KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

NAIROBI HIGH SCHOOL

GEOGRAPHY

Paper 1

MARKING SCHEME

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NAIROBI SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

Paper 1

Marking Scheme

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1. (a) Define the solar system

The solar system is the group of heavenly bodies comprising the sun and the eight known planets which orbits the sun

(b) Give four proofs that the earth is spherical (4mks)

- Satellite photos from space show that the earth is spherical
- Circumnavigation
- All other planets are spherical
- The rising sun from east and setting in the west
- Eclipse of the moon/lunar eclipse is circular
- Earth's horizon is circular
- An approaching ship has the mask seen first before the whole ship

2. (a) What do you understand by

(i) Micro-climate (2mks)

This is climatic conditions in a restricted area due to small differences of aspect slope, vegetation and human landscapes

(ii) Green house effect (2mks)

It is a condition where the incoming solar radiations pass through the atmosphere while the outgoing terrestrial radiation is blocked by gases/clouds/atmosphere making the earth retain the terrestrial radiation/re-radiation. (This makes earth to be warmer than it would have been) it is a condition where the atmosphere balances the incoming and outgoing terrestrial radiation making the earth to retain optimum heat

(b) Name two instruments found in a Stevenson screen (2mks)

A thermometer/maximum and minimum /six's thermometer

A hygrometer/wet and dry bulb thermometers

3. (a) State two causes of coastal submergence

Melting of ice caps and sheets due to global warming and climate change

Uplift of the coastal land due to tectonic forces (any 2x1=2)

(b) Give three conditions necessary for the growth of coral polyps

Warm Ocean waters (20-29oC)

Clear and clean water, free from silt/sediments

Salty water

Well oxygenated water

Constant washing by waves, tides and currents

Plentiful supply of microscopic life for food/planktons (any 3x1=3mks)

4 (a) A-Normal fault 1x1=1mk

B-tear/shear/slip fault 1x1=1mk

(b) Negative effects of faulting

- Disrupts lines of transports and communication
- Features provided by faulting are barriers to transport and communication
- Subsidence of land leads to loss of life and properties (1x3=3mks)

5. (a) Name any three glacial erosion features found in the highlands (3mks)

- U-shaped valleys

- Hanging valleys
- Pyramidal peaks
- Arêtes
- Cirques/corries/cwm
- Truncate spurs

(b) State two factors that the rate of glacial erosion (2mks)
- Resistance/nature of underlying rock
- Speed of the glacier
- Weight and thickness of the glacier
- Amount of rock materials carried by the glacier

6. (a)(i) Convert the RF of the map into a statement scale (1mk)
1cm represents 0.5lkm

(ii) Calculate the bearing of the church at Hiriga grid square 8457 rom the cattle dip at Kabiruini grid square 8756 (2mks)
$-288^{o}\pm1^{o}$

(iii) Calculate the area off Karatina town (give your answer in sq.km)2mks
$3.5km^{2}$

(iv) Name the two districts covered by the map (2mks)
Nyeri
Kirinyaga

(b) Identify the features marked A,B,C and D
- A-forest
- B-Karatina town
- C-Dam
- D-All weather road-loose surface

(c) Citing evidence from the map, give three economic activities carried out in the area covered by the map

Activity	Evidence
Livestock farming	Cattle dips(8756)
Trade	Market/shops/trading centres
Manufacturing/processing	Coffee factory/tea factory/industry
Cash crop farming	Coffee factory/tea factory
Fishing	Fisheries research
Plantation farming	Plantations
transportation	Roads

(d) Apart from forests, name three types of natural vegetation found to the east of Easting 94 (3mks)
- Thicket
- Woodland
- Papyrus swamp/marsh/bog vegetation

(e) Describe the drainage of the area covered by the map (5mks)

- Thre are many permanent rivers/streams
- Most of the rivers have dams/reservoirs
- Most of the rivers flow southwards
- Most of the rivers and their tributaries from dendtritic drainage pattern
- River Sagana is the main river

7. (a) (i) What is climate change?

- Involves the change of pre-existing climatic conditions of a place

(ii) State four consequences of climate change (4mks)

- Can lead to increase in rainfall making wet regions wetter
- Global warming would make marginal areas wetter
- Leads to disruption of natural ecosystems which may influence increase in pests or extinction of animal and plant species
- Reduced water sources which would affect production of hydroelectricity and crop farming
- Melting of ice/glaciers due to increased temperatures
- Flooding due to increased rainfall
- Wind erosion which results from change in wind patterns (2x1=2mks)

(b) Name two physical factors influencing vegetation distribution in Kenya (2mk)

- Physiographic or geomorphic factors (altitude, terrain, drainage, and aspect)
- Climatic or atmospheric factors (light, temperature, humidity, wind)
- Adaphic and pedological factors (soil properties which affect vegetation growth) (2x1=2mks)

(c)(i) A-Hot Desert vegetation (1mk)
B-Temperate grassland/Downs of Australia 1mk
C-Equatorial forest (1mk)
D-Tropical grasslands (savannah) 1mk

(ii) Describe the characteristics of the natural vegetation marked C(6mks)

- Close set of trees
- Trees have continuous canopy
- Trees are tall, smooth barked, with no branches at the lower sections
- The trees are commonly buttressed
- They have epiphytes
- Trees have broad leaves (6x1=6mks)

(iii) Explain four ways in which vegetation marked A have adapted to their environment (8mks)

- Have short cycles of germination, leafing , and lowering , fruiting and seed dispersal
- The leaves are succulent
- Have quick recovery ability
- They are salt tolerant
- Stomata are protected from excess exposure to evaporation
- Their leaves have been reduced
- They have rooted

8. (a) (i) A river divide
It is a ridge/high ground that separates two or more rivers basins
The highest line of an interfluves (1mk)

(ii) Describe three ways by which a river transports its load

- Traction process/rolling/sliding-The large and heavy particles of the river load are rolled/dragged along the river bed

- Saltation process-particles that are not too heavy but cannot remain suspended in water are momentarily lifted by the water turbulence and at times dropped onto the river bed.
- Solution-soluble minerals are dissolved in the river water and carried away in solution
- Suspension- light particles of the load are carried and maintained within the turbulence of flowing water (any 3x2=6mks)

NB: Correct description can earn marks without process

(b) The characteristics of a river in its old age

- The widening of the valley through lateral erosion creates an extensive area where the river deposits its load, the gradient of the plain is low
- The speed of flow is low, the gradient of the plain is low
- Due to the slow speed and the high rate of deposition, the river forms pronounced meanders
- Due to the slow speed, the main work of the river is deposition
- Meanders become more pronounced with narrow neck which are eventually blocked by deposits to form meander cut off/ox-bow lakes
- Increased deposition along the channel raises the river bed may ventually form small islands/braided channel/river braids
- Deposition along the banks of the river channel leads to formation of leaves
- The reduced speed and increased deposition blocks the river mouth forcing the river to form distributaries/delta (any 7 points =7mks)

(c) Description of drainage patterns /systems

Superimposed

- The drainage system develops on a rock structure that overlay a totally different one
- The river valley cuts through the surface rock layer onto the underlying rocks
- Gradually the surface rocks are removed and the underlying rocks now become exposed
- The superimposed drainage system bears on relationship to the existing rock structure/discordant with the rock structure (3mks)

(ii) Centripetal

- The pattern develops in an area with a central basin
- River drain into the depression from different directions (2mk)

(d) You have planned to carry out a study of a river in its youthful stage preparation for the study

- Carry out reconnaissance survey
- Read from reference books/seek permission from the authority
- Prepare a sketch map
- Formulate objectives from the study/Hypothesis of the study
- Prepare relevant stationery (any 2x1=2mks)

(ii) Two features you are likely to study

- Interlocking spurs
- Gorges
- Water falls/rapids/ cataracts
- Potholes, plunge, slope river, slope pools (any 2mksx1)

(iii) Two problems you are likely to experience during the study

- Steep slopes
- Thick vegetation
- Rocky contours
- Poor communication/bad roads
- Hostile weather conditions (to be specified)

- Wild animals crossing river valley (any 2x1=2mks)

9. (a)(i) Apart from Thermal metamorphism, name two other types of metamorphism
   Dynamic /regional /kinetic
   Contact
   (ii) Describe the following types of rocks
   (a) Calcareous rocks
   They are sedimentary rocks which are formed from the hard parts of the shells/skeletons of marine. The rocks are rich in calcium (3mks)
   (b) Carbonaceous rocks
   Are sedimentary rocks which are formed from the remains of plants that were buried deep in many years. The plants are transformed into rock because of pressure of crystal rocks and resultant heat (3mks)
   (iii) State three examples of rocks that are dominant at the coast of Kenya
   -Coral limestone/dolomite/calcite/chalk/coolite
   -Sandstone
   -Gypsum
   - Quartzite 3x1=3mks)

   (b)(i) Explain how sedimentary rocks are formed through the following processes

   (i) Mechanical process
   - Particles are derived from existing rocks through process of weathering/erosion
   - They are then transported by water/wind/ice and are deposited on land /large water bodies
   - They are deposited in layers
   - Over a period of time, they are compacted by pressure to form rocks such as clay, sand, conglomerates
   (ii) Chemical process
   - Minerals are dissolved from land and are carried in solution into bodies such as cakes/sea
   - The mixing of water of different types may result in chemical reactions followed by precipitation
   - Dissolved minerals can also be precipitated directly from water through evaporation
   - This happens in very hot regions where there are constricted/shallow bays of lakes/seas, such rocks are known as evaporates
   (4mks)
   (c)(i) State three activities thy would be involved in
   - Breaking the rocks
   - Digging the rocks
   - Collecting samples
   - Tasting the rocks
   - Observing the rocks (max 3x1=3mks)

   (ii) State three objectives of your study
   - To find out the types of rocks
   - To find out the age of the rocks
   - To identify the different colours of the rocks

- To find out the uses of rocks (accept any other relevant point)

(Max 3x1=3mks)

10. (a) Differentiate between a spring and a well

A spring is appoint or a place where underground water flows out naturally onto the land while a well is a dug in the round, often with the purpose of getting water

(1x2=2mks)

(b) With the aid of a well labeled diagram, describe the three zones of gound water

- Zone of non-saturation-lies nearest to the surface. Water passes through this zone as it makes its way downwards
- Zone of intermittent saturation-contains water only in wet seasons or after heavy rain
- Zone of permanent saturation- contains water both wet and dry seasons

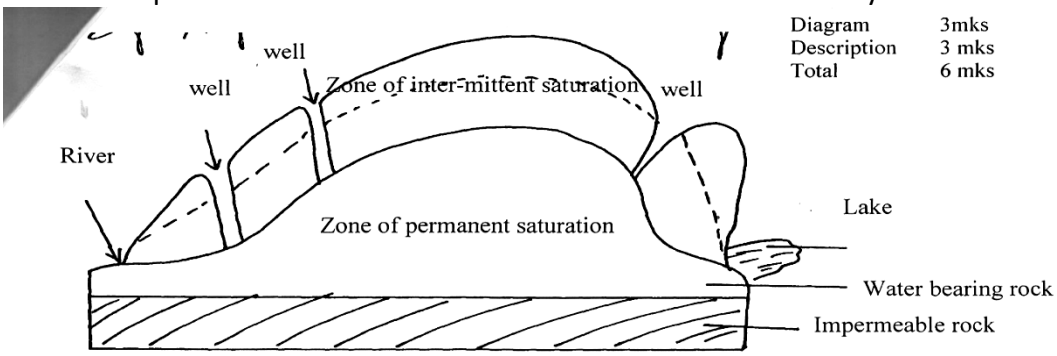

Diagram 3mks
Description 3 mks
Total 6 mks

c) State four conditions necessary for the formation of an artesian well.

- The acquifer must be sandwiched between impermeable rocks so that it can retain water.
- Acquifer must outcrop in a region which is a source of water e.g Rainy area/beneath a lake.
- Acquifer must be dip from a region of water intake and the rock layers must form a broad syncline/basin.
- Mouth of well must be lower than the intake area. This allows water to be forced to the surface by pressure with no need of pumping it. 4X1 4mks

d) Explain three ways in which ground water is of significant to human activities.

- Acts as sources of rivers.
- Acts as source of water- wells, springs, boreholes, oases which provide water used in homes and industries.
- Used for irrigating agricultural land e.g Sahara desert, where dates grow near oases, Taveta- cotton and bananas are grown using water from springs.
- Settlement — in dry areas, people tend to settle near the springs due to the availability of fresh water.
- Provision of hot water- water from hot springs may be tapped and pumped into houses through pipes to heat up houses during cold seasons e.g Iceland.
- Tourist attraction — Hot springs e.g Olkaria, Lake Bogoria etc, valuable mineral salt are deposited and people exploit them for economic gain.

2X3 =6 mks

e) i) Define the term Karst scenery 2mlcs

- Is any rugged landscape whose surface rocks are limestone or dolomite and which abs been acted on by carbonation and solution by rain and river water to produce features typical of limestone surfaces.

ii) Give two conditions for the development of Karst landscape

- Rocks should be hard and well jointed.

- Hot and humid climate.
- The surface rock and rock beneath should be thick limestone/dolomite/chalk.
- The water —table in the limestone rocks should be deep below the surface. 2x1 =2 mks

iii) Outline the significance of Karst landscape to human activities.

- Tourist attraction
- Discourage settlement
- Limestone blocks are used for building houses.
- Provide a row material for cement manufacturing 3X1 =3 mks