FORM 3 GEOGRAPHY PAPER 1

MARKING SCHEME

1.a. Forces that influence the shapes of the earth.
- Force of gravity
- Centripetal force
- Centrifugal force (3x1=3 mks)

b. Proofs the show that the earth is spherical.
- Photographs taken from the outer space /satellites shows that the earth is spherical.
- During the lunar eclipse, the earth casts a spherical shaped shadow on the moon.
- All parents in the solar system are spherical therefore the earth being one of the planets on the solar system is also spherical.
- Circumnavigation of the earth along a straight path while maintaining one direction will bring back to the same starting point from the opposite direction.
- The earths horizon when viewed from a very high tower or in an aeroplane always appears curved.

(3x1 =3mks)

2. a. A rock – is an aggregate of mineral particles forming the solid part of the earth. While
A mineral is an inorganic substance which occur naturally at or beneath the surface of the earth

b.

ROCK	METARMOPHIC ROCK
Granite	anells
Limestone	Marble
Shale	Schist/slate

(3x1=3 mks)

3. a. Difference in time from 2.00 pm to 11.00 am = 3 hrs.
In 1 hr, the earth rotates through 15^o
Therefore in 3 hrs the earth will rotate through $3x15^o = 45^o$
Time at M is behind that at 30^o E
Get the difference between the angles
$= 45^o – 30^o = 15^o$
M is at longitude 15^oW. (3 mks)

b. Effects of the International date
- On crossing this longitude while going to the west a day is lost.
- If you cross it going to the East a day is gained. (1 mk)

4. a. Mass wasting.
This is the creeping, flowing, sliding or falling of weathered rocks down the slope under the influence of gravitational force. (2 mks)

b. Factors that influence the rate of mass wasting.
- Amount of water in the weathered material.
- Nature of the weathered material.
- Gradient of the slope.
- Presence of vegetation cover.
- Human activities eg. mining and construction.
- Tectonic movements may trigger earth quakes causing vibration of the earth's surface hence some materials move down slope.
- Climatic conditions especially rainfall and temperature. (3x1=3 mks)

5. a. Vulcanicity – This refers to all the processes by which solids, liquids, molten and gaseous

Materials are forced into the earth's crust or ejected onto its surface.

b. Intrusive land forms:
- Batholith
- Laccolith
- Dykes
- Asill
- Lopolith
- Phacolith (2x1=2mks)

Extrusive landforms
- Volcanoes
- Basalt lava domes or shield dones
- Acid lava cones
- Composite volcanoes
- Ash and under cones
- Plug dome volcano
- Volcanic plug (2x1=2 mks)

MAPWORK

6. a. i. Topographical map. (1 mk)

ii. 1:50,000

1 cm rep. 0.5 km (2 mks)

iii. Marginal information.
- Map series
- Sheet number
- Sheet editor
- Map name
- Grind system numbers
- Latitudes /longitudes
- Compass direction

(any 4x1=4 mks)

b.i. Citing evidence from the map (social functions).
- Educational since there is a school ie. Gaikkuyu school
- Trading since there is market ie Giakagina mkt.
- Transportation since there is a road.
- Administrative since there is a chiefs office.
- Agriculture since there is coffee factory and tea centre.
- Religions centre evidence churches. (NB. No evidence no mark)

ii. human made features
- Road
- Shops
- Cattle dips
- Coffee factory
- Tea centres (any 3x1=3 mks)

c. i. Economic activities carried out in the area covered by the map.
- Transport – all weather road/dry weather road.
- Trade – shops/markets
- Crop farming – coffee factory (No evidence no mark) (3x1=3 mks)

d.i. Drainage of the area covered by the map.
- Dam present
- There are permanent rivers.
- Rivers flow from North to South.
- There are many permanent rivers. (4x1=4 mks)

ii. Two types of vegetation found in the area covered by the map.
- Forest

- Papynes swamp (2x1=2 mks)

7. a. i. Normal reverse.
Tear, sheer or slip
Thrust
Anticlinal (3 mks)

ii. Tensional forces - causes movement of landmasses away from one another.
They pull landmasses apart resulting into tearing. (2 mks)
Shear forces - causes the movement of land masses alongside one another along a crack
Line of weakness.
The mass of land move in opposite directions. (2 mks)

b. Lines of weakness occur reverse faults.
The outer blocks are pushed over the middle blocks leaving it to form the plain of
Rift valley.
The over logging sides caused to reverse fault collapse. (4mks – txt – 4 mks diagrams)

c. Significant of faulting
Disjointing of land to disruption of communication lines, water sewage etc.
Sinking of land lead to loss of property and life ie. agricultural farm.
Vertical faulting across a river may cause waterfall which may be used to generate H.E.P project.
Hot springs and geysers like hot springs attract tourist who bring in foreign exchange.
Hot spring and geysers associated to faulting can unharnessed for geothermal power. (10 mks)

8. a. Title (1 mk)
Labeling (1 mk)
Bans (3 mks)
Total (5 mks)

b. The bars are virified
The bars starts from zero
They are drawn side by side
Have a title
Have uniform width. (4x1=4 mks)

c. i. Mean of the temperature
Add then divide by 12
-22+-19+-12+-1+4+10+11+11+5+-11+-18+-20 =

ii. Characteristics of climate in the station
- Animal range of temp. is very large.
- The coldest month is January.
- Highest rainfall occurs when temperature is high.
- The total annual rainfall is low 319 mm.
- The months of March and February records the lowest rainfall.
- Hottest month is July and August.
- Region experience rainfall through the year.

d.i. Methods used to record the data
- note taking -filling in questionnaires
- tallying - drawing
- tabulation - tape recording (2x1=2 mks)

ii. Problems experienced during the study.

- Lack of cooperation from potential respondents.
- Poor weather conditions.
- Incorrect information from the respondents. (3x1=3 mks)

9. a. Three types of physical weathering.

- Exfoliation
- Block disingegration
- Granular disintegration

b. i. Climate

- Topography
- Chemical composition of the rock
- Rock structure
- Rock texture
- Biological organisms (6x1 = 6 mks)

ii. Action by plants

- Roots of plants penetrate grow into joints or cracks.
- As the trees grow bigger, the root also grow bigger widening the joints and cracks.
- Blocks separate in what is called wedging mechanism. (3 mks)

Action of animals

- Burrowing animals such as moley rabbits, Earth worms break off small bits of rocks from the main rock 1.
- By digging these animals expose a large surface area to other weathered processes 1.
- Large herds of cattle and Zebras' bound the rock with there hooves as they move breaking them into smaller particles. (any 3x1=3 mks)

c.i. Five types of chemical weathering

- Solution 1
- Carbonation 1
- Hydrolysis 1
- Hydration 1
- Oxidation 1 (5x1=5 mks)

ii. Significance of weathering to human activities

- Weathering weakens rocks making them easier for man to quarry or mine 2.
- Some rocks form through weathering eg. Granite tors are conspicuous thus attacking tourists 2.
- Weathering produces clay which is used in making bricks. Bricks are used for building houses 2.
- Weathering leads to the formation of fertile soils which enhances agriculture 2.

(Any 4x2=8 mks)

10. a. What is aridity. (2 mks)

It is a state of continous deficiency of moisture in the ground leading to scant/little vegetation.

b. What is desertification. (2 mks)

It is a process of slow but steady encronchment of desert like conditions to large areas Leading to barrenness.

c. State the causes of aridity and desertification.

- Insufficient rainfall
- High temperatures
- Location of leeward sides of the mountains
- Presence of cold ocean currents on adjacent coasts.
- Location of places very far away from the coast.
- Presence of stable high pressure systems with low humidity.
- Man's destruction of vegetation. (any 5x1=5 mks)

d.i. Explain the effects of aridity and desertification.

- Desertification leads to loss of soil fertility leading to a decrease in crop production.
- Reduced food production can lead to famine in the affected areas.
- Desertification leads to destruction of water catchment areas/insufficient supplies of water for domestic use.
- Drying up of vegetation due to desertification leads to exposure of land to agents of erosion.
- Desertification may trigger migration from the affected areas due to drought and decreasing food production.
- Aridity and desertification can lead to extinction of some plants and animal species.

(any 5x2=10 mks)

ii. Suggest possible solutions to aridity and desertification.

- Enacting law that curbs production.
- Embarking of reafforestation and afforestation programmes.
- Taking soil erosion control measures ie. building gabions.
- Introducing modern farming methods which can renew soil fertility. (any 3x2=6 mks)