KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

ALLIANCE BOYS HIGH SCHOOL

GEOGRAPHY

Paper 1

MARKING SCHEME

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ALLIANCE BOYS HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

312/1

GEOGRAPHY

Paper 1

MARKING SCHEME

SECTION A

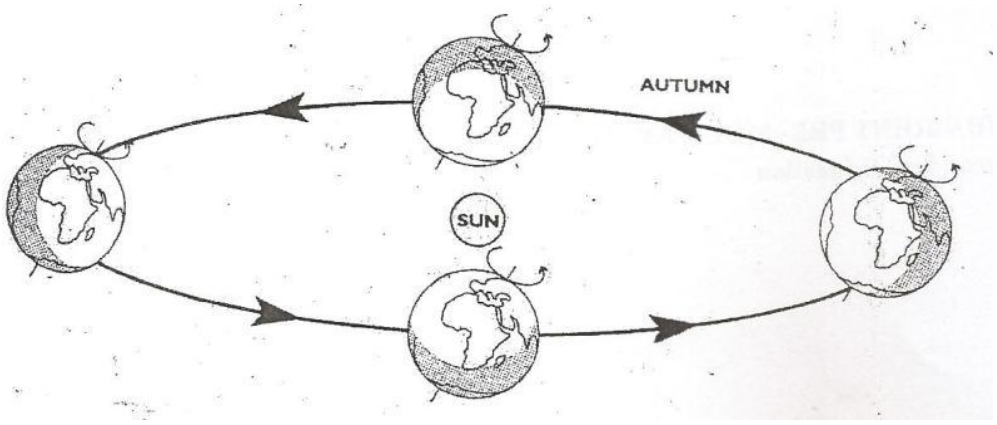
Answer ALL the questions in this section

1 (a) Name and describe two types of environment (2 marks)

-physical environment-includes the natural physical conditions of weather, soil, etc

- human environment-comprises human activities like mining

(b) The diagram below shows a movement of the earth



(i) Identify the movement (1 mark)

Earth revolution

(ii) State two effects of the above movement (2 marks)

- It causes the four seasons namely Summer, Autumn, winter and Spring
- It causes varying lengths of day and night at different times of the year
- It causes changes in the position of the midday sun at different times of the year.
- It cause lunar eclipse

2. (a) State two effects of aridity and desertification (2 marks)
    - Can lead to development of infertile soils thus low productivity
    - Reduced Agricultural practices that lowers food production

(b) Give three indicators of climate change. (3 marks)

- Increased soil erosion
- Migration of people to more productive areas in search of food and pasture
- Strong winds
- Low levels of development due to less economic productivity

3. (a) (i) **Define the term 'rock'** (1 mark)
    - A rock is a substance that is an aggregate of mineral or particles

(ii) Name two examples of hypabyssal rocks (2 marks)

- Dolerite
- Porphyrite
- Porphyry

- Diabase
- Lamprophyre
- Granophyres

(b) State two characteristics of minerals (2 marks)

- Minerals differ in the degree of hardness
- Some minerals aggregate into distinct shapes
- Minerals differ in their composition
- Minerals differ in the ability of allowing light to pass through (i.e. opaque, translucent or transparent)
- Minerals differ in texture (feel)
- Different minerals have different colours
- Minerals differ in luster/luster (surface appearance as it reflects light)
- Minerals have different degrees of tenacity = (i.e. whether, brittle, elastic, ductile or flexible)
- Minerals differ in cleavage
- Minerals differ in streak/colour left when a mineral is rubbed against a hard surface 14

4. (a) Name two denudation processes (2 marks)
   - Weathering
   - Mass wasting
   - Erosion
   - Transportation

   (b) State three factors that influence movement of materials on slopes (2 marks)
   - The nature and weight of the materials. The heavier the material the faster the movement
   - More saturated materials move faster than less saturated materials
   - The steeper the slope, the faster the movement
   - Areas receiving heavier rainfall experience more and faster movement of materials

5. (a) Give three components of soil (3 marks)
   - Soil organic matter
   - Soil inorganic matter
   - Soil water/moisture
   - Soil air/gases

   (b) State two factors influencing development of soil catena (2 marks)

- The topography on the surface of soil
- The drainage since well-drained mature soils are found at the hilltops while dry immature soils are found on steep slopes
- Transport of soil debris
- Removal of soluble salts from the upper slopes to the lower slopes/leaching

SECTION B

Answer question 6 and any other two questions from this section

6. Study the map of Karatina 1:50,000 (sheet 121/3) provided and answer the following questions.

   (a) (i) What is the title of the map extract? (1 mark)
   - Kenya 1:50,000

(ii) Give the name of the map extract bordering Karatina to the east (1 mark)

- Kerugoya (1214)

(b) (i) Name two human features in grid square 0346. (2 marks)

- Huts/houses/settlements
- School
- Slaughter house
- Foot path

(ii) What is the bearing of the Air photo principal point in grid square 9452 (13A/13) from the trigonometric station in grid square 9552 (121T7) (2 marks)

- 283 ± 1 (282^0, 283^0, 284^0)

(c) Calculate the area of the natural forest in Kirinyaga District (2 marks)

- No of complete grids 8
- No of incomplete grids 4/2 = 21/30km

(d) (i) Using a scale of 1cm to represent 20 meters, draw an accurate cross section from grid square 850570 to grid square 910570. (3 marks)

(ii) On the cross section mark and name;

- Forest (1 mark)
- River (1 mark)

(iv) Determine indivisibility between the two end points (1 mark)

- The two end points are not inevasible

(e) Describe the drainage of the area in the map extract (5 marks)

- They are numerous permanent rivers in area covered by the map
- Presence of water reservoirs e./g along R. Sagana
- The rivers generally flow north to southern part of the mapped area
- Most rivers depict a dendritic drainage patter
- Presence of papyrus swamp in the southern part of the area covered by the map

(f) Students of a school at Ragati went for a field study in Karatina Township.

(i) Name two types of settlement patterns they may have identified in the town. (2 marks)

Nucleated settlement pattern

- Linear settlement pattern

(ii) State four solutions to problems they may have encountered during the field study. (4 marks)

- The use of an interpreter to solve the problem of language barrier
- Asking for assistance from well developed learning institutions for some shortage
- The use of sport shoes to overcome the problem of the study being tedious
- The used of sampling technique to be able to complete the field work exercise
- Improvisation.

7. (a) (i) List two effects of horizontal earth movements (2 marks)

- Stretching
- Shortening
- shearing

(ii) Give three causes of earth movements. (3 marks)

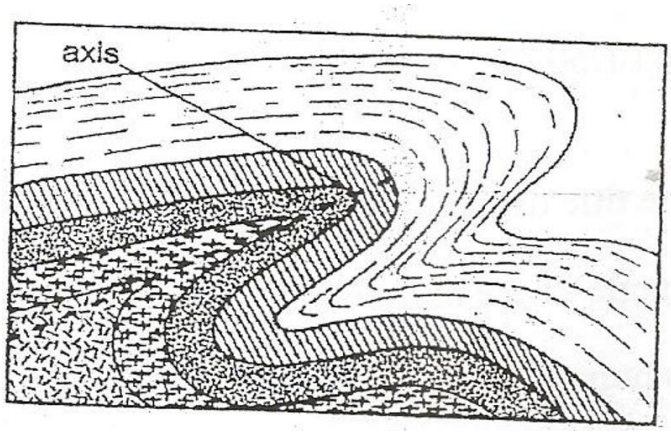
- movement of magma within the crust
- gravitative pressure
- convectional current in the mantle

- isostatic adjustment

(b) Name and describe three types of plate tectonic boundaries. (6 marks)

- constructive/Extensional/Divergent boundary-Plates separate/move away from each other.
- Destructive/compressional/convergent boundary-Plates crush against each other
- Transform/conservative boundary – *Plates move past each other*

(c) (i) The diagram below shows a type of fold.



Identify the type of fold. (1 mark)

- overdraft

(iii) Name two other types of folds (2 marks)

- Simple symmetrical folds
- Asymmetrical folds
- Isoclinals folds
- Nape/Overthrust folds
- Anticlinorium folds
- Syclinorium folds

(d) With the aid of well labeled diagrams, explain the formation of fold mountains. (7 marks)

- An extensive depression called geosynclines formed on the earth surface
- It was filled with water form rain and underground forming sea
- Surrounding land masses were intensively eroded and the resultant sediments deposited in the geosynclines in layers
- The geosynclines subsided further due to the weight of the deposits
- The layers of sediments were subjected to compressional forces which made them to fold into mountains e.g. Atlas and Alps

(e) State four significance of folding to the physical and human environments. (4 marks)

- Fold mountains – landscape provides a unique scenery that attracts tourists who bring foreign exchange/revenue used to develop other sectors of the economy
- Act as protective barriers in times of war as defense walls
- Fold mountains are a barrier to transport and communication
- Folding process bring minerals closer to the surface for easy extraction
- Warmer slopes of fold mountains encourage settlement and agriculture
- Heavy Rainfall received on windward slopes of fold mountains support agriculture, settlement, forestry and act as water catchment areas
- Cold descending winds on fold mountains slopes cause harm to crops

8. (a) (i) What is a lake? (1 mark)

- A lake is a body of water that occupies a basin, depression or hollow on the earth surface.

(ii) List two sources of lake water (2 marks)

- Rainfall/precipitation
- Rivers
- Underground water
- Melting ice

(b) (i) Name two fresh water lakes in the Rift valley region of Kenya (2 marks)

- Lake Naivasha
- Lake Baringo

(ii) State four reasons why some lakes are saline (4 marks)

- Some lakes lack outlets in the form of rivers which would drain away some of the salts contained din away
- Some lakes do not have enough fresh water rivers emptying into them
- Some lakes are located in areas that experience high rate of evaporation hence increased concentration and accumulation of salts
- Surface run-off and rivers drain into some lakes having dissolved some mineral salts
- The rocks over which the lakes water is n contact which may contain a lot of mineral salts

(c) Giving an example in each case, describe the formation of;

(i) Lake formed due to faulting (4 marks)

- Faulting due to tectonic forces may lead to uneven displacement of land
- Some parts sink and tilt along the faults
- It results in long, narrow, steep-sided depression along the fault lines
- Faulting may result in depression on the floor of the rift valley as land adjusts
- Such depressions are shallow
- The depression fill water from rain/underground to form rift valleys lakes

(ii) Crater lakes (4 marks)

- Craters/calderas form during vulcanicity on a volcano or at ground level
- When lava cools, the magma in the vent contracts/pressure leads to explosion/ a crater due to a falling meteorite
- Rain water and melting snow may collect in the crater to form a crater lake, e.g. L. Paradise on Mt. Marsabit, Crater Lake on Central Island of L. Turkana.

(d) Explain four positive influence of lakes on human activities (8 marks)

- Provision of water for domestic and industrial use
- Provision of fresh water (some lakes) for irrigation in areas that practice agriculture
- Some lakes are used as a cheap means of transport e.g. the Great Lakes of N. America
- Some lakes are sources of valuable minerals exploited for economic gain
- Some lakes are sources of building materials e.g. sand, pebbles etc
- Some lakes are sources of fish eaten by people/ a habitat of fish
- Some lakes are tourist attraction sites e.g. tarns and crater lakes which earn revenue/foreign exchange used to develop the economy
- Lakes control flooding incase they are located along river courses
- Some lakes are sources of rivers which are useful in the lands through which they flow

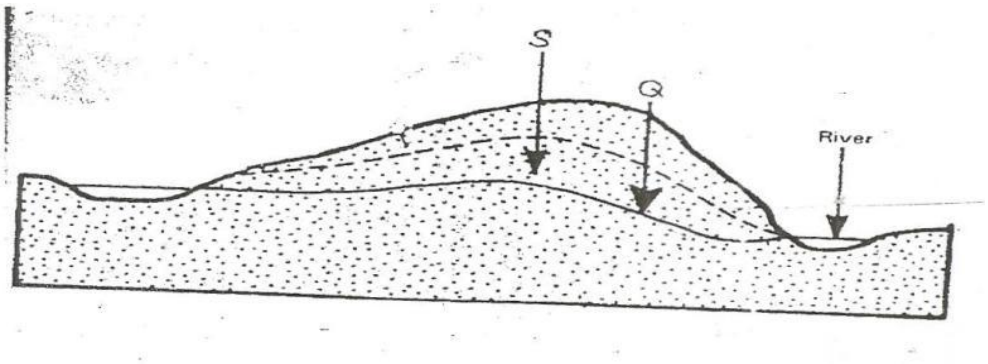
9. (a) (i) Give three sources of underground water (3 marks)

- Rain water
- Melt water
- Lake/sea water
- Magmatic water

(ii) State three factors that influence the existence of underground water. (3 marks)

- Light rain falling for a long period is able to infiltrate more than heavy rainfall falling for a short period of time
- Infiltration is grater on level or gently sloping land that steeply sloping topography that encourages surface runoff
- Permeable rocks allow for infiltration than impermeable rocks
- Presence of vegetation encourages infiltration than bare ground
- Low level of saturation of the ground encourages infiltration.

(b) The diagram below shows zones of ground water.



(i) Identify the parts labeled Q and S. (2 marks)

- Q-Water table/zone of permanent saturation
- S – Zone of intermittent saturation

(ii) State three ways through which springs form (3 marks)

- When a permeable rock lies on top of an aquifer
- When well-jointed rocks forming a hilly region absorb water via these joints
- When a dyke cuts across a layer of permeable rock and water on the upper slope of the dyke is impounded
- When the limestone rock overlies impermeable rocks on a scarp slope
- When gently slopping layers of permeable rocks alternate with layers of impermeable rock resulting in springs at a point where the permeable one is exposed to the surface
- When limestone rocks overlies impermeable rocks

(c) State four factors that influence the development of Karst Scenery(4 marks)

- The surface rock and the rock beneath should be thick limestone, dolomite or chalk
- The rock should be more resistant and well jointed
- The climate should b hot and humid to enhance chemical weathering
- The water table in the limestone rocks should be deep below the sruface

(d) (i) Name two surface features in limestone regions (2 marks)

- Grikes
- Clints
- Swallow holes
- Dry Valleys
- Dolines
- Uvalas
- Polje
- Gorges

(ii) Describe the formation of a stalagmite (4 marks)

- Water seeps through the roof of a cave in a limestone region forming calcium bicarbonate
- The solution drops slowly form the roof to the floor of the cave
- The solution evaporates and leaves behind crystals of calcium carbonate
- More deposits of crystals pile on top of the first one and grow upwards towards the roof.

(e) Explain two ways through which limestone landscapes influence human activities. (4 marks)

- The surface and underground features attract tourists who in turn bring revenue or foreign exchange for a country's development
- Limestone landscapes discourages settlements due to their nugged nature and thin soils
- Limestone rocks/blocks are sued as building materials and for cement manufacture
- Limestone areas have thin soils hat are suitable for sheep farming/grazing

10. (a) (i) Name two types of river erosion (2 marks)
    - Headward erosion
    - Vertical erosion
    - Lateral erosion

    (ii) State three factors influencing the rate of river erosion (3 marks)

- Large volume of water leads to a high rate of river erosion than a small volume of water
- Steep gradient leads to high speed which enhances high rate of erosion
- Less resistant bedrock is easily eroded than a more resistant rock on the river bed
- Large and more resistant load encourages erosion than small and less resistant load.

(b) Name and describe three was by which a river transports its load (6 marks)

- Suspension – Light load is carried a float
- Saltation – materials are lifted in a series of hydraulic lift/short ju*mps or hops*
- Traction – Heavy load are pushed and rolled along the river bed by the force of water
- Solution – mineral salts dissolved in water and carried farthest.

(c) (i) Apart from deltas, give two river depositional features (2 marks)

- Alluvial fans
- Flood plains
- Meanders
- Ox-bow lakes
- River braids
- Natural levees

- Deferred tributaries
- Distributaries

(ii) Giving an example from Kenya, describe the formation of arcuate delta. (3 marks)

- When a river deposits coarse seed
- Strong currents form the sea spread the materials over a wide area on the seaward side
- The river divides into several channels/distributaries e.g. R. Tana and R. Sondu

(d) Describe the formation of the following river patterns;

(i) Dendritic pattern (3 marks)

- Resembles a tree trunk with its branches
- Tributaries join the main river at acute angles
- Confluences form accordant junctions
- Drainage pattern forms in areas where rocks are of uniform structure and resistance/homogenous rocks
- Direction of flow is governed by direction of slope

(ii) Centripetal pattern (3 marks)

- Made up of rivers flowing into a common inland basin or depression like a lake/sea/swamp
- The depression is an area of inland drainage
- Pattern is guided by slope

(e) State three positive significance of rivers (3 marks)

- River water is used for both domestic and industrial purposes
- Rivers with fresh water are used for irrigation
- Navigable rivers are used as transportation routes
- Some rivers provide port facilities especially in their raise and estuaries e.g. R. Mwachi
- Some rivers are rich as fishing grounds Dammed rivers are sued for generation of HEP
- River beds and valleys are sources of building materials like gravel, pebbles and sand
- Some alluvial sediments may contain valua*ble minerals like gold, diamond etc*
- *Features formed by rivers, e.g. waterfalls, gorges etc attract tourists who bring* foreign exchange for developing others sectors of the economy
- During flooding, fertile alluvial deposits may provide for fertile soils for agriculture
- Some rivers form natural boundaries between administrative divisions like countries