KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

KAPSABET BOYS HIGH SCHOOL

GEOGRAPHY

Paper 1

MARKING SCHEME

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KAPSABET BOYS HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

Paper 1

Marking Scheme

1. (a) Definition of the term environment

   The term environment refers to all external conditions surrounding an organism and which has influence over its behavior.(1x1 = 1mk)

   (b) The two types of environment

   - Physical environment which includes physical conditions of weather , climate e.tc
   - Human environment which includes human activities such as farming, tourism e.t.c

   (c) Relationship between geography and chemistry.

   - Chemistry includes the study of substances, their composition and behaviour.
   - Geography applies chemistry in studying the chemical composition of rocks and soils.

   2mks – relationship must come out clearly

2. (a) Effects of revolution of the earth

   - Causes the four seasons, winter, autumn, spring and summer.
   - Causes varying length of day and night.
   - Causes Lunar eclipse
   - Changes in the position of the midday sun at different times of the year.

   (b)Differences in time between the two longitudinal

   (i) Differences in time

   12. 00 – 8.00 = 4hrs √ (1mk)

   (ii) The earth rotate through 15^0 every one hour. in 4 hrs rotation is through

   15 x 4 = 60^0 √ (1mk)

   (iii) The time at x is behind that at green wich meridian , so x must be to the west of green wich by 60^0.

   X is therefore 60^0 w √ (1mk)

3. (a) Amineral is inorganic substance which occurs naturally at or beneath the surface of the earth. (1mk)

   (b) Porous are spongy like rocks with pores and have a high capacity to hold water while pervious rocks are solid rocks which have cracks with a high rate of water passage. √

   (2x1 = 2mks)

   (e) Factors influencing development of a soil profile.

   - Rate of evaporation
   - Human activities
   - Vegetation cover
   - Time
   - Weathering process
   - Nature of parent rock

4. (a) 1 – Elbow of capture (1mk)

   2- Wind gap / Dry valley (1mk)

   3- misfit river / Beheaded stream (1mk)

(b) Causes of a river rejuvenation

- Increased discharge
- Fall in sea level
- Change in rode resistance
- Regional uplift across river valley
- Local subsidance across river valley

5. (a) X – Terminal morain (1mk)
   Y – Lateral morain (1mk)
   Z - Middle / medial morain (1mk)
   Each (1mk x 3 = 3mks)

(b) Factors influencing the movement of glacier.

- Gradient of the slope
- The thickness and weight of ice
- Friction along the floor
- The season, whether summer or winter.

6. (a) (i) The administrative divisions of Kitale
   - West pokot district √ 1
   - Tran – Nzoia district √ 1

(ii) 6-Grid references of Kipsaini police stations
   - 341253 √√

(iii) Two methods to represent relief
Contours √ 1
Trinogonometrical stations each √

(b) (i)Area of Kitale minicipality

- Full squares 6 (6 x 1km^2) √ ½
- Half squares 15 ($^{15}/_2$ x 1 km^2) √ ½
- Area of full squares 6 km^2 √ ½
- Area of half squares 7.5 km^2 √ ½

Total square are 13.5 km^2 √

(ii) 2 Functions of Kitale township

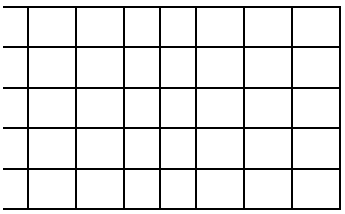
- Recreation centre (show ground/ Golf course)
- Medicare centre (hospital)
- Trading centre (shops)
- Entertainment centre (sports club).

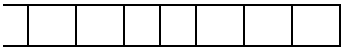
(iii)Longitudinal extent of Kitale map extract.
$35^0 00^1$ to $35^0 15^1$√

(c) (i) Reduce area bounded by easting 32 to 40 and Northing 11 to 17 . on It mark loose surface road C638.
Squares from 32 to 40 easting

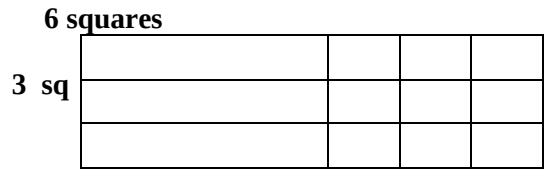
- Squares (8 x ½ = 4 squares)
- Squares from 11 to 17 Northing.
  6 squares (6 x ½)= 3 squares

Before





8 squares



After

Total marks 3

(ii) Two economic activities giving evidence

Economic activities	Evidence from the map
Farming (wattle)	Estates √√
Trade	Kitale Township √√ 2
Transport services	Road network √√ 2
	C638, C637 e.t.c

Any two answers 2mks each (4mks)

(d) (i) 2 Preparations before field work

- Preparing working schedule
- Seeking permission from relevant authority
- Pre – visit for familiarization
- Budgeting

(ii) Two reasons why pre visit

- Help in identify respondents
- Helps in identifying materials to carry during the field study
- Helps to identify likely wood problems.
- Helps in scheduling work
- Helps in saving time while in the field

7. (a) (i) Mass – wasting refers to the creeping flowing , sliding or falling of weathered rocks down slope under the influence of the force of gravity.

(ii) Factors influence the speed of Mass – wasting.

- Movement of material will be faster on steep slopes compared to gentle slope
- High amount of water increase the weigh of the rock materials , reduce friction between the material and the surface of the slopes hence faster moist
- Deeply weathered layers of rocks, weak rocks, and thinly bedded layers of rocks experience rapid movement.
- Area of high rainfall temperatures experienced a lot of mass – wasting.
- Bare surface experience faster movement because roots of vegetation hold soil particles together and also protects the ground surface from weathering.
- Mining , building and construction break the rocks hence encouraging faster mass- wasting.

(b) Causes of Land slides

- Deep undercutting of the base of a steep slope by a river / wave action or mining or creating Embankments of roads and Railways.
- Earth movement e.g Faulting , folding or volcanicity

(c) (i) two underground limestone features

- Cores / Caverns
- Stalactites
- Stalagmites
- Limestone pillars / columns

- Underground streams.

(ii) Necessity of a work schedule in fieldwork.

- Provide orderliness in field work
- Ensures that all planned activities are carried.
- It minimizes time wastage
- Enables learners to carryout follow up activities after the study.
- Enables learner to evaluate the progress of the study.

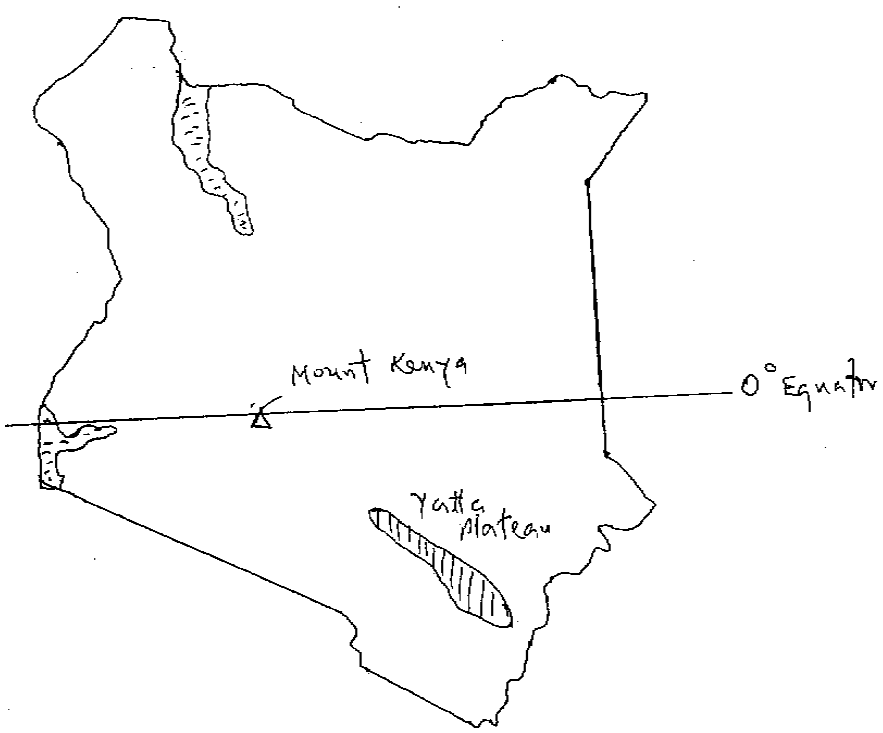
(iii) Two reasons why karst landscape is not suitable for settlement:

- Karst areas lack surface water and people avoid settling in such areas
- Kars surface is rugged thus discouraging construction of settlement.
- Karst areas have thin soil which discourage crop farming hence discouraging settlement.

8. (a) What is volcanicity

A volcano is a hill or a mountain on the earth's surface formed by eruption of magma through a vent. (1 x 1= 1mk)

Map of Kenya showing Mount Kenya, Yatta plateau and equator



(b) Difference between;

Magma and lava.

Magma is the molten rock material which originates from the interior of the earth / mantle, cools while below the surface (and had large crystals) while lava is the molten rock materials that has reached the surface (and has small crystals) (Double tick 2mks)

Solfatara and mofette

Solfatara is a subsidiary vent on the volcano or a hole on the ground which mainly emits sulphurous gasses while mofette is a subsidiary vent on the volcano or a hole on the ground which mainly emits carbon dioxide gas. (Double tick 2 mks)

(c) (i) Formation of mount Kenya

- The underlying molten rock escaped through a vent to the surface / volcanic eruption accurred.
- Violent eruption threw out solid material such as ash, dust and cinder / pyroclast.
- Acidic lava out poured, cooled and solidified.
- The alternating layers of lava and pyroclast pilled a round the vent

- Over the years , eruption ceased and the volcano become extinct.
- Erosion followed exposing the plug and producing the jugged peak of the mountain Kenya (4mks)

(ii) Formation of yatta plateau

- Was formed when magma reached the surface of the earth through a series of vents / fissures .
- The lava was extremely fluid / ultra basic
- Lava spread evenly over a large area, filed valleys and low lying hills
- Lava cooled slowly and solidified to form a plateau (3mks)

(d) (i) Likely problems during fieldwork

- Difficulty in climbing/descending steep landscape.
- Accidents e.g slipping
- Attack by dangerous wild animals.
- Hindrance by poor weather conditions.
- Inability to access some areas. (3 x 1 = 3mks)

(ii) Negative effects of vulcanicity likely to be observed

- Some volcanic features like steep create barriers to the construction of communication lines.
- The rugged nature of some volcanic landscapes like mountain slopes discourages settlement.
- Weathered volcanic materials like ashes and granite rocks result in infertile soils that do not support agriculture.
- Volcanic mountain create rain shadow effect on their leeward side , e.g the naro moru- Nanyuki region which receives low rainfall unreliable for agriculture

9. (a) (i)The three process of wind erosion
    - Abrasion
    - Deflation
    - Attrition (3 x 1 = 3mks)

(ii) Three reasons why wind is as effective agent of erosion in hot desert.

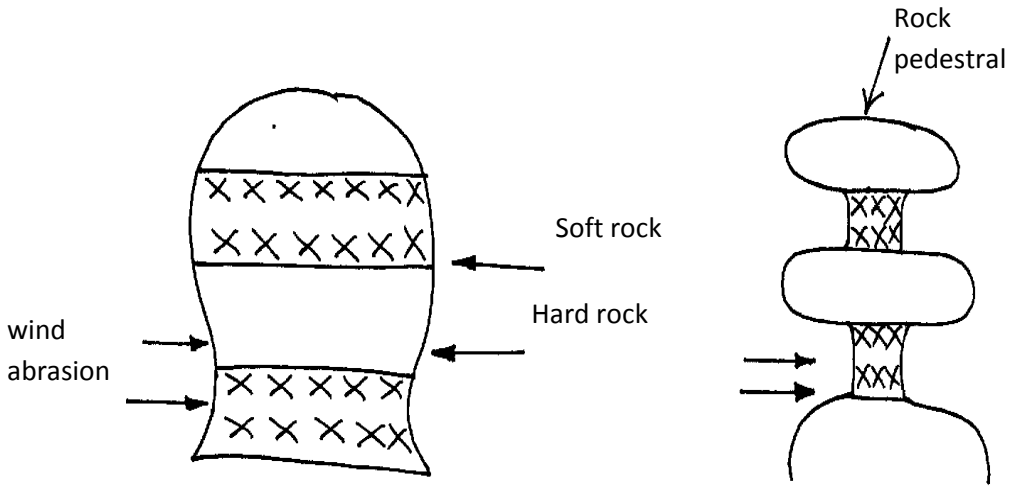
- Presence of loose and consolidated materials.
- Occurrence of strong tropical storms.
- Absence of vegetation cover (3 x 1 = 3mks)

(b) (i) Formation processes.

Rock pedestral

- Wind abrasion and weathering attack a massive rock outcrop with alternating horizontal layers of hard and soft rock
- The less resistance layers are eroded faster than the resistant layers.
- Abrasion is more near the ground because there are more abrasive materials.
- This leads to the formation of an irregular rock pillar with protruding rock

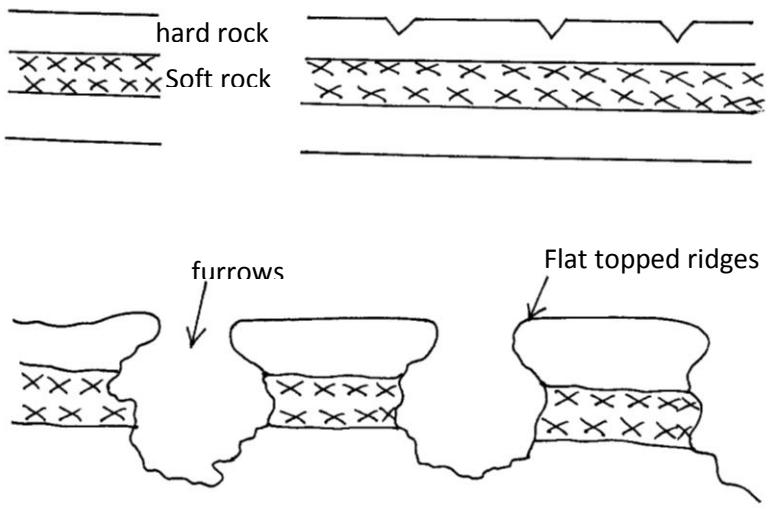
- layers that alternate with hollows and a narrow base called a rock pedestal



Description = 3mks
Diagrams = 2mks

(ii) Zeugens

- A masive rock with alternate horizontal layers of hard and soft rocks lies in the path of the prevailing winds.
-The resistant rock in the surface has fronts and lines of weakness
- Physical weathering enlarges the joints causing the rocks to disintegrate along them.
- This opens up the joints and makes it easier for deflation to take place.
-Abrasion acts on the lines of weakness thus enlarging and deeping them.
- The softer layers beneath are reached and greatly eroded to form a landscape with furrows separated by flat topped ridges called Zeugens



A ZEUGEN

- Weathering and erosion occurs on a plateau area that is capped by a resistant layer of hard rock.
- The less resistant layer beneath is exposed and undergoes weathering.

Diagrams – 2mks
Description – 4mks
Total = 6mks

(c) Features that result from water Actions in the desert

- Wadi, canyon, player, intermontaine basins, pediments, pediplains, inselbergs, Alluvial fans, Dry river valleys, Bajada.

(d) (i) Three reasons why they needed to sample part of the desert.

- To save them time.
- To reduce the cost of the study
- To focus on relevant areas
- To conduct a detailed study
- To reduce bias in data collection
- The desert is too big to be covered adequately.

(ii) Two sampling techniques they are likely to have used.

- Random
- Systematic
- Stratified

10. (a) Explain how climate is influenced by following factors.

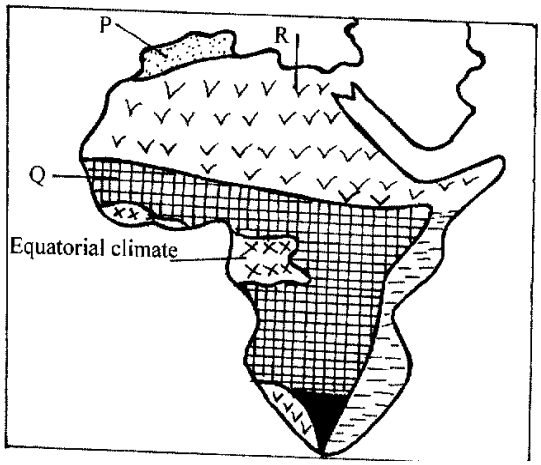
(i) Latitudes

- Areas near the equator are hotter than those away from the equator. This is due to higher concentration of sun's rays per unit area near the equator

(ii) Distance from the sea

During the hot season coastal lands are relatively cooler than inland areas in the same latitude. This is due to cooling effect of the sea breezes. (2mks)

(b) Study the climatic map of Africa below and answer the questions that follow.



(i) Name the climatic region marked P and Q

- P – Mediterranean climate
- Q – Tropical climate.

(ii) Describe the characteristics of equatorial climate.

- High rainfall throughout the year / about 2000mm
- Experience double maximum rainfall regimes.
- Rainfall is mainly convectional , and falls in the late afternoon accompanied by thunderstorm.
- High temperature throughout the year/ 27^0C
- Annual range of temperature / 3^0C – 5^oC.
- Low diurnal range of temperature / 6^oC – 8^oC.
- There is extensive cloud cover.

- Long hours of sunshine.
- Low atmospheric pressure. (3mks)

(c) (i) What is climate change?

- Is the establishment of a new climate system, with changes in climatic elements such as temperature and precipitation over a continuous period of time (Involves the change of pre- existing climatic conditions of a place.)

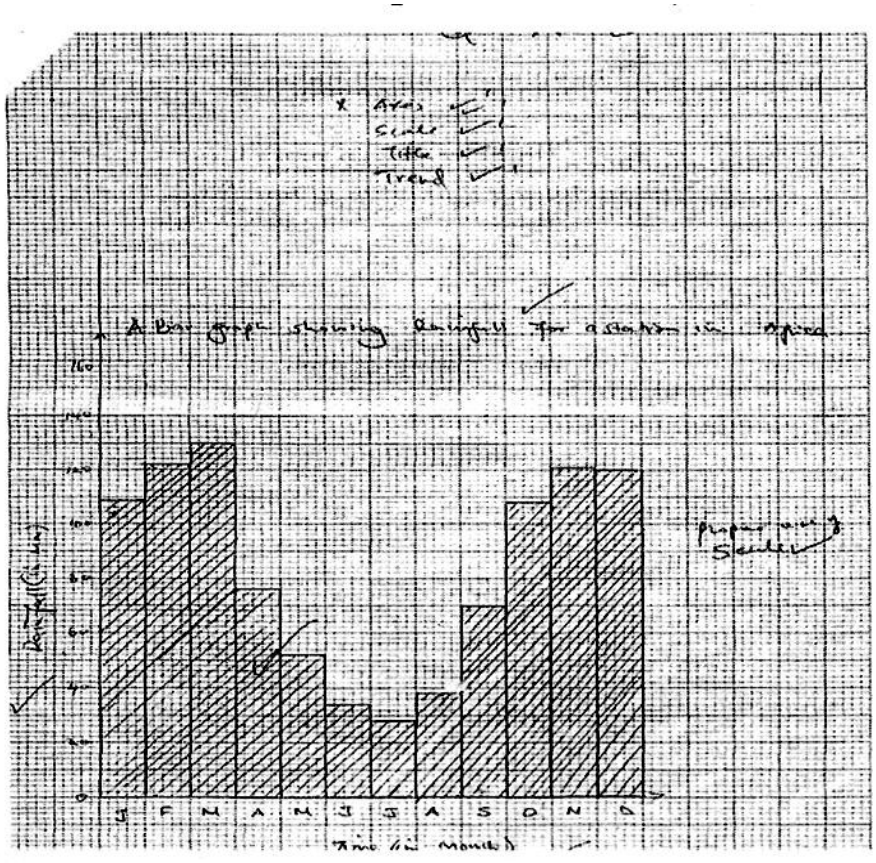
(iii) Explain two effects of climatic change on the physical environment. (4mks)

- Increase of temperature which may lead to global warming that may cause high evaporation of the ocean water. This may lead to increased rainfall.
- Melting of ice caps, high rate of evaporation and stunted growth
- Decrease in temperature may lead to severe winter which may cause stunted growth of plant / decrease in rainfall and increase in areas under snow.
- Change in wind pattern may lead to destruction of vegetation / Human made features structures / high and destructive sea waves / wind storms / wind erosion and flooding. (4mks)

(d) The table below shows rainfall and temperature figures of a station in Africa.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature	24	24	23	22	19	17	17	18	19	20	22	23
Rainfall (mm)	109	122	130	76	52	34	28	38	70	108	121	120

(i) On the graph paper provided draw a bar graph to represent the rainfall figures. (Use vertical scale of 1cm to represent 10mm) (5mks)



(ii) **Describe the rainfall pattern of the station.** (3mks)

- There is rain throughout the year / no dry month
- The highest rainfall is received during the hot month / from October to March
- Lowest rainfall occurs during the cool month / April to September.
- The driest month is July with 28mm of rainfall.
- The total rainfall for the year is 1008mm (4mks)

(iii) Calculating the average monthly temperature for the station.

Mean temperature $= \frac{24+24+23+22+19+17+18+19+20+22+23}{12}$

$= 20.66^{0}C$ (2mks)

(iv) Identify the type of climate represented in the table above. (1mk)

Warm temperate eastern margin (china type)