FORM FOUR CLUSTER KCSE MODEL 6

GEOGRAPHY PAPER 1 ANSWERS

SECTION A (25 Marks)

Answer all questions in this section

1. Atmosphere is a layer of air that surrounds the earth. (1 mark)

b) State three reasons why temperatures are higher in the lower atmosphere.

-Weight exerted by the atmosphere above it.

-Numerous dust particles that trap a lot of heat.

- Long wave radiation (terrestrial) increases the temperature.

2.

ai) ***Parts of the diagram***

A - Condensation level

B - Moist wind

C - Dry descending winds.

aii) ***Other types of rainfall.*** (3 marks)

-Convectional

-Frontal rainfall (2 marks)

b) ***Characteristics of I.T.C.Z.***

- Zone of low pressure.

Rainfall accompanied by thunder and lightning.

-High temperatures experienced.

-Lies between 23 ½^{0}N +23 ½^{0}S

-Rainfall is mainly in the afternoon. 2 x 1= 2 marks

3. a) Backwash- when the waters of a breaking wave flow back to the sea. (1 mark)

b) Factors that influence development of coasts. (3 marks)

-Nature of the coastal rocks.

-Frequency and strength of waves.

-Relief of the coast.

-Orientation of the coast, whether regular or irregular.

-Emergence or submergence of the coast.

4. - Strength and speed of wind.

- Absence of obstacles like vegetable.

- Availability of loose unconsolidated materials.

- Little or absence of moisture in the ground.

b) Describe how a Wadi is formed.

- Torrential rain in desert leads to formation of rills on a gentle slop.

- The rills are enlarged by flash floods forming gullies.

- More rainwater erodes the gullies forming wider dry valleys known as Wadi.

5. Parent rocks

- Influences soil colour.

- Affects the soil mineral content.

- Hard parent rock takes longer time to break down. Any 2 x 1 = 2 marks

b) Ways through which soils degenerate

-Leaching of minerals from the upper layer to bottom layers.

- Monoculture reduces the percentage of mineral compositions.

- Continuous application of fertilizer alters the soil pH.

- Removal of the top layer through erosion.

- Burning of land which destroys micro-organisms.

-Poor farming techniques such as ploughing up and down slope

SECTION B (75 Marks)

Answer question 6 and any other two questions in this section

6.

a)i) ***Conversion of 1:50,000 to statement***

$50{,}000 \div 100{,}000 = 0.5$

$\therefore 1\,centimeter\ represents\ 0.5\,kilometers$

(2 marks)

aii) Magnetic declination $2^0 21^1$ (2 marks)

aiii) Six figure grid reference for Nyalenya 289304 (2 marks)

b) ***Physical factors that have led to dense settlement in the area covered by the map.***

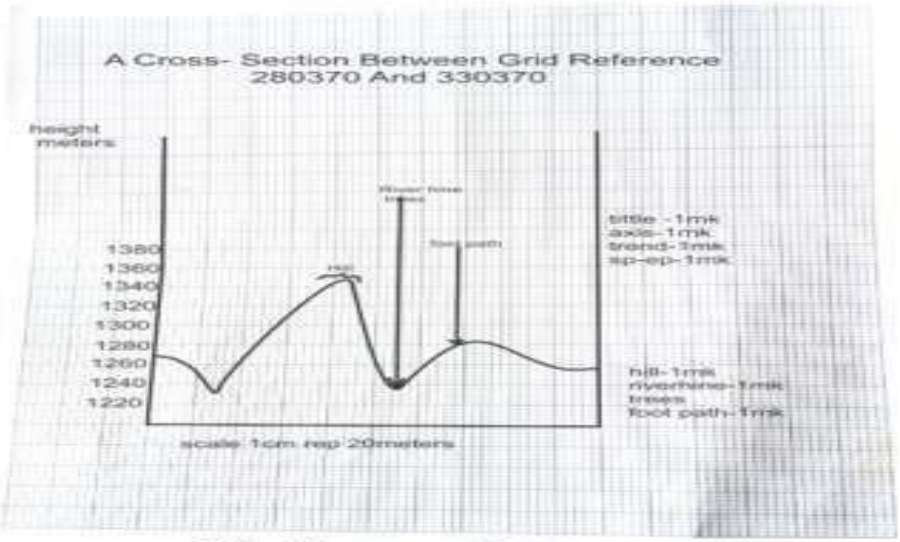
-Extensive gentle and plain land-shown by widely spaced contours.

-Adequate water supply-presence of numerous rives.

-Well drained fertile soils evidenced by numerous rivers/cotton store at Bumuji, Odiado

3 x 2= 6 marks

ci) ***Cross-section***



- Title of the cross section 1 mark
- Labling of the axis 1 mark
- Correct trend 1 mark
- Start and end point 1 mark

cii) ***Gradient of the cross section***

$$G = \frac{VR}{HE} \surd = \frac{5000m}{140m} = \frac{1380-1220}{5000} = \frac{160}{5000} = 0.032$$

$G = 0.028\surd$ (2 marks)

d) ***Land uses***

- Crop growing – cotton store
- Transport – road network
- Human settlement – settlements.

Any 2 x 2 = 4 marks

a) ***Vegetation – plant cover that grows in an area, can be natural or planted.***

bi) ***Vegetation types marked***

X - Savannah/tropical grassland

Y - Medditerenean

Z - Desert 3 x 1= 3 marks

bii) Vegetation in Z existence has been influenced by climage.

-Vegetation is scarce or scattered because the area receives low rainfall.

-Some plants remain in dormant state due to long periods of drought.

-Luxuriant growth on the margins of the zone is due to high rainfall.

-Some areas are bare due to strong winds that sometime uproot the vegetation.

Some plants have deep taproot system to survive during long dry spells

c) Influence of animals on vegetation.

Destruction caused by overgrazing leaving the land bare.

-Enhance seed dispersal causing a variation in plant species at a place.

-Bacteria and some insects can cause diseases leading to death of some plants.

-Insects and some birds promote population enhancing plant resistance and continuation.

-Burrowing animals promote soil formation leading to healthy plant growth.

di) Three activities during the field study are

- Estimating height of plants.

- Identify the different types of plants.

- Counting plants.

- Taking photographs of plants.

- Drawing sketches/transects.

ii) Ways that I would identify types of plants.

- Observing their appearance.

- Observing their colour.

- Estimating their age.

- Examining the leaf type.

- Observe root system.

- Smelling their flowers.

iii) Relevance of the information collected.

-Plan agricultural activities.

- Help in land conservation.

- Used to determine the economic use of vegetation.

-For future research reference.

8. Tana, Yala, Sondu 2 x 1 = 2 marks

b) Using well labled diagrams describe how a river capture occurs.

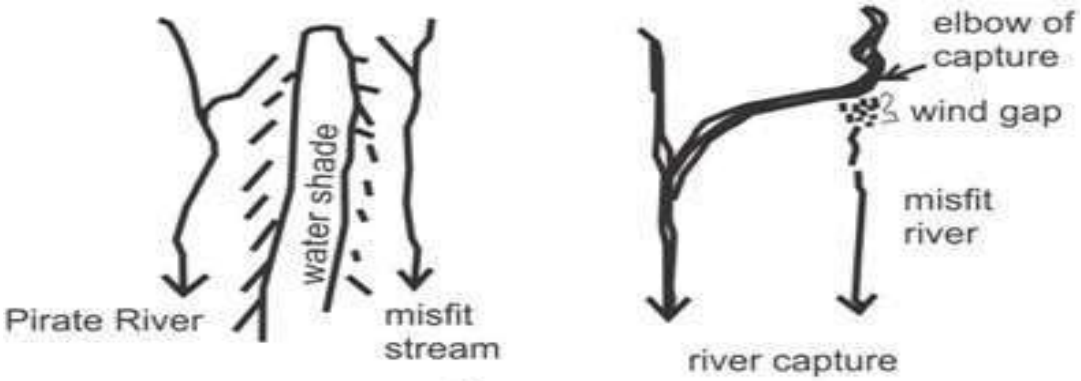
-Two rivers, weaker and stronger flow in adjacent valleys.

-Strong river flows in a wider valley and at a lower gradient than weaker river.

-The stronger river (pirate) erodes more headward towards the valley of a weaker stream.

- More vertical and headward erosion makes the stronger stream cut into the valley of the weaker stream.

-Waters of the weaker stream are diverted into the valley of a stronger stream. This is known asriver capture



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ci) Ways a river transports its load.

- Suspension- fine particles and other lighter materials are lifted and maintained within the water turbulence downstream.

- Saltation – medium sized particles are lifted and bounce over short distances by river turbulance

- Solution – rock and other soluble materials along the channel are dissolved, moved downstream.

-Traction- Large and heavy particles are rolleed along the river bed. (4 x 2=8mks)

cii) Factors that influence development of drainage patterns.

-Direction of the slope of the land.

-Difference in rock resistance.

-Arrangement of rock layers or structure.

-Faulting in drainage areas. Any 3 x 1= 3 marks

d) Four positive significance of rivers.

-Are sources of water for domestic and industrial use.

-Some rivers contain minerals that are extracted earning the country foreign exchange.

-Rivers are source of fish that is removed and sold or consumed.

-Some rivers can be harnessed to generate H.E.P.

-Rivers contain building materials such as sand.

-Some rivers have attractive features that bring in tourist earning the country foreign exchange.

9. a) Glacier erosion processes.

- Plucking

-Abrassion 2 x 1= 2 marks

b) Conditions that lead to glacier deposition.

- Change of gradient – reduces the speed of glacier leading to deposition of materials.

- Rise in temperature- causes melting of glacier hence depositing materials.

- Friction at the base and sides of the glacier- causing melting hence deposition of materials.

- Obstruction/accumulation of glacier- this causes pressure at the base of glacier leading to

melting.

- Alternate warm and cold conditions causes seasonal melting of glacier. 4 x 2=6 marks

ci) Formation of terminal moraine -Glacier moving downslope carries materials.

-Moving glacier stops.

-The ice at the snout melts.

-The melting cause release of load.

-Gradually the load piles into a ridge.

-Over time a horse

–shoe shape solid materials called terminal moraine are formed.

N/B -Points 6 must be mentioned to score maximum 6 marks

cii) Depositional features in low land areas.

-Drumlins

-Eskers

-Outwash plains

-Crag and tail

-Erratics

-Till Any 3 x 1= 3 marks

d) Three negative effects of glaciation to man

-Deposition of rock materials in plain areas inhibits agriculture.

-Boulder clay deposits are water logged hence inhibit settlement.

-Glacier troughs, crag and tail make construction of transport network difficult and expensive.

ai) ***Distinguish between orogeny and orogenesis.***

Orogeny refers to the fold mountain building period while orogenesis is the process of fold mountain formation. (2 marks)

aii) ***Theories that explain formation of fold mountains.***

-Convection theory.
-Contraction theory.
-Plate tectonic theory. Any 2 x 1 = 2 marks

b)i ***Other features resulting from folding.***

-Intermontane plateaus and basins.
-Escarpments.
-Rugged terrain.
-Synclinal valleys.
-Anticlinal valleys Any 3 x 1= 3 marks

b)ii) ***Significance of folding.***

-Fold Mountains are a tourist attraction.
-Folding process helps bring minerals close to the surface.
-Fold Mountains attract rain on the windward slopes.
-Fossil fuels are found in folded sedimentary rocks.
-Windward slopes receive rain hence provide source for rivers.
-Fold Mountains provide cool highlands for growth of natural forests good for lumbering.

c)i) ***Give three reasons why you would need a route map.***

- Identify the direction of features.
-Prepare a work schedule.
-Estimate distance to be covered.
-Estimate time the field study is likely to take.

cii) ***State two objectives for the study.***

-To find out features resulting from folding.
-To study how folding has affected human activities.
-To study the nature of rocks within the area.

iii) ***Follow-up activities***

-Drawing diagrams of features.
-Reading more on the topic.
-Writing reports.
-Discussing reports/analyzing reports.
-Displaying photographs.