JINJA JOINT EXAMINATIONS BOARD
U.C.S.E MOCK EXAMINATIONS 2022

GEOGRAPHY P250/1

MARKING GUIDE

GUIDELINES FOR IMPRESSION MARKING

21^{+} Excellent Answers

18-20 = Very good answer

15-17 = Good but not out standing

12-14 = Basic 'A' level answers

9-11 = "O" level answer

1-08 = pudimentary amswer

00 = Completely irrelevant answer

SECTION A MAP WORK

1(a).i. Grid reference is $\overset{4}{3}23\overset{4}{5}63$ (01mk)

ii). The drainage feature is Hot springs (01mk)

b). Reduced sketch map of Kabale by 2 times showing two physiographic region, plantation farm, all weather road choose surface and Bukomi Island.

MI = 04 mks

Features = 05 mks
09mks

c) ii New scale

1: 50,000 x 50%

$\frac{1}{50,000} \times \frac{50}{100}$
$= \frac{50}{50,000,000}$ method 01 mk

= 1:100,000 Answer 01 mk

ii) vertical interval = Difference between any two consecutive contours

e.g 6,700 – 6600 method 01 mrk

= 100feet. Answer 01 mrk

d) Relief of the area.

- ✓ Low lands in the south west
- ✓ Saddles/cols in the North East
- ✓ Ridges in the South East.
- ✓ Narrow valleys in the East.
- ✓ Spurs in the South – East etc. (04mks)

d. (iii) Relationship between relief and communication.

- ✓ Loose surface road on gentle slopes in the North East.
- ✓ Foot paths in the highland area in the East.
- ✓ Steep slopes are avoided by communication routes e.g. in the south –East etc.

2x3 06 mks

Total (25mks)

Compulsory photographic interpretation question

2.(a) A land scape sketch of the photograph showing two physiographic regions, settlements, two vegetation types and a road.

MI = 03mks
RF= 06 mks
Total = 09 mks

b). Accounting for the formation of the landform feature in the middle back ground.

- ✓ Feature should be identified on either, volcanic cone, volcanic plug/ plug dome or volcanic neck/ Iselberg/ residual hill.
- ✓ All the fore going are a result of the main process of volcanicity.
- ✓ The cause or origin – radio activity and convectivity.
- ✓ That resulted in the creation of lines of weaknesses or passages or vents.
- ✓ Through which either viscous magma is intruded or cooling and solidifying in the crust.
- ✓ Weathering and erosion later exposed the intrusion which became more resistant to form an Iselberg or residual hill.
- ✓ lava and ash extruded.
- ✓ Cooling and solidifying on the surface.
- ✓ Denudational process acted on the extrusion forming a cone with a concave upper slopes. /volcanic plug. 1x8 = 8mks

c) Relationship betweenrelief andland use in the area.

- ✓ The highland in the middle –back ground has been used for forestry.
- ✓ Gentle slopes in the middle ground are used for settlement.
- ✓ Gentle slopes in the foreground used for road transport. 3x2= 06 mks

d) Area (s) should include:-

- ✓ Karamoja region – moroto, Kotido, kaabong, pader
- ✓ Nakasongola/luwero areas
- ✓ Tese i.e. Kumi- Soroti region
- ✓ Ankola – Masaka cattle corridor
- ✓ Nyika plateau region.
- ✓ Masai steppe in Tanzania etc

Reasons:

- ✓ Presence of Iselberg /volcanic cone/plug dome/volcanic neck.
- ✓ Settlement on gentle slope/foot hill.

Area 01mk

Reason 01mk
02mks
Total 25mks

SECTION B

3. Examine the relevance of Wegner's theory of conditional drift in explaining the present day position of continents.

- Candidates are expected to define continental drift i.e movement of continental blocks relative to one another across the surface of the earth to their present position to create continents and ocean basins e.g S.American Africa, and oceans like pacific etc.
- Candidates are expected to give the underlying assumption in Wegner's theory of continental drift.
- The theory is based on rifting and drifting off land masses.
- The theory assumes that there was one giant sialic landmass a super continent known a Pangaea located near the present day south pole,surrounded by a huge ocean panthalassa.
- During the pre-Cambrian period (**about 250 MYBP),**the Pangaea began drifting north wards.Pangaea broke into two:laurasia which drifted north wards to form the northern continents and Gondwana land which remained in the south to form the southern continents.

The two were separated by a narrow sea-the Sea of Tethys/universal sea before further drifting into separate continents.

- About 135 MBYP Gondwana land and laurasia drifted north wards.And Tethys sea became closed up in the east laurasia split into Eurasia and America while Gondwana land split into Africa,S.America, India,Australia and Antarctica.

During drifting the oceans between continental blocks became wider forming present day ocean basins.

- In the north, Eurasia drifted east wards while N.America drifted west wards .In the south,Africa moved to attain its present position astride the equator, India drifted north eastwards to join Eurasia,South America drifted west ward and north ward towards the equator to join N.America,Australia drifted east wards away from Antarctica in about 65MYBP.

EVIDENCES
Relevance of the theory

- Jig saw and visual fit-there is a close fitting jig saw puzzle on the continental coast lines across the Atlantic ocean i.e. east coast of south America and west coast of Africa have good visual fit-each fits into another, not only at surface but also at 2000m depth.

- Geometric fit, that the west coastline of Africa and the eastern coastline of south America fit almost exactly on each other if rotated through an angle 0f 57^0 with $40^0$and 30^0W.
- Matching geology/similar rock bearing minerals which look continuous e.g. the gold bearing rocks of W. Africa (Ghana) and S. America (Guyana), the coal baring rocks of Eurasia and North America (Appalachians).
- Similar oil bed-oils bed of Brazil are similar to those of Angola.
- Glacial evidence. Thick deposits at tillite, a fossilized glacial moraine in eastern Brazil, Paraguay and Argentina are exactly like those of Southern Africa and Australia implying that the continents at one time were too close.
- Similar sedimentary basins. Along part of Eastern Brazil coasts, en Nigeria and Cameroon, similar sedimentary rock sequences exist and lower beds of these basins match exactly on both continents.
- Similarities in plant and animal species e.g. in Australia and South Africa, and south America.
- Palaeo magnetic evidence. In India, Australia, South America the magnetized properties in the magnetized rocks no longer point in the North –South direction as it should be suggesting that during the course of drifting rocks were twisted and changed direction.
- Existence of laterites in N. America and Europe proves that these continents experienced tropical climatic conditions for laterites to form.
- Existence of coral reefs in green land Britain, N. America and yet these form in hot climatic conditions.
- Salt evaporates/beds in cold parts of USA, Britain, Germany and Russia yet salt evaporates occur in the tropics.
- Proximity of continental blocks to the North pole than South pole.

Impressional marking (25mks)

Qn. 4 Account for the formation of the East African rift valley.

- As an elongated depression bordered or surrounded by in-facing fault-scarps along less or more parallel faults.
- East African rift valley involves many theories related to radio-active and geo-chemical reactions within the interior of the earth crust----------hence convective currents producing tensional, compressional, horizontal and vertical differential forces causing faulting.
- The major theories include
- Tensional theory by J.W Gregory
- Compressional theory by E.J way land.

Other theories include

- Differential uplift or relatives sinking (subsidence) theory.

- Basin and swell theory

N.B. These theories are linked to concepts of tensional and compressional force.

- Emphasis should be on major theories (tensional and compressional)

Impressional marking (25mks)

Qn. 5 To what extent has relief contributed to the occurrence of landslides in the highlands of east Africa. Approach readout numbers .

1. Candidates are expected to define landslides as sudden and rapid movements of rock and soil debril material along. Slopes under the influence of gravity.
2. They should identify and describe briefly types of landslides e.g.

- **Mudflows :** a plastic and supersaturated mixture of mud, gravel and other unconsolidated material following downslope, common in a rid semi arid and volcanic region of E. Africa.
- **Talus creep**: angularrock desbris of all sizes moving along moderate slopes under wetting and drying conditions.
- **Slumping :** massive impermeable rocks moving over soft, permeable ones, rock /or soil material tearing away from face of a slope (such as a diff, road cutting scarp etc)
- **Rock slides:** large quantities of rocks rolling along steep slopes.
- **Rock falls:** large individual rocks falling over steep slopes.

3. Candidates**:** to give highland, upland, hill areas where landslides are common.

4. Candidatesshould show the extent to which the nature of relief influences landslides.

- **Very steep /vertical** relief encourages rock falls and slides.
- **Dipping /inclined or** steep relief encourages slumping e.g. along cliff faces, road cutting scarps etc.
- **Moderate slopes** favour mud flows and talus creeps.

5. Candidatesto bring out other factors that influence occurrence of landslides in highland areas of East Africa.

Climate

- Mainly rainfall though process like infiltration, soaking saturation, increased weight, reduced friction, loose attachment, their hence landslides like mud flows.
- Temperature through repeated freezing and thawing hence rockfall.

Nature of rock soil materials

- Impermeable rocks involving permeable rocks, encouraged by steep gradient strigger slumping and sliding movements.
- Alternating layers of hard-soft rocks
- Jointing/cracks, looseness of rocks, bedding plan.

Accumulation of debris/overloading on hill sides, encouraged by gradient/ gravity and accelerated by rain causes rock sides, or rock fall.

Earthquakes causes vibrations that affect overhanging rocks over accumulated debris aided by climate to fall as rock fall slides.

Volcanic eruptions: causes massive hurting of debris up/down wards, also yields volcanic ash and lava which ounce soaked flows as mudflows.

Lack of vegetation cover caused by over grazing /stocking, poor farming methods, expose surface soils, which become loose and unconsolidated hence prone to landslides.

Human activities: such as hill grazing, cultivation, quarrying produces overhanging cliffs, road construction creates embankments moving vehicles cause vibration, all of which encourage landslides.

Biotric factors like burrowing organisms make holes and improve water infiltration.

6. candidates to conclude that relief is NOT only factor but interacts with others.

Impressional making - content 23

Eval 02 (25mks)

6(a). SECTION C

1. Distinguish between absolute humidity and relative humidity.

- Absolute humidity refers to the actual amount of water vapour present in a given quantity of air at a given time.
- It is expressed in grammes per cubic metre.
- It varies according to temperature and pressure. (03mks)
- Relative humidity is the actual amount of water vapour present in a given volume of air.

- It is expressed as a percentage or ration of the maximum it could contain when saturated.
- It depends on temperature and pressure and Mombasa. (03mks)
- Rock pillar stack near Entebbe air Port etc.

NB. Relevant illustrations must accompany the above explanation.

b) Account for the variation in humidity in East Africa.

Temperature : High temps encourage high rates of evapouration leading to high humidity, while low temps lead to low rates of evapouration leading to low humidity.

Consequently area with high temps like around the equator in L.Victoria basin have high humidity while areas with low temp like high land areas have low humidity.

Water bodies: These are sources of water vapour consequently area with water bodies have high humidity, while area with limited water bodies or far away from water bodies have low humidity.

Altitude: There is high humidity at low altitude and low humidity at high altitude. There is high humidity at lower altitude because of being near sources of water vapour and also because water vapour molecules are pulled down wards by gravity.

Vegetation cover: areas with thick vegetation cover tend to have high humidity. This is because thick vegetation cover encourages evapo-transpiration leading to a lot of water vapour in the atmosphere.

Areas with scanty vegetation like semi-Arid and arid areas have low humidity because of a limited evapo-transpiration.

Air masses /winds: winds have the ability to transport water vapour from one area to another thus influencing amount of water vapour in a given place e.g. South East trade winds pick a lot of water vapour from Indian Ocean leading to high humidity in the coastal East Africa.

- The Westerlies winds from Congo forest a lot of humidity in some parts of western uganda.
- North East trade winds originate from dry areas leading to low humidity in Northern Kenya and Karamonja region.

Ocean currents: areas with warm ocean currents like East African coast effected by warm Monzambique ocean current have high humidity because of high evaporation while areas with cold ocean currents have low humidity.

Human activities: Human activities like deforestation, swamp reclamation, sinking boreholes, burning grass etc reduce evaporation and evapo-transpiration leading to low humidity in an area. Mans activities like afforestation, re-afforestation increase humidity in an area.

Continentality /Distance from the sea is source of water vapour while area far away from the sea have low humidity.

Seasonal weather changes or ITCZ when the sun is overhead in a certain area, there are high temps resulting into high evapouration. High humidity.

The high temps lead to low pressure resulting into being a zone of convergence (ITCZ) and which that converge to such an area bring humidity from their source, leading to high humidity.

Impressional 19mks
Making (25mks)

7(a). Describe the characteristics of Equatorial forests

- Tall trees over 60m
- Variety of hard wood trees species e.g. mahogany, Red wood, Muvule etc.
- Three layers of canopy.
- Buttress roots
- Limited under growth where the canopy in thick.
- Ever green forests with trees shading their leave at different time.
- Numerous climbing trees /lianas
- Braod lean trees
- Mixed stands.

Impressional marking (10mks)

b). Account for the growth of equatorial forest in East Africa.

- Identify area in East Africa where Equatorial rain forests are found i.e. shores of L. Victoria (Mabira), Budongo, Bugoma in Bunyoro, coastal area of E.Africa etc. preferably map may be drawn.
- Conditions favouring the growth.
- Climate equatorial forest grow well in areas receiving 1500mm of Rainfall well distributed all year.
- Hot warm temps all year (27^0c)
- High humidity helps to reduce evapourate/transpiration 80%

Altitude : Equatorial forests do well in areas of low altitude of less than 2000m asl.

Soils: Equatorial forests are found in area with Deep, fertile soils.

Drainage equatorial forests growwell in well drainage area. Water logged soils intend to promote the growth of river line trees and mangrove forests.

Human activities: man through his activities e.g. gazetting of forest reserves, natural reserve and natural parks have enabled the growth and maintenance of Equatorial forest.

15mks
Total (25mks)

Qn. 8. To what extent has relief influenced the process of soil formation in East Africa.

- Soil formation is a result of a combination of process. They are connected and inter-dependent i.e.
    - Relief
    - Parent rock
    - Climate
    - Living organisms
    - Time
- The influence of relief on soil formation can be seen through the variation in steepness of the slope over which soils are formed e.g.
    - Very steep slopes have thin, skeletal soils
    - Steep slopes have thin solids
    - Gental slopes and valleys have deep solids.
    - Other factors
    - Nature of parent rock
    - Climate
    - Biotic factors
    - Time etc.

Impressional marking
Evaluation 02 mrks
Content 23mks
TOTAL 25mrks

END