KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

ALLIANCE GIRLS 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 | Website: www.schoolsnetkenya.co

ALLIANCE GIRLS HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

PAPER 1

MARKING SCHEME

SECTION A

1. a) Rotation of the earth is the movement of the earth on its own axis in an anti-clockwise direction from west to east, while revolution of the earth is the movement of the round the sun on its own orbit and it takes 3621/2 days. 2mks

   b) Season marked X

   i) – Summer 1mk

   ii) - Date marked A – September 23rd 1mk

   iii) Characteristics of summer solstice

   - Day time is longer than night time at latitudes beyond the equator ½ mk
   - The hours of day time increase from the tropics towards the poles ½ mk

2. a) How a maximum thermometer works 3mks
   - When temperature rises the mercury in the bulb is **heated and expands**. √½
   - The mercury flows towards the bulb, as it moves forward; it **pushes the metallic** index in the capillary tube. √½
   - When the highest temperature of the day is reached and it begins to cool, the **mercury contracts and withdraws towards**√½ the bulb. The metallic index is left at the position it was pushed to.
   - The point of the index which was in√ ½ contact with the mercury **indicates the highest** temperature reached during the day.
   - After the reading is taken, the index is set by **placing a magnet on the glass**√ ½ and gently moves it towards the bulb. The index is dragged until it touches the mercury. 2mks

   b) i) **Why Stevenson screen is painted white**

   - So that it can reflect direct heat from the sun. 1mk

   ii) **Has Louvers**

   - To allow free flow of air in and out of it. 1mk
   - In order to obtain room temperature

3. a) Conditions which lead to glacial deposition in Lowlands 3mks
   - Flat gentle gradient to allow for accumulation of large quantities of ice and subsequent fluvio – glacial depositional materials.
   - Stagnation of glacier followed by accumulation leads to pressure building at the base of glacier resulting in melting and deposition.
   - Friction between the moving ice and the ground over which it is passing leads to deposition of the heavy materials.

   b) A – Tail√ 1mk
   B - crag√ 1mk 2mks

4. a) Two features resulting from river erosion
   - Stream – cut valleys
   - Gorges
   - Waterfalls
   - Pot holes
   - Interlocking spurs 2mks

   b) Factors influencing the rate of river erosion
   - The volume of water in a river: - The larger the volume of water in a river, the larger the amount of load it can carry. The smaller the river the limited amount of load it carries.

- Gradient of the river channel: - The steeper the gradient the higher the water velocity and the faster the river erodes.
- The nature of the bed rock: - The less resistant the rock is , the faster it the rate of erosion by process such as corrosion, solution etc.
- Nature of the load: - Large and hard rock materials carried by the river facilitate the rate of erosion than light materials.
- The amount of load: - A river carrying a large load will erode more than the one carrying a small load.

Students must explain to score full marks

5. A) X – stalactite 1mk
Y – Limestone pillar 1mk
W – cave 1mk
3mks

b) How feature marked V is formed
V is a stalagmite
- Water on the surface percolates through the rocks of the roof of a limestone caveV
- The water which is a solution of sodium bicarbonate V½ drips slowly from the roof of the cave to the floor.
- The water spreads out and begins to evaporate
- Crystals of sodium carbonate are deposited on the floor
- Each drop which falls on the floor spreads out and evaporates
- More crystals form on top of the previous ones
- The accumulation of the crystals builds a structure upwards called stalagmite

3mks

SECTION B
MAPWORK

6. a) i) Declination of the map as at January 1992
   - 01^0,09'

ii) Longitudinal and latitudinal extent of the mapped area: -
   - Longitudinal – 37^0 00' East and 370 15' East
   - Latitudinal - 0^0 15' South and 00 30' South 2x 1= 2mks

b) i)A part from contours name one other method used to show relief in the mapped area

- Trigonometrical station
- Spot heights 1mk

ii) Calculate the area of Mt. Kenya forest reserve within Kirinyaga District shown in the map. Give your answer in square kilometers
- Complete squares = 19
- Incomplete squares = 35
- Area = Complete square + ($\frac{\text{incomplete squares}}{2}$)

= (19 + 17.5)
= 36.5 ± 1

Award 35.5, 36.5, 37.5km^2. 2mks

c) i) Apart from houses , name two human made features in grid square 8755
- Weather loose surface road
- Track / foot path
- A bridge 2mks

ii) Assume that four people live in each house in grid square 8755. Calculate the population density
Population density = $\frac{14 \times 4}{}$

$1km^2$

= $\frac{56}{1}$ = 56 persons per square kilometer

2mks

d) Description of the flow of River Sagana;

- From Mt. Kenya forest, river sagana flows south- west wards to Chieni area
- From Chieni, the river flows southwards through the remaining parts of the mapped area
- From the Northern parts to Chieni the river course is fairly straight
- From chieni southwards, it flows through a meandering course

3mks

e) i) Using evidence from the map, identify two farming activities taking place in the mapped area

- Cattle rearing / livestock keeping evidenced by cattle dips, slaughter house
- Matuto salt lick
- Coffee growing / evidenced by coffee factories
- Tea growing evidenced by tea centre
- Fish farming evidenced by the presence of fish research centers in Gs8560 and fisheries department in Katarina town.
- Plantation farming by plantation within Mt. Kenya forest

2 x 1 = 2mks

ii) Explain three factors which have influenced any on e of the fa**rming activities in**

e(i) above

- Thicket, scrub, scattered trees indicate availability of pasture for livestock
- Numerous rivers/ streams and dams provide water for the animals
- Provision of veterinary services evidenced by cattle dip/ veterinary station in Karatina Town ensures the cattle are kept healthy
- Cool temperature due to high altitude make the are conducive for rearing exotic/ cross breed animals
- High demand suggested by dense settlement provide ready market for livestock products

3x 2 = 6mks

Coffee/ Tea growing

- High rainfall evidenced by forest vegetation, high density of permanent rivers enables growing of coffee /tea
- Cool temperatures due to high altitude provides ideal conditions for growing coffee/tea
- High density of settlements likely suggests availability of labour in the coffee/tea farms
- Many coffee factories /tea centres provide market to the coffee farmers
- Good network of roads enable harvested tea leaves/coffee berries to reach the markets/ processing centres

Fish farming

- Numerous rivers and streams provide water for the fish ponds
- Fisheries departments in Karatina town provide extension services/technical service
- Cool temperatures evidenced by forests/ high altitude provide suitable conditions for rearing fish especially tilapia and trout species
- High populations likely suggested by high density of settlements provide ready market for fish.

f) i) **Briefly explain how the following factors have influenced the distribution of settlements in the mapped area:**

Forest reserve

- Vast areas in the northern/ north western part of the mapped area have no settlements

Rivers

- Many river valleys have no/few settlements
- They are steep , deep and narrow 2mks

7. a)i)Plutonic rocks are intrusive igneous rocks which are formed deep on the earth's crust while volcanic rocks are rocks which are formed on the surface of the earth when lava cools and solidifies. 2mks

ii) **Types of plutonic rocks**

- Granite
- Diorite
- Peridotite
- Gabro
- Syenite Any 2 x 1 = 2mks

b) Characteristics of minerals

i) Lustre – refers to surface appearance of minerals as it reflects light. 2mks

ii) Colour – minerals have specific colours for example gold is yellow and Copper is brown. 2mks

iii) Hardness – the measure of degree of resistance of a mineral to disintegration Some minerals such as diamond have a high resistance while others such as Talc are soft. 2mks

c) **Ways in which sedimentary rocks are significant to the Kenyan Economy.**

- Sedimentary rocks found in the lowland parts of Kenya have weathered to produce suitable soils for growing cotton, sugarcane (Agriculture hence boosts the economy)
- Sedimentary rocks are associated with valuable minerals, oil and gas, these fuel are used in industries and homes. (Industrial and domestic users)
- Various salts are obtained from rocks e.g sodaash from L. Magadi which is used in various industries homes.
- Sedimentary rocks are used for building purpose for example limestone is a raw material for manufacture of cement.(builders of stones are used in building and construction industries as raw materials.
- Sedimentary rocks offer good sceneric features for tourists who bring in foreign exchange to a country.

d) i) Major rocks they are likely to study;

- Igneous rocks (granite)

ii) Two objectives for their field study

- To find out the types of rocks found in Kisumu county
- To investigate the importance of rocks in Kisumu county

And any other relevant point – 2mks

iii)Three secondary sources they would use

- Text books
- Library books
- Atlases
- News papers
- Journals
- Internet services

And any other relevant - 3 x 1 = 3mks

iv) Hammer – breaking the rocks

- Route map – help them locate the area of study
- Working schedule – help them to locate the area of study
- Effective coverage of the area

- To manage time properly
- Helps in evaluating the study 1mk

8. a) What is a coast?
   - A strip of land bordering a sea. 1mk

ii) A coast line and shore line
   - A coastline is the point where the highest storm waves reach the land while a shore line is a point where the shore and water meet. 2mks

b) Name the features labeled PQR

P – Cliff

Q – Bay

R – Head land 3mks

ii) Describe how blow hole and geos are formed

Blow hole:
   - It is a vertical hole that forms on the land ward sides
   - The land opens into the roof of a cave
   - It forms as a result of enlargement of a weak joint in the rocks by weathering and erosion. 3mks

Geos'

   - At high tides, the breaking waves may force water against the cliff face and water emerges through the blow whole
   - When roof of a cave tunnel collapses a narrow inlet is formed thus a geo. 2mks

c) i) Three features resulting from the process of long shore drift

-Beaches

-Spits

- Bars e.g Bay bars, offshore bars, tombolo
- Cuspate forelands
- Dune belts 3mks

ii) With the aid of sketch diagram explain the process of the long shore drift
   - It involves the swash and the backwash. The materials are pushed and dragged of material up and down the shore.
   - Therefore the long shore drift is a product of swash and back wash continuously.2mks

Diagram 1mk

Texts 2mks

Total - 3mks

d) i) Objectives of their study
- To find out features formed by waves
- To investigate the effects of wave erosion along the coast
- To find out features of wave deposition
- To investigate the scenery created by wave erosion and deposition.

ii) Evidence to prove that the coast of Kenya is partly as a result of coastal emergence
- Raised cliffs
- Raised beaches
- Raised wave cut platforms

iii) Give 3 methods they used to record data
- Note taking
- Drawing sketches
- Photographing
- Filling in questionnaire

9. A)i) Name two district types of glacier

- Valley glacier
- Piedmont glacier 2 x 1 =2mks

ii) State four factors that influence the rate of glacial erosion
- Resistance of the underlying rocks
- Speed of the glacier
- Thickness and width of the glacier
- Amount of rock /carried materials responsible for the most of the abrasion.

b) Use the diagram below to answer the following questions

i) Name the parts labeled P,Q and R

P – Pyramidal peak 1mk
Q – A rete 1mk
R – Cirque or corrie 1mk

b)i) Explain the formation of the part marked Q
- It is a knife – edged ridge which is formed when the steep rocky slopes meet between glaciers.
- Glaciers accumulate on both sides of the mountain side
- Depression are formed by erosional action of glaciers that cause back cutting (receding)
- Removal bedrock on both sides of mountain slopes leaving a sharp ridge called an arête

2 x 1 = 2mks

c) - Provide beautiful sceneries e.g pyramidal peaks , hanging valleys, arête attract tourist hence earn foreign exchange.
- Ice caps and valley glaciers for feed rivers with melt water useful for irrigation domestic and industrial uses
- Water falls resulting from hanging valleys are conducive for HEP production
- Some till and out wash plains are part of the rich agricultural land for farming
- Some glacial lakes act as natural routes ways e,g the great lake North America
- Glacial erosion exposes minerals making mining easier
- Floras provide good fishing grounds and natural habours Any 4 x 2 = 8mks

d) i) - To establish their main features found on the glacial landscape
- To examine significance of glaciations on human activities 3mks
Mark any other relevant

ii) - Taking photographs
- Sketching the land scape
- Taking notes
- Mapping 3mks
Award any other relevant

10. a)i)- It is thin/ loose top layer of the earth surface consisting of rock and mineral particles mixed with decayed organic matter. 2mks
or layer of the earth on which plants grow.

ii)- Climate
- Parent material
- Topography
- Time Any 2 x 1 = 2mks

b) i) - Mineral particles
- Humus
- Water
- Air
- Living organism/ micro organism Any 2 x 1 = 2mks

ii)- Formation of soil through weathering
- Formation of soil through decomposition of organic matter

- Formation of soil through leaching process 3mks

c) i) – Supply plants with food and minerals like nitrogen, calcium etc
- The dead materials are major source of food for the micro organisms in the soil hence influence the formation of high quality soils
- Decomposition yields various acids which constitutes to weathering of rock materials
- Humus have high water holding capacity promote the development of soil structure.4mks

ii) - Soil profile – the vertical arrangement of various soil layers. 2mks
- Cateria – the arrangement of soil on a mountain slope from top to bottom.2mks

iii) Draw a well labeled diagram of soil cateria 4mks
Drawing /diagram 1mk
Labeling of parts correctly 3mks

d) i) –Gulley
- Sheet
- Splash
- Rill
- Wind Any 2mks

ii) –A hoe
- For breaking the soil particles / digging soil particles
- Polythene bag – for carrying soil samples for back to school for testing 2mks