mks)

- It's a zone of atmospheric pressure/doldrums
- It's a zone within the tropics/between  $23\frac{1}{2}^{\circ}$  N and  $23\frac{1}{2}^{\circ}$  S
- It's a zone where south-east and north-east trade winds meet
- Migrates north and south of the equator following the overhead sun

- Characterized by high temperature
- It is associated with convectional rain and thunderstorm.

**b) Characteristics of equatorial climate**

- High temperatures all the year round  $27^{\circ}\text{C}$
- Small range of annual temperature
- High rainfall throughout the year/1500mm-2000mm
- Double maxima rainfall regime /two rainy seasons
- Small diurnal range of temperatures/ $6^{\circ}\text{C}$
- High humidity /80%-90%
- Major winds are the south-east and north east trade winds
- Rainfall throughout the year/no marked dry period
- Low pressure throughout the year
- Rainfall is mainly convectional in form of thunderstorm but areas of high relief get orographic rain
- Thick cloud cover throughout the year

**a) i) State three different ways by which air condenses to form rainfall way be made to rise**

- When wind blows over a mountains region
- When hot air rises by convectional currents
- When warm air rises over cold air

**ii) With the aid of a well labeled diagram describe how relief rainfall is formed (6mks)**

- A water body/sea/lake is heated causing evaporation
- Moist air from the water body/sea is forced to ascend a relief barrier /mountains side
- Forced air ascent leads to expansion and cooling of air
- The moisture in the air condenses forming clouds
- **Rainfall mainly on the wind side of the hill. Mountain**



d. Form 4 students of Rabwae secondary school is planning to conduct a field study in a weather station near their school

i. State 3 ways in which they will prepare for the study

- Conduct a reconnaissance of the area of study
- Formulate and write down the hypothesis and objective of the study
- Identify suitable methods of data collection
- Seek permission from the relevant authorities

- Prepare a work schedule
- Provide themselves into wells
- Draw a route map of the area
- Hold discussions in class
- Assemble the relevant equipment for use in the field
- Put together stationery for use in the field
- Found the relevant books about weather and weather station

## **II. How to use a raingauge**

- Remove the water collected the jar from the metal holder
- Pour the water into the measuring cylinder
- Take the readings of the measuring cylinder
- Record the reading
- Interpret the readings

### **8a. Differentiate between mass wasting and weathering**

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

### **b. (i) A part from soil creep, name two other processes of slow mass movement**

- Talus slope / scree slope
- Solifluction
- Rock fall

### **ii) 3 causes of soil creep**

Causes of soil particles to expand and contract resulting in each of the affected particles shifting its position

- Freezing of soil water –When the water in soil freezes, it expands –This causes the soil particles on the surface to be lifted at right angles to the slope
- Rain seepage –As the rain seeps into soil, it may dislodge individual grains along with it causing them to change positions

### **c. Describe the following processes of mass wasting**

#### **i. Rock fall**

- Occurs where rocks are well jointed and with steep slopes. Rock parts are detached from steep slopes and fall rapidly at the base of slope/frequent freeze-thaw action on steep slopes particles which get detached and fall at the base of the rock face

#### **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 downhill –As the semi-liquid mud collects more materials it becomes heavier until it comes to rest at the foot of the slope

### **c. Explain the effect of mass wasting on the following**

- Tourism –Features created through mass wasting are tourists attractions
- Agriculture –Mass wasting facilitates soil cohesion leading to soil degeneration/may lead to formation of fertile soil where such soils are deposited and used for agriculture
- Pottery- Weathering produces other natural resources such as clay which is used for making bricks. Clay is also used for pottery

1. a.i) What are tides (2mks)

Tides are the periodic rise and fall in the level of Ocean Sea/large lakes as a result of the gravitational attraction of the sun and moon

ii) Four causes of ocean currents (4mks)

- Differences in ocean water density/salinity
- Differences in ocean water temperature
- Winds blowing over the ocean
- Shape of coastal lands mass
- Rotation of the earth

b. Shape factors that influence the development of coasts

- Climate will determine the growth of coasts...
- Nature of the coastal rocks will either encourage rapid erosion or reduce the speed of erosion
- The gradient of the coast/slopes-steep Coasts encourage wave erosion resulting in the formation of cliffs
- Alignment of the coast in relation to the prevailing winds will cause wave erosion/deposition

d. i. Features marked P, and R

P- Crag

R- reef

ii) Formation of features marked P (5mks)

- Wave erosion at the base of cliff forms a cave
- Weathering, especially by solution, acts on a line of weakness like joints on the surface and the landward end of the cave
- The rock minerals along such joints are corroded and dissolved by rain water. The joints become larger
- The hole grows in depth, forming a vertical shaft which eventually opens at the roof of the cave
- As the waves break inside the cave at high tide, sea water shoots upwards through this shaft
- This water is responsible for further widening of the hole, which is known as a blow hole.

e. 4 significance of Coastal land forms to the economy of Kenya (8mks)

- Coral reefs provide breeding grounds for fish. This promotes fishing industry along the Coast
- Coastal features e.g. reefs attract tourists who bring foreign exchange into the country
- Oil and natural gas are extracted from the rocks beneath the continental shelves. This generates income to the economy
- The rising and falling of tides can be used to generate electricity. This can be used in various factories
- Fresh water can be distilled to provide fresh water which can be used commercially and domestically

2. a. What is a glacier

- a glacier is a mass of ice of limited width which moves outwards from a central area of ice accumulation (2mks)

ii) Two mountains in East Africa where glaciers are found

- Mt Kenya



- Mt Kilimanjaro
- Ruwenzori ranges

b.i) Describe plucking as a process in glacial erosion

- Pressure from the overlying mass of ice cause freeze- thaw action
- Melting water fills the cracks /joints in the bed rock
- As water freezes, it exerts pressure on the cracks enlarging them
- The enlarged cracks lead to disintegration of the rock
- The disintegrated rock eventually gets embedded within the mass of ice
- As the ice moves, it pulls, gages out the ice embedded rock from the parent rock
- The last point to be mentioned to score

ii) State three conditions that lead to glacial erosion

- Nature of the underlying rock –Abrasion is more effective on softer rocks than of harder ones
- Speed of the glacier moves ,the more it erodes
- The thickness and weigh of the ice .The thicker the ice the heavier it is when ice is and as it moves along, the debris is effective in scrapping the ground by abrasion than it the ice was thin and light
- Availability of debris. The more the debris that is embedded in the ice, the more effective the process of abrasion
- Little lead is less effective in the process of abrasion.

a. Describe how the following features are formed

(i) Pyramidal peak (5mks)

- Ice accumulates in several cracks/hollows on a mountain side
- Ice exerts pressure in the cracks /hollows/cirque
- Plucking action of ice enlarges the hollow allowing more ice to collect in them
- Freeze thaw action leads to expansion of cracks/hollows making them large basins
- Moving ice plucks off loose rock further
- Nivation eats into the back wall of basins making them recede into the mountain side
- The steep –sided knife edge/ crates are formed spearing the basin
- Three or more of these ridges/crates converge at the top of the mountain to form jagged peak called pyramidal peak

ii) Hanging valley

- Initially there is a main valley and a tributary valley
- Ice fills into these valleys
- The valleys get eroded by ice
- The main valley is eroded more because it contains more ice than the tributary valley
- When ice melts, the tributary valley is left at a higher level than the main valley and is seen to hang above it

d. Explain two negative effects of glaciations

- Boulder clay deposits create a marshy landscape as a result of poor drainage. The land cannot therefore be fully utilized for agriculture
- Infertile sands deposited in many outwash plains make the land unsuitable for agriculture
- Moronic deposits results in the formation of numerous lakes which reduces the land available for use by people

- Glaciations results in a ragged landscape ,making it difficult to settle or construct transport lines/transport difficult
- Fiords are not easily accessible from the main land