**LANJET CLUSTER JOINT EVALUATION**

***Kenya Certificate of Secondary Education***

**312/1 GEOGRAPHY Paper 1**

**MAR/APR 2024 MARKING SCHEME**

**SECTION A**

**Answer all questions in this section**

 1aDefine the term environment 2mks

Is the external conditions that surrounds an organism

b. Name two divisions of physical geography 3mks

climatology

hydrology

biogeography

2.a Give the forces responsible for the spherical shape of the earth 2mks

Force of gravity

Centrifugal

Centripetal

b. State reasons why the interior of the earth is still hot 3mks

pressure exerted by the overlying rock mass

radio activity

heat retained during earth formation

3 a.highlight the characteristics of the troposphere 2mks

Temperature decreases with height

High water vapour

Wind speed increases with height

b.state the factors that influence the amount of sunshine received on the earths surface 3mks

lengh of the day

scattering of dust particles

absorption by humidity

4 a what is zero lapse rate 2mks

Is a situation where thee is no change in temperature with increase in altitude

b. give the main zones of the atmosphere 3mks

Troposphere

Stratosphere

Mesosphere

5a.Give two types of igneous rocks 2mks

Intrusive igneous rocks

Extrusive igneous rocks

 b.State any 3 uses of rocks 3mks

some rocks feature as tourist attraction

some rocks are used in curving

some rocks are source of salt

**SECTION B**

**ANSWER QUESTION 6 AND ANY OTHER TWO IN THIS SECTION**

a. i .What is the magnetic variation of the map 2mks

2◦19’

ii. Name the tittle of the map 2mks

East Africa 1;50000[kenya]

iii.Give any 4 types of natural vegetation found in the area covered by the map 4mks

Woodland

Scrub

Thicket

Bamboo

Scattered trees

 b.Citting evidence from the map give any 2 economic activities taking place in the area covered by the map 4mks

trade presence of market

transport and communication presende of roads

d. citing evidence from the area covered by the map,give any 3 functions of Mumias town 6mks

Education centre presence of school

Health centre presence of dispensary

Transport and communication road junction

Trading centre presence of shops

e.Describe the Drainage of the area covered by the map 7mks

The main river is R Nzoia

Presence of seasonal swamp

There is mangrove swamp

The main river flows from north east to south west

There are many permanent rivers in the area

There are disappearing rivers

Most rivers form dendritic pattern

There is a pond

There are dams example nyapera dam grid square 4937

Most rivers flow towards south West

7a.i.Define a lake 2mks

 A large body of water contained within a depression / bas/ hollow on the surface of the earth

ii. State reasons why some lakes are salty 4mks

. salts brought in by surface run off, rivers or springs cause high salt concentration.

excessive evaporation due to high temperature leads to formation of salts – pans / salt from the dissolved minerals salts in the lakes.

Absence of outlets both surface and underground to drain away salts hence salt accumulation.

lack of seepage of salt laden waters from the lakes by ssub terranean outlets.

lack of constant inflow of fresh waer river to dilute minerals salts in the lake,

absence of strong winds to remove salt from the lake bed when it dries up

b.Explain the formation of a lake by faulting 6mks

 Earth movement leads to faulting of the crust of the earth such that the rocks are displaced unevenly.

the subsidence of crustal blocks leads to the formation of log narrow and steepsided hollows / depression along the faultline.

later on the depression are filled with groundwater, river flows or rain fall to form Rift Valley lakes e.g. Lake Tanganyika.

In some cases after the depression have been formed due to faulting they may undergo further adjusting and setting and form shallow depression on the floor of the rift valley, such depression are filled with water from rain , rivers or underground to form lake such lakes are faily shallow compared to shoes that form along faultline .e.g Lake Nakuru, Lake Nairvala, L. elementatia.

c.Explain any 4 negative effects of human activitie on lakes 8mks

Deforestation and poor agricultural methods cause soil erosion and eroded soils (sediments)are deposited in lakes leading to siltation of lakes.

Destruction of vegetation in the fresh water catchment area may disturb the hydrological cycle leading to drying up of the lakes or diminishing of the size of lakes.

Draining of agro chemicals into lakes promote growth of weed legume in the lake which cause it to be colonized hence, the lakes shrink.

Disposal of industrial effluents, sewageand other wastes pollutes the lake hence interfering with the aquatic life and therefore the quality of the lake.

damming of rivers for irrigation H>E.P etc may lower the volume of water reaching the lake and this may lead to shrinking of the lake.

Damming of the rivers also blocks the flow of nutrients into lakes thus leading to reduction in food for aquatic life.

 C Identify the significance of lakes 5mks

 Most of the freshwater lakes provide water for domestic and industrial use,

Fresh waterlakes provide water for irrigation in areas where agriculture is practiced e.g. lake Naivasha.

Some of the human made lakes and natural lakes e.g. lake Victoria, water is harnessed for hydroelectric power production.

Some of the lakes provide a cheap means of transporting people and goods e.g in Lake Victoria.

Some of the lakes contain valuable minerals which are exploited by people for econoc gain e.g. lake katwe in Uganda, Lake magadi inkenya and Late Natron in Tanzania contains large reserves of salt and trona.

Some of the lake shore contain valuable sand and pebble which are extracted for building and construction.

Many lakes are habitat to a variety of fish species which are caught to provide food and sold / exported to earn income.

Some of the lakes have fascinating features e.g. flamingoes, hot springs, craters and hopos which which attract tourists hence promotethe tourism industry

8 a.Differentiate between magma and lava**.** 2mks

magma is molten rock materials which originate from the interior of the earth and cools beneath the earth’s surface while lava is molten rock materials that has reached the surface and solidified

.The diagram below shows some festures of vulcanicity



i Identify the features marked C,D and E 3mks

* **C –** lava flow or lava plain/plateau
* **D –** laccolith

 **E –** lopolith

(ii) Give three examples of the feature marked F in Kenya**.** 3mk**s**

* Mt Kenya
* Mt Suswa
* Mt Elgon
* Mt Longonot

b.Describe how a lava plateau is formed 7mks

Are raised part of land made of lava

It is formed through the following process-

Extremely fluid/ultra basic magma reaches the earth’s surface through series of vents and fissures

The lava spreads evenly over a large area

It then cools and solidifies

The subsequent eruption of lava leads to more and more layers building up of the landscape into the plateau

c.Explain the positive significance of vulcanicity to man 10mks

Volcanic features e.g. craters and mountains create beautiful sceneries that attract tourists hence foreign exchange used to develop other sectors of the economy

Volcanic eruption emits lava which are weathered to form fertile soils used for agriculture

Hot springs and geysers are trapped for geothermal energy.

Some lakes formed by volcanicity are used for fishing ground and for production of water for domestic and industrial use

Volcanic mountains are water catchment areas hence source of rivers which produce water for domestic and industrial use

Volcanic eruptions expose minerals e.g. gold hence leading to mining exported to earn foreign exchange.

Volcanic rocks like granite and phonolite are used for building and construction

Volcanic mountains leads to the formation of relief rainfall on the windward side hence supporting agriculture.

Forest growing on the slopes of volcanic mountains produce timber for construction

Hot springs are used as health spurs

9.a What is weathering 2mks

This is breaking down / decay/ disintegration / decomposition of rocks at or near the earth’s surface by physical, chemical processes or biological processes in situ

b.Explain how the following factors affect weathering 6mks

i Nature of parent rock

Dark coloured rocks absorb more heat than light coloured rocks expand and when cooled they contract leading to faster disintegration.

Rocks are composed of different minerals – the mineral expand when heated and contract when cooled at different rates. This unequal expansion and contraction in the rocks leads to disintegration.

ii.plants

Thick vegetation covers slows down the removal of weathered layers of rock thus reduces the rate of weathering.

Vegetation cover protects the rock against physical weathering.

Bacteria facilitate decay of organisms which results in formation of organic acid.

The organics acids from decayed react with minerals in the rock causing chemical weathering.

iii.rock texture

Fine textured rock grains have **large surface area** than coarse textured rocks thus are weathered faster by chemical weathering.

c.Describe how exfoliation process occurs 7mks

It occurs in areas that receive large diurnal range of temperature and on homogeneous rocks

During the day high temperatures causes rocks to expand on the surface

During the night low temperatures causes contraction on the surface of rock layer

The outer layer heats faster and cool faster than the inner layers.

This different rate of expansion and contraction between the surface layer and the inner layers cause stress in the rock.

When this happens repeatedly, cracks appear on the surface layer.

Further expansion and contraction cause enlargement on cracks.

This eventually leads to the surface rock disintegrating, peeling off and leaving behind a rounded off piece of rock called an exfoliation dome

d. suppose you are to carry a field study on weathering

i state three objectives you would formulate for the study 3mks

to find out causes of weathering

to find out types of weathering

to investigate the effects of weathering

ii.Give three methods you would use to record data 3mks

photograph

mapping

field sketching

note taking

iii.identify any problems you are likely to face during the field study 4mks+

loss of direction

fear of attack by wild animals

inadequate drinking water

accidents

10.a i What is glaciation 2mks

Glaciation – the process by which moving ice erodes, transports and deposits moraine on the earth’s surface.

Ii Describe the formation of glacier 7mks

Due to how temperature, waer vapour in the atmosphere freezes to form snow.

the snow falsl and accumulates ont eh mountain tops at higher slopes.

snow continues piling and new layers exert pressure on lower layers.

The lower layers become compressed / compacted as air is expelled out of the spaes between snow particles.

The layers of ice accumulate with time toform a large mass.

the huge mass of ice exert more pressure on the lower layer leading to thawing (melting),

With time, the ice becomes too thick and its lower layers become plastic causing it to flow downwards under the influence of gravity.

The moving ice from a zone of accumulation downslope under the influence of gravity is known as glacier.

b.Explain 3 types of moraine 6mks

 Ground moraine / subglacial morain – composed of rock fragments carried at the base of the glacier.

Lateral moraine – composed of rock fragments carried at the sides of the glacier of the surface.

Medial moraine – composed of rock fragments carried on the surface but at the centre of the glacier forms where 2 valleys meet.

Terminal moraine – rock fragments deposited at the front of the glacier where it melts at the front of the glacier.

C Explain any 3 conditions that lead to glacial deposition 6mks

 Climate change – rising temperature lead to the melting of ice thereby causing the ice to deposit its load.

Gradient / Relief of the land – relatively flat surface reduces velocity of glacial movement which subsequently leads to deposition of the glacial material / moraine.

Friction beneath the ice – friction at the base and the sides of the glacier leads to melting of ice and deposition occurs.

Stagnation / accumulation of glaciers – this leads to pressure at the base of the glacier which in turn lead to melting of ice at the base causing the embedded materials to be released and deposited.

Alternating warm and cold periods – this leads to seasonal melting of ice which allows materials embedded into the ice to be released and deposited.

d. identify 4 positive significance of glaciation 4mks

 Glaciation deposits on the till and outwash plains contains fertile soils suitable for agriculture / arable farming.

Hanging valleys with rivers flowing down of its forms water falls which are harnessed to generate HEP.

Features found on glaciated highlands – eskers, drumlins and lowlands attracts tourists which earn foreign exchange.

Melting glacier and ice are sources of rivers which provide water for domestic and industrial use or irrigation.

Glacial erosion may expose valuable mineral making it easy to mine e.g. Gold, copper, iron in the Canadian shield.

Glacial erosion led to formation of fiords which are suitable sites for construction of habours.

Glacial erosion leads to formation of indented coasts which form sheltered inlets which are good for fishing.

Eskers, kames, outwash plains provide materials sand and gravel for building and construction.

Some glacial lakes in lowland areas are used as a means of transport fishing, industrial and domestic use e.g. great lakes of North America.

Glaciated lowlands are flat ideal for settlement and construction