GOLDEN ELITE EXAMINTIONS 2020

312/1
GEOGRAPHY
PAPER 1
MARKING SCHEME

SECTION A
Answer ALL questions in this section.
Question1.
(a) Weather is the condition of the atmosphere of a given place over a given period of time/ shot period of time.   *(3 marks)*
(b) *Five factors considered when siting a weather station.*
✓ Secure place; should be sited in a secure place to avoid vandalism and theft.
✓ The site should be away from obstruction (e.g. buildings, vegetation).
✓ The site should be relatively flat and free from flooding.
✓ The site should be in an open space where there's free flow of air.
✓ The site should have a wide view of surrounding landscape and sky.
Question2.
(a) *Ways that make it possible for geographers to study the earth's interior.*
✓ By studying seismic shock waves
✓ Through study of volcanic lava flows
✓ Through study of rocks on the moon and meteorites
✓ Through very deep mining drilling.   *(1 x 2 = 2mks) any 2 points*
(b) *Changes that may occur in a rock after it has undergone metamorphism*
✓ New minerals are formed
✓ Rocks change in hardness
✓ The rock change in physical appearance
✓ Rock particles become compacted
✓ Minerals recrystalise further.   *(1 x 3 = 3mks)*
Question3.
(a) *Differentiate between folding and faulting.*
✓ *Folding* is the bending of crustal rocks due to earth movements while
   Faulting is the breaking / fracturing of crustal rocks due to tectonic forces.
(b) *4 orogenesis periods in fold mountains formation*.
✓ Charnianorogeny: e.g. African block, Laurentian shield, Russian platform & Deccan Plateau.
✓ Caledonian Orogeny: e.g. Akwapim hills, Scottish Highlands
✓ Hercynian Orogeny: e.g. Cape ranges, Appalachian Mtns, Ural
✓ Alpine Orogeny: e.g. Atlas, Alps, Himalayas, Rockies & Andes Mountains. *(1 x 4= 4mks)*
Question4.
(a) *Differentiate between a spring and a well.*
✓ *A spring* is a place on the surface of the earth where underground water flows out onto the surface while
✓ *A well* is a relatively deep hole in the ground which is dug by people for the purpose of getting water.
                                                         (1 x 2 = 2mks)
(b) *Ways by which springs develop.*
✓ When a permeable rock lies on top of an impermeable rock.
✓ When the hilly country rocks are well jointed.
✓ When a dyke acts as a dam
✓ When limestone rocks (escarpments) overlie impermeable rocks.
✓ When gently sloping layers of permeable rock alternate with layers of impermeable rock.
                                                         Any 3 (1 x 3 = 3mks)
Question5.

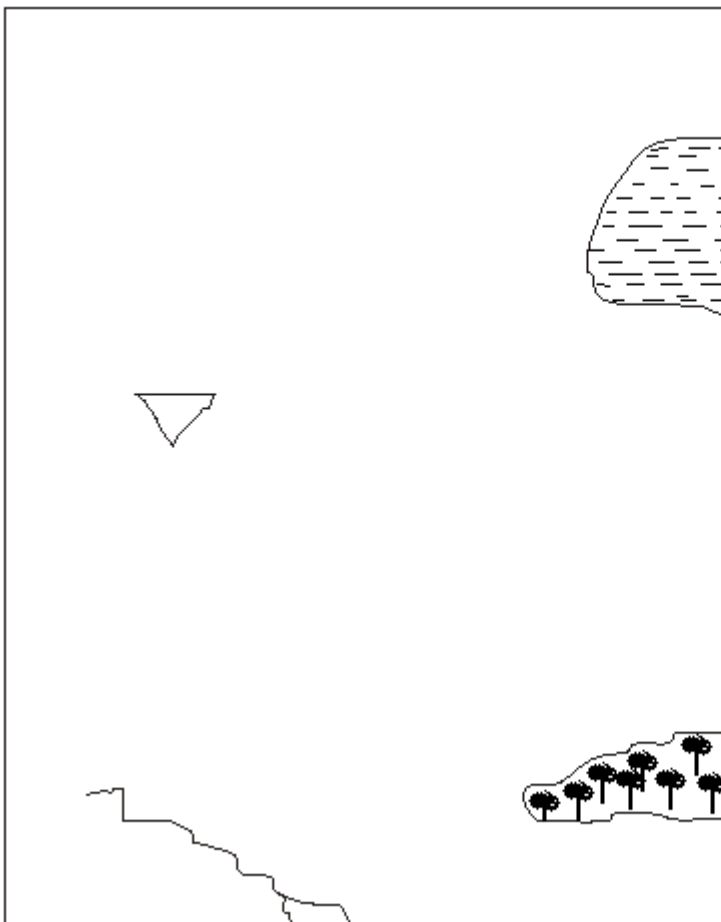(a) *Two ways in which mulching improves soil.*
✓ Enhancing infiltration / reduce run off.
✓ Protect soil against splash erosion
✓ Enable soil to regain fertility / add humus to soil
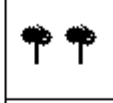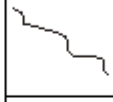✓ Enable moisture retention / reduces excess evaporation. *Any 2 pints (1 x 2 = 2mks)*

SECTION B

Question 6
(a) (i) 21km^2 *2marks*
    (ii) 6.2 km   *2marks*   4fig (1mk)
    (iii) 517 388   *2marks*   6fig (1mk)
    (iv)

Key

Lake victoria

kanyambala forest

River ogongo

Secondary trigonometric station

F - 1
L - 1
R - 1
Fr - 1
sT - 1
_____
5 Marks

(b) *Using evidence from the map, state three functions of Homabay town*

Function	Evidence
✓ Industrial centre	Ginnery
✓ Health centre	Hospital
✓ Educational centre	Schools/ nursing training, farmers training centre
✓ Transport centre	Roads / Pier
✓ Communication centre	Post office
✓ Trading centre	Market *Any 3 (3x1=3mks)*

NB: The point should be qualified (evidence) to earn a mark

(c) (i) *3 types of vegetation*
- Forests
- Papyrus swamp
- Scrub   *(3 marks)*

(ii) *Settlement patterns*
- Linear
- Nucleated
- Dispersal   *(3 marks)*

(d) *Describe the relief of the area covered by the map.*
✓ The area between Easting 51 and 54 is hilly as indicated by the presence of Ruri Hills
✓ The West of the area covered by the map is flat as indicated by widely spaced contour.
✓ There are rivers valleys around Ruri Hills
✓ Around Olambwe East the region is very steep as indicated by dense contours.
✓ The land is plainsland around Olambwe Valley national reserve.*(1 x 5 = 5mks)*

Question 7
(a) *Definition of vulcanicity*
✓ It's the processes through which solids, liquids, gaseous and molten materials are forced out of the earth's interior or are intruded into the earth's crust*. (1x2 = 2 marks)*

(b) *Four characteristics of a composite volcano.*
✓ Has vertical vent / pipe/ fissure
✓ Composed of alternating layers of ash / lava
✓ Its conical in shape / steep sided
✓ Has side vents
✓ Its made up of acidic lava / viscous lava
✓ Has conelets / parasitic cones
✓ At the summit, it may have caldera / crater / plug.   *(4 x 1 = 4mks)*

(c) *How a lava plateau is formed.*
✓ Formed when magma reaches the earth's surface through fissures / vents
✓ Lava is ultra basic / low intensity
✓ Lava flows over a long distance spreading over a large area before cooling.
✓ Lava cools slowly forming an extensive lava platform bounded by steep slopes.*(4 x 1 = 4mks)*

(d) *Four negative effects of vulcanicity.*
✓ Volcanic eruptions can result in loss of lives
✓ Volcanic eruptions can destroy property
✓ Weathered volcanic rocks / materials e.g. ashes and granite can result in infertile soils.
✓ Volcanic features like mountains create barriers to transport and communication
✓ The rugged nature of volcanic landscape discourages economic activities e.g. agriculture and settlement.
✓ Volcanic eruptions produce poisonous gases e.g. sulphur Co_2 which pollute the environment / threaten human life.
✓ Volcanic mountains create a rain shadow effect which discourage farming activities
✓ Recent lava flows have immature soils which are not suitable for farming.

- ✓ Volcanic eruptions and related hazards cause panic and affect people psychologically / inhibit development.
- ✓ Dust particles from volcanic eruptions absorb and scatter solar energy, lowering global temperatures; resulting to health problems to man.
- ✓ Volcanic eruptions may cover / burry minerals making mining difficulty and expensive.

(4x2 = 8 marks)

(e) (i) *Four sources of information that you would use in the preparation for the study*
- ✓ Written materials / magazines/ newspapers / text books
- ✓ Maps
- ✓ Photographs / films
- ✓ Resource persons
- ✓ Electronic media e.g. T.V / radio *(4 x 1 = 4mks)*

(ii) *Three factors that would make it difficult for you to collect accurate data during the field study.*
- ✓ Fear of eruptions
- ✓ Inaccessibility of some areas due to piled up lava
- ✓ Inadequate information because people have been evacuated
- ✓ There may be restrictions to access the area. *(3 x 1 = 3mks)*

Question 8
(a) Three agents of weathering
- ✓ Heat / temperature
- ✓ Water / rainfall / moisture
- ✓ Plants
- ✓ Animals
- ✓ Man
- ✓ Wind *(3 x 1 = 3mks)*

(b) Frost action as a process of weathering.
- ✓ Occurs where temperatures are within the freezing point
- ✓ When temperatures rise, snow melt and water enters the crack in the rock
- ✓ When temperatures drop, the water freezes, expands and widens the cracks
- ✓ Continued process of freezing and thawing lead to break up of rocks.*(4 x 1 = 4mks)*

(c) *Explain how an exfoliation done is formed.*
- ✓ High temperatures during the day causes rocks to expand
- ✓ At night temperatures are low hence rocks contract
- ✓ Repeated expansion and contraction cause stress on the rocks hence cracks develop.
- ✓ Eventually, the outer layer peels off leading to rounded mass of rock known as exfoliation dome.
- ✓ Further wind action may smoothen the surfaces.

(5 x 1 = 5mks)

(d) *3 factors that influence the rate of mass wasting.*
- ✓ Steep slopes increase the rate of mass wasting
- ✓ The heavier the material, the faster the movement of the material
- ✓ The higher the rainfall the faster the movement of the material
- ✓ Bare surface increase the rate of the movement of the material

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- ✓ Earth movements trigger movement of materials
- ✓ Human activities e.g. mining / farming / construction accelerate the rate of materials movement.

(3 x 2 = 6mks)

(e) *Four slow types of mass wasting.*
- ✓ Soil creep
- ✓ Talus creep
- ✓ Solifluction
- ✓ Scree creep
- ✓ Rock creep   *(4 x 1 = 4mks)*

(f) *Three positive effects of mass wasting.*
- ✓ Create scenery that attract tourists for foreign exchange
- ✓ It facilitates deposition of rich soils for agriculture in the low lands
- ✓ Landslides create barriers across river courses / valley leading to formation of lakes.
- ✓ It causes slope retreat encouraging human activities   *(3 x 1 = 3mks)*

Question 9

(a) (i) *Three factors that influence transportation of materials in the sea.*
- ✓ Ocean currents
- ✓ Tidal currents
- ✓ Strength of waves
- ✓ Nature of materials
- ✓ Depth of water
- ✓ Slope of the coast / shore
- ✓ alignment of the coast   *Any 3 x 1 = 3 mks*

(ii) A simple well labeled diagram of a sea wave.   *3marks*
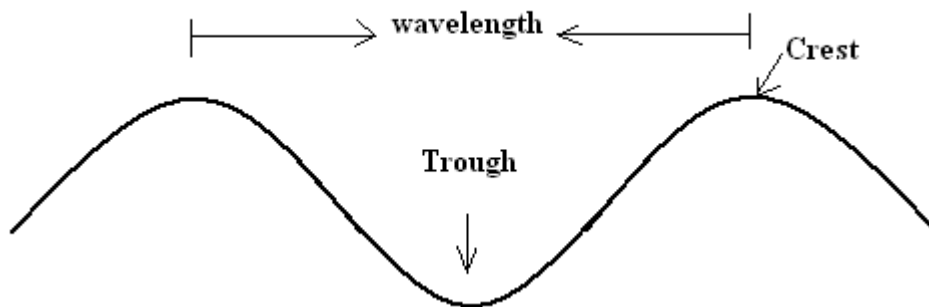
(iii)*Three ways in which islands are formed.*
- ✓ Volcanic eruption
- ✓ Accumulation of coral into coral reefs
- ✓ Submergence of an upland coast
- ✓ Deposition across the bays / river mouths / lagoons
- ✓ Erosion of head lands*(any 3 x 1 = 3mks)*

(b) (i) *Hydraulic action*
- ✓ Action caused by the force of moving water in form of waves
- ✓ Involves direct wave force where the pounding force of the wave causes shattering of rocks on the cliff /causes compression of air in the cracks.

- ✓ As the wave retreats, the air expands explosively.
- ✓ Gradually the rock disintegrates.   *Any 3 x 1 = 3mks*

(ii) *Solution*
- ✓ Is the process where sea water dissolves soluble minerals in the rock which are in contact with it on the sea side and bed. *2 x 1 = 2mks*

(c) Formation of a spit.
- ✓ It forms on a shallow shore at a point where there is a change in the angle of the coastline
- ✓ Sand and shingles are deposited from the headland seaward by long shore drift / oblique waves.
- ✓ Continued deposition leads into accumulation of materials seawards.
- ✓ With time, an elongated ridge of sand and shingles with one end attached to the mainland and the other projecting into the sea called a *spit* is formed. *Any 5 x 1 = 5mks*

(d) 3 economic importances of coastal landforms.
- ✓ Coastal rocks e.g. coral limestone are used in building and construction
- ✓ Limestone rock is used as a raw material in cement industries
- ✓ Coastal features like coral reef attract tourist who bring in foreign exchange
- ✓ Fiord and rias provide suitable sites for construction of the harbours / breeding of fish
- ✓ Marine life is used in education and research
- ✓ Mud flats and mangroves swamps are drained and used for rice cultivation / mangrove forests are exploited to provide poles for construction
- ✓ Extensive coastal plains provide suitable sites for human settlements and agriculture. *Any 3 x 2 = 6mks*

Question 10

(a) *Four physical factors that contribute to development of deserts.*
- ✓ Continentality / distance from large water bodies
- ✓ A place being located in an area with descending winds / anticyclones
- ✓ Rain shadow effect
- ✓ Prolonged droughts
- ✓ Cold ocean currents
- ✓ Prolonged / persisted high temperatures
- ✓ Climate change / global warming
- ✓ Persistent offshore / dry winds / cold winds   *Any 4 x 1 = 4 mks*

(b) *Four characteristics of desert landscape.*
- ✓ Most of the ground is bare / scanty vegetation
- ✓ Total absence / partial surface water
- ✓ Wind is dorminant leading to desert sand storms
- ✓ Land surface is covered by fine sand / stones / rock outcrops
- ✓ Galleys / badlands are common
- ✓ Thin soils
- ✓ Little organic matter. *Any 4 x 1 = 4mks*

(c) *Three factors that influence wind transport in the desert.*
- ✓ Speed and the force / strength of the wind
- ✓ Nature of the load / either light / heavy
- ✓ Intervening obstacles e.g. dead animals , twig or rock
- ✓ Water mass / rain / moisture. *Any well explained 3 x 2 = 6mks*

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(d) How a deflation hollow is formed.
- ✓ A pre-existing depression /localized fault is exposed to wind erosion.
- ✓ Wind eddies remove the unconsolidated materials by with deflation
- ✓ Weathering aids in breaking down the exposed rock
- ✓ Wind abrasion excavates the depression by eroding the rock along weak lines
- ✓ The depression is deepened and widened as a deflation continues to remove the loose materials leading to formation of a large depression known as deflation hollow. *Any 4 x 1 = 4mks*

(e) (i)*Four preparations for your study.*
- ✓ Seeking permission
- ✓ Conduct a reconnaissance
- ✓ Formulate / adjust hypothesis and objectives
- ✓ Choose methods of data collection
- ✓ Assemble necessary tools / materials
- ✓ Prepare a working schedule
- ✓ Divide the students into groups
- ✓ Discuss the topic in class
- ✓ Literature review*Any 4 x 1 = 4mks*

(ii) *List three water depositional features you identified.*
- ✓ Salina / playa
- ✓ Alluvial fans / cones
- ✓ Bajadas*3 x 1 = 3mks*