**MARKING SCHEME SENIOR 2 2019**

 **COMPREHENSIVE ASSESSMENT EXAM OF END OF YEAR**

 **GEOGRAPHY AND ENVIRONMENT**

**SECTION A**: This section is compulsory. **(50 marks)**

1 . At Dar-es-Salaam 40◦E time is 12pm, what is the time at Ecuador 40◦E? **(2mark)**
 40◦+20◦=60◦
 60×4=240min=4hours
 Ecuador is behind in time =**12.00-4=8 am.**

2**.** State three the factors influences the growth of urban centers in Rwanda**.(3Marks)**

* Surplus Resources
* Industrialization and Commercialization
* Development of Transport and Communication
* Economic Pull of the City
* Educational and Recreational Facilities

3. What are characteristics of intrusive igneous rocks? **(3marks)**

* Intrusive igneous rocks form from magma beneath the surface. The cooling process may be fast or slow, and determines the color and texture of the intrusive rock. Intrusive rocks also form large masses on land such as batholiths, dikes and sills.

4. Describe how overgrazing causes soil erosion**.(3marks)**

* Overgrazing is one of the causes for erosion. Overgrazing reduces the usefulness, productivity of the land. The livestock press the subsoil into fine soil which can be carried easily by wind and water. Reduced soil depth, soil organic matter, and soil fertility affects the land's future productivity.

 5. How does sediment turn into sedimentary rock? **(4marks)**

* For sediment to become sedimentary rock, it usually undergoes burial, compaction, and cementation. Clastic sedimentary rocks are the result of weathering and erosion of source rocks, which turns them into pieces—clasts—of rocks and minerals. They are most often transported by water and deposited as layers of sediment.

#### 6. Give and explain the economic Importance of Fish to man.(4marks)

* Fish is source of food
* Fish for controlling diseases
* Scientific value
* Aesthetic value
* Fishery by-products.

7. How does faulting cause earthquakes? **(3Marks)**

* The same process goes on in an earthquake. Stresses in the earth's outer layer push the sides of the fault together. Eventually enough stress builds up and the rocks slip suddenly, releasing energy in waves that travel through the rock to cause the shaking that we feel during an earthquake.

8. Using examples of places you have studied describe the physical factors that cause areas to be sparsely populated**.(4marks)**

* Accessibility is poor.
* Climate is poor - too wet/dry/cold/hot.
* Too mountainous.
* Poor resources.
* Poor vegetation and soil.

9. Why is folding one of the main causes of earthquakes?**(3marks)**

Folding creates an abnormal tension inside the earth's crust which leads to unequal leveling of the mantle and hence it forms pressure on the surface of earth.

10.Using examples describe three ways in which food supply can be increased**.(3marks)**

* Irrigation of arid land:
* Land reclamation
* Fertilizers: Can improve poor quality soil
* Pesticides: Can increase the crop yield.
* Genetically modified crops could also prove to be a way of increasing food supply.

11. State the Similarities and differences a normal fault and a reverse fault.(**4marks)**

* Compare and Contrast normal faults and reverse faults. Normal faults' walls move away from each other. The hanging wall in a normal fault goes down and the footwall goes up, in a reverse fault the hanging wall goes up and the foot wall goes down.

12.(a)State the difference between a renewable and a non-renewable resource and give an example of each**. (4marks)**

* Non-renewable energy is energy that cannot be used again once it is used. So examples of renewable energy can be sunlight, water, and air. Examples of non-renewable energy can be gas, coal, and oil. Renewable energy sources include solar, wind, geothermal energy.

13.(a)What are the difference between a wholesale trade and retail trade.**(4marks)**

* Wholesale trade is the resale of new and used goods to retailers, business-to-business trade or to other types of wholesalers while retail trade sale of any type of goods. It is the final step in the distribution of merchandise, also included is the repair of motor vehicles and motorcycles.

(b).Explain the problems that Rwanda faces in carrying out overseas trade.**(6marks)**

* Land locked country
* Long distance to the sea ports
* High transport coasts
* Low income levels
* Use of different currencies
* language barrier
* Poor roads more especially in rural areas.
* Production of similar goods

**Section B: Attempt allquestions**.**(50marks**

14.(a)What is meant by the epicenter of an earthquake.**(2marks)**

* The epicenter is the point on the surface of the earth directly above the focus's.

(b).Name and describe the types of stress that can occur in Earth’s crust**.(8marks)**

* Stress is the force applied to a rock, which may cause deformation. These three senses of stress also correlate with the three types of plate boundaries. Compressive stress happens at convergent plate boundaries where two plates move toward each other.
* Tensional stress happens at divergent plate boundaries where two plates are moving away from each other.

## Shear Stress: When shear stress occurs, the force of the stress pushes some of the crust in different directions. When this happens, a large part of the crust can break off, which makes the plate size smaller. Shear stress usually happens when two plates rub against each other as they move in opposite directions. The friction of a shear stress at the edges of the plate can cause earthquakes.

15.(a)What is the difference between commercial farming and subsistence farming? **(4marks)**

* Commercial farming is done to earn large profits and it is knowledge based and capital intensive.
* Subsistence farming is based on providing family needs and a little surplus to sell in local market to get some money to meet other family needs.

(b).Describe the reasons for modernization of agriculture in Rwanda.**(6marks)**

* Using crop rotation to improve soil fertility.
* Application of herbicides and pesticides to control pests and diseases as well as weeds.
* Use of modern methods of farming like using fertilizers.
* Planting improved seeds of high breeds, diseases resistant and high yielding.
* Rearing improved animal breeds.
* Planting improved seeds of high breeds, diseases resistant and high yielding.
* Provision of irrigation facilities.
* Integration peasant agriculture farmers in cooperative organization.
* Using modern tools like tractors for cultivating, weeding, harvesting among others.

16.(a)What are the endogenetic processes? **(2marks)**

* Processes operating in the interior of the earth resulting in the formation of natural physical features or landforms and they are caused by earth movements .for instance are folding, faulting and Vulcanicity.

(b).Using examples, explain the advantages and disadvantages of folding to man**.(8marks)**

* **Advantages**
* Fold Mountains are a tourist attraction which brings foreign exchange.
* Fold Mountains are water catchment areas and sources of rivers.
* Some fold mountains have valuable mineral deposits such as coal and petroleum.
* Fold Mountains act as protective barriers during war.
* Some fold mountains on the path of rain bearing rainfall influence rainfall causing the windward slopes to receive heavier rainfall.
* Folding can lead to formation of valuable minerals due to metamorphism.
* Folding brings valuable minerals to the surface making them easily available.

**Negative**
* Fold Mountains on the path of rain winds cause the leeward slopes to receive less rainfall.
* Fold Mountains discourage settlement due to cold temperatures and rugged. terrain
* Folding can lead to burying of minerals.
* Fold Mountains are a barrier to road and railway where there are no passes and where there are passes they may be covered by snow. Orographic fog hinders pilot’s visibility.

17.(a) Define the following terms:

 (i).Deforestation**.(2marks)**

* Refers to the cutting, clearing, and removal of rainforest or related ecosystems into less bio-diverse ecosystems such as pasture, cropland, or plantations

(ii)*.*Forestry.**(2marks)**

* Forestryis the science, art and practice of understanding, managing and using wisely the natural resources associated with, and derived from forestlands.

 (b).Imagine that you have been appointed as specialist in charge of Forests conservation in Rwanda, what measures would you put in place to protect and preserve forest lands**. (6marks)**

* Afforestation where trees are planted in new areas where trees never existed using seedlings from nursery beds.
* Re-afforestation where trees are grown in areas where deforestation has taken place.
* Carrying out protection of the existing trees from the effects of natural hazards like fire and pests through patrolling, spraying, using no smoking sign posts among others.
* Using improved methods of felling trees through selective felling of trees to ensure better regeneration of trees.
* Practicing of silvicultureso that water logged areas are planted with trees and put under great care.
* Avoiding wastage of forest products so that high demand for forest products is avoided.
* Eviction of forest squatters so as to reduce on deforestation in need for land for settlement and cultivation.
* Re-gazetting of forest boundaries to make it clear to the population boundaries and avoid further destruction.

18. Describe how the following features are formed:

 (i) An anticlinal fault. **(3marks)**

In structural geology, an anticline is a type of fold that is an arch-like shape and has its oldest beds at its core. These formations occur because anticlinal ridges typically develop above thrust faults during crustal deformations.

 (ii) An overthrustfold.**(3marks)**

When two forces act towards each other from opposite sides, rock layers are bent into folds. The process by which folds are formed due to compression is known as folding. Folding is one of the endogenetic processes; it takes place within the Earth's crust.

(b).Explain four negative influence of vulcanicity on the physical and human environment.**(4marks)**

* Volcanic eruptions can lead to the loss of lives. This may be by flowing lava, the hot ashes, dust or by poisonous gases which are emitted.
* The eruptions may also cause destruction of property.
* Some volcanic materials like ashes and granite lead to the development of very infertile soil.
* The rugged landscape in volcanic areas discourages human activities like agriculture and settlement.
* Volcanic features like mountains are obstacles to development of transport and communication.
* Volcanic mountains create shadow effect on leeward sides leading to aridity.