

KANDARA SUB- COUNTY FORM 3 JOINT EVALUATION

GEOGRAPHY

Paper 1

Oct/Nov. 2015

MARKING SCHEME

1. a) Theories of the origin of the solar system

- the passing star theory
- Nebula cloud theory
- creation theory

Any 3 x 1 = 3mks

b) Reasons why the interior of the earth is hot

- the interior cooled at slower rate than the outer part during the formation of the earth
- weight of crustal rock exerts pressure which generate heat
- radioactive reactions which generate heat

Any 2 x 1 = 2mks

2. a) Factors for sitting a weather station

- there should be open space and away from obstacles
- the ground should be level / gently sloping or relatively flat
- it should be free from flooding
- the area should have a wide view
- the area should be secure / fenced

1 x 3 = 3mks

b) Weather measuring instruments

- maximum and minimum thermometer (sixths thermometer)
- wet and dry bulb thermometer (hygrometer)

Any 2 x 1 = 2mks

3. a) Reasons why Tundra has scanty vegetation

- the region has thin soils
- poorly drained
- frozen most of the year
- short growing season i.e. short summer
- little rainfall

Any 3 x 1 = 3mks

b) Temperate grassland

- H - pampas
 - J - Steppes
 - K - Downs
- any 3 x 1 = 3mks*

4. a) State two ways in which lakes influence climate

- high evaporation leads to high humidity
- high evaporation leads to convectional rainfall

- lake and land breezes moderate temperatures of the surrounding land

Any 2 x 1 = 2mks

b) Reasons why lakes have fresh water

- situated in areas with high rainfall
- have surface outlet
- situated in areas of low temperature
- some have underground outlet
- regular inflow of fresh water

Any 3 x 1 = 3mks

5. a) Glacial erosional processes

- plucking
- abrasion

Any 2 x 1 = 2mks

b) Glacial highland erosional features

- cirque
- aretes
- pyramidal peaks
- glacial troughs
- hanging valleys

Any 2 x 1 = 2mks

6. a) i) Statement scale

1 : 50000

1cm rep 50000cm

1cm represent 0.5km

2mks

ii) 18cm on the map

18cm x 0.5 = 9km

9km \pm 0.5km

2mks

iii) Area = full square 23

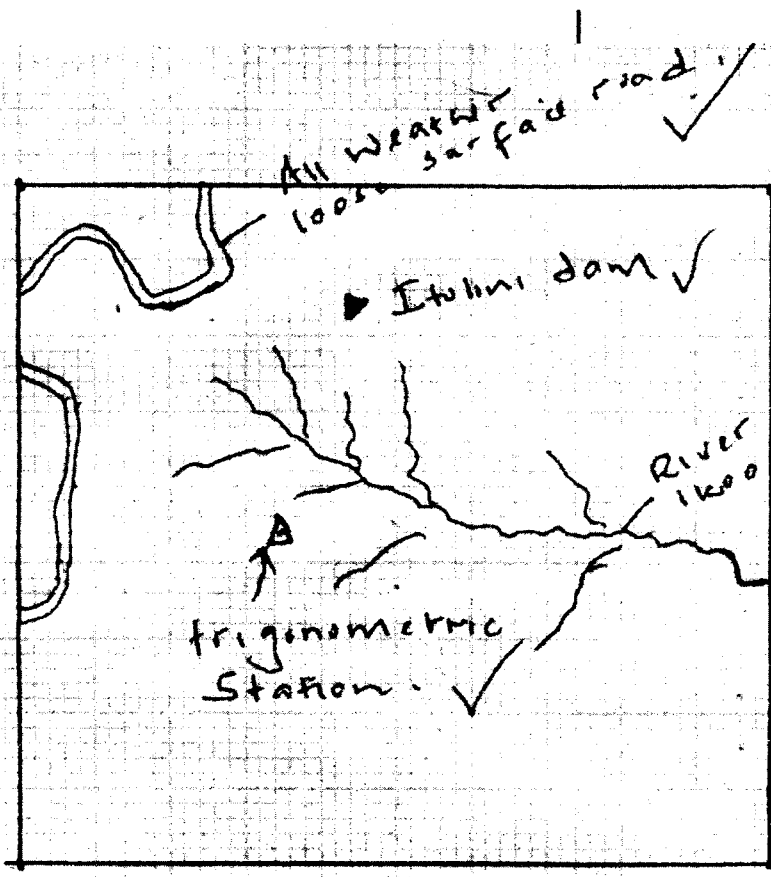
Half square $\frac{16}{2} = 8$

23 + 8 = 31

31 x 1km² = 31km²

2mks

iv) Bearing 062° *2mks*



correct triangle 1mk
 correct marking & labelling 1mk
 each

Total 5mks

c) Drainage of the area

- major drainage features are rivers
 - there are many rivers all over the map
 - river flows towards South and South East direction
 - most rivers forms dendritic drainage patterns e.g. R. Ikoo
 - other drainage features are dams at 9078, boreholes at 0769
- Any 4 x 1 = 4mks

d) Natural vegetation

- scrubs
 - scattered trees
 - forests
- Any 3 x 1 = 3mks

e) Economic activities

- transport suggest by road network
 - communication shown by post offices
 - trade - shops and markets
 - lumbering - Mutito forest
 - livestock keeping - boreholes / dams
- Any 4 x 1 = 4mks

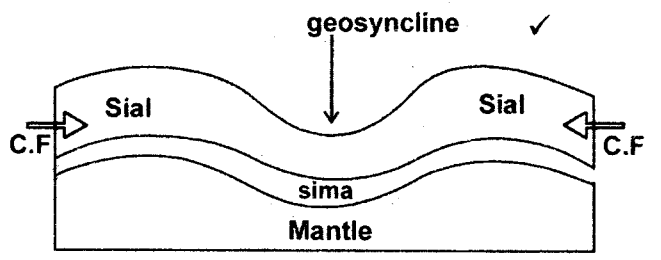
7. a) Definition of folding

- the process which young rocks bend due to compressional forces / earth movements
 1 x 2 = 2mks

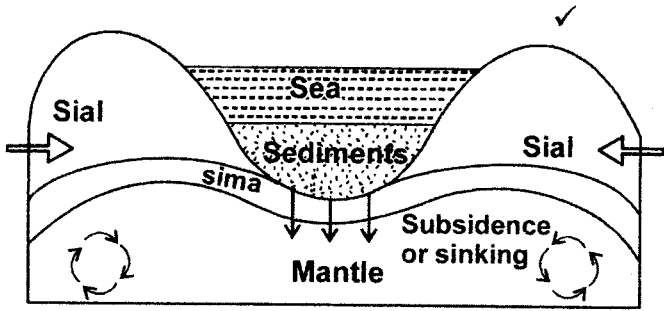
ii) Types of folds

- simple symmetrical folds
 - asymmetrical folds
 - overfolds
 - isoclinal folds
 - recumbent folds
 - overthrust folds / napple
 - anticlinorium and synclinorium
- Any 4 x 1 = 5mks

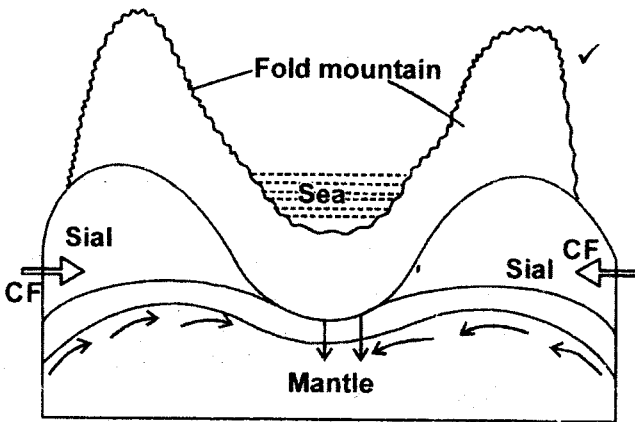
b) Formation of fold mountains



- a huge depression called geosyncline is formed ✓



- erosion occurs on the surrounding highland areas depositing sediments and water into the geosyncline ✓
- the weight of the causes the geosyncline to subside or sink ✓
- the subsidence of geosyncline triggers convectional currents or compressional forces in the continental rocks ✓



- the sediments are compressed or folded to form fold mountains ✓

diagrams 3mks

explanation 5mks

Total 8mks

ii) Other folding features

- escarpment
- rolling plains
- synclinal valley
- ridge and valley landscape
- inter-monte plateaus
- inter-monte basins

Any 3 x 1 = 3mks

c) Positive effects of folding

- fold mountains are tourist attraction bringing foreign exchange ✓✓
- during folding minerals are brought closer to the surface ✓✓ making their mining easier
- fold mountains receives high rainfall on windward side which support agriculture and settlement ✓✓
- fold mountains are sources of rivers which provide water for domestic and industrial uses, HEP

- fold mountains are heavily forested ✓✓ providing timber for building and construction

Any 4 x 2 = 8mks

Features must be mentioned to score

8. a) i) Weathering is breakdown or decomposition of rocks (insitu) while mass wasting is downward movement of weathered materials under the influence of gravity

1 x 2 = 2mks

ii) Factors that influence weathering

- nature of rocks
- climate
- topography
- vegetation
- time
- slope
- human activities and animals

Any 3 x 1 = 3mks

b) i) Block disintegration

- joined rocks or rocks made up of huge blocks ✓ expand on heating and contract on cooling ✓
- with time such rocks breaks into large blocks along the joints ✓

correct explanation (3mks)

Crystal growth

- rain water leaches minerals from upper layer to lower layers
- during the dry season, high evaporation causes loss of water which carries dissolved mineral to the surface
- when water evaporates, minerals are left occupying the joints / spaces within the rock
- with time minerals accumulated or crystallises in these spaces, causing stress within the rock which leads to breaking up of the rock

correct explanation (3mks)

ii) Carbonation

- rain water mixes with carbon dioxide in the air to form weak carbonic acid ✓
- the weak acid react with calcium carbonate rocks / limestone to form soluble calcium bicarbonate rock ✓
- the soluble rock is easily dissolved leaving behind a weak rock ✓
- the weak rock weathers easily ✓

correct explanation (4mks)

Hydration

- some minerals in rocks absorb water
 - they become soft and break ✓
 - other minerals absorb water ✓ expands these creating internal stress in the rocks causing it to disintegrate ✓
- correct explanation 3mks**

c) i) Types of slow mass wasting

- soil creep
 - rock creep
 - Talus creep
 - solifluction
- Any 3 x 1 = 3mks**

ii) a) Methods of collecting the data

- observation
 - photographs / videos
- Any 2 x 1 = 2mks**

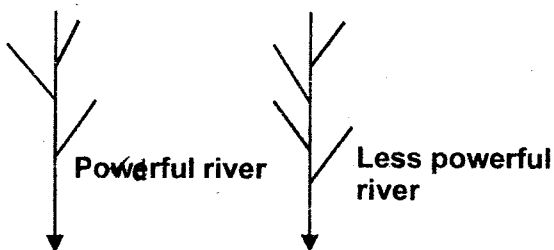
b) Problems likely to be faced

- steep slope to climb
 - injured by falling rock etc.,
 - difficult to walk on areas covered by mudflow and earth flows
 - dangers of landslides and avalanches
- any 2 x 1 = 2mks**

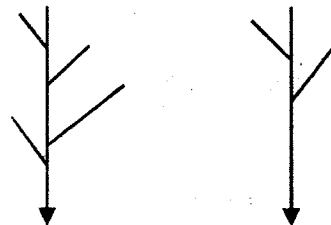
9. a) i) Its the renewal of a rivers erosive activity **2mks**

- ii) - local uplift of land
- increase in discharge
 - pressure of hard rock outcrop
 - presence of a lake in course of a river
 - lowering of the sea level
- Any 3 x 1 = 3mks**

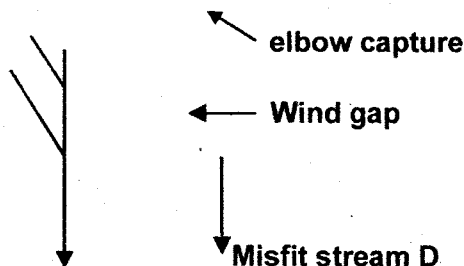
- b) - two rivers flow adjacent to one another ✓T
- the powerful river should be flowing on a lower level than the less ✓T powerful



The powerful river should be more active through headward erosion than the less powerful river ✓T



Headward erosion completes the river capture ✓T



Text 4mks
Diagram 4mks
8mks

c) Hydraulic action

- water is forced into cracks on the river banks / water hits the banks
 - air in the crack is compressed
 - compressed air creates pressure which widens cracks
 - as the water retreats, pressure in the cracks is suddenly released
 - the compression and widening of the cracks repeatedly
 - the retreating water carries away the loose particles
 - the force of the moving water and the eddying effect. Sweep away loose materials in the river channels
- 4mks**

Corrasion

- river water carries eroded materials of sand gravel and boulders
 - the load is used as a tool for scouring
 - the load is hurled by the river water against the banks and dragged along the river bed
 - the load chips off rock on the bank and the floor (size of load determines the rate of erosion)
 - the load being dragged smoothens the river bed
 - eddy currents rotate rock particles in hollow sand widen them into potholes
- max 3mks**

- d) i) - formulation of hypotheses / objectives
 - seeking permission from school authorities
 - carrying out a reconnaissance
 - prepare working schedule
 - assemble equipment
 - divide into groups
Any 3 x 1 = 3mks

- ii) - Waterfalls / rapids / cataracts
 - pot holes
 - interlocking spurs
 - V-shaped valleys
Any 3 x 1 = 3mks

10. a) i) Types of desert surfaces

- sandy
 - stony
 - rocky
 - badland
- Any 3 x 1 = 3mks**

ii) Processes through which transport its load

- saltation
 - suspension
 - surface creep
- Any 3 x 1 = 3mks**

b) Formation of Rock pedestals

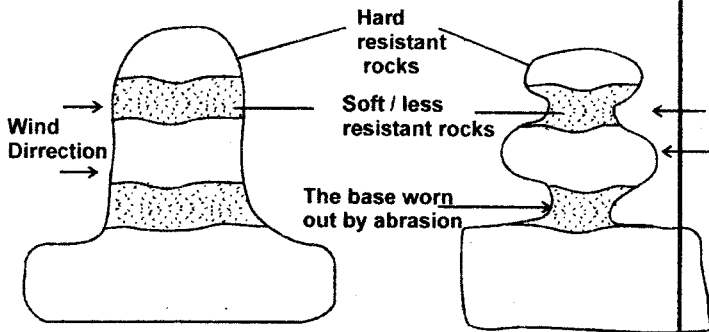
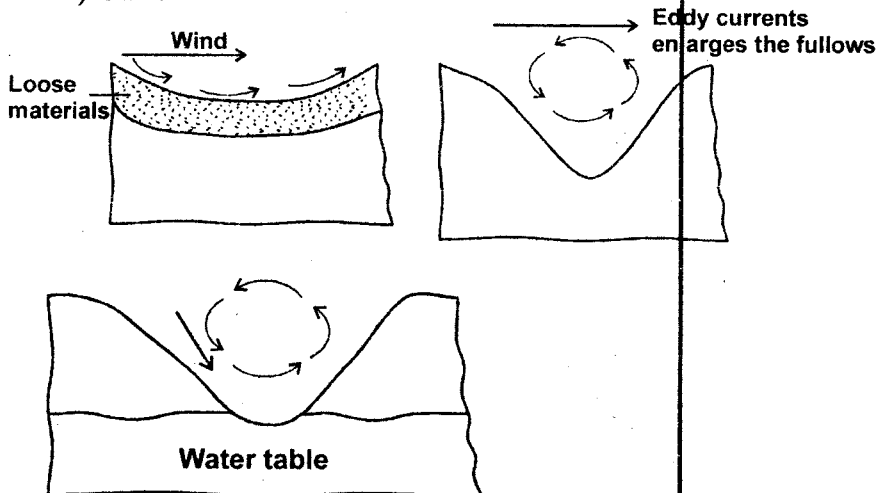


Diagram 2mks, explanation 1mk

ii) Oasis



where water tables is exposed, water accumulate to form an oasis

diagram 3mks
explanation 1mk

iii) Other erosional features

- Zeugens
 - mushroom blocks
 - yardangs
 - milled seed or sand grains
 - ventifacts
- Any 2 x 1 = 2mks**

c) Factors encouraging wind deposition

- obstacles on the path of the wind
 - low strength / speed of the wind
 - large amount of load
- Any 3 x 1 = 3mks**

d) Positive significance of desert features

- oasis provides water for irrigation etc.
 - yardangs rock pedestals etc attract tourists who bring foreign exchange
 - loess when deposited in wet areas forms fertile soils for agriculture
 - salts from playas / salina harvested for domestic / commercial use
 - sand in sandy desert used in building
- Any 3 x 2 = 6mks**