**MARKING SCHEME SENIOR 1 2019**

**COMPREHENSIVE ASSESSMENT EXAM OF END OF YEAR**

**GEOGRAPHY AND ENVIRONMENT**

**SECTION A:** This sections **(50 marks)**

1. State three features of good a map.**(3marks)**

* Title, this shows the information that is contained in a map.
* Frame, this is a line that surrounds a map showing its limitation.
* A key, this is a tool that is used in maps. It helps a map reader to understand the symbols, colours and signs used.
* Compass, this shows the direction of various features that are shown on map, the directions are usually in relation to the cardinal points of a compass, they are North, South, West and East.
* Scale, this is the ratio of the size of a map to the ground area represented on it.

2.(a)What is the difference between a map and a sketch map?**(2marks)**

* A map is a representation of the features of an area of the earth on a flat surface while a sketch map is an outline map that is drawn from observation. It does not use exact measurements. It only shows the main features of an area.

(b).State three the characteristics of a sketch map.**(3marks)**

* They are drawn roughly.
* They are not drawn to the scale.
* They represent few features for the interests of the user.
* They are less detailed as compared to topographical maps.
* They are simple and hence easy to understand.
* They have the elements of a good map such as the title, key, frame and compass.

3. Describe the characteristics of an atlas index.**(3marks)**

* The atlas index shows various topics and names of places.
* The index is at the last pages of the atlas.
* The index lists a summary of the specific contents of the atlas.
* The index acts as a pointer. It directs the reader to specific pages were given topics can be found inside the atlas.
* The index follows a systematic alphabetical or numerical order.

4. Differences between maps and aerial photographs.**(6marks)**

|  |  |
| --- | --- |
| * A map is a representation of a part of the earth’s surface. | * An aerial photograph is a picture taken from a raised platform representing a small part of the earth’s surface. |
| * They are drawn to scale. | * Not taken to scale. |
| * A map can represent a relatively large area. | * An aerial photograph only covers a small area or object. |
| * The features used on a map are interpreted by use of symbols. | * Interpreted by use of symbols. The features are clearly seen without the use of symbols. They appear as they are in their natural form. |
| * A map is sometimes difficult to interpret. | * An aerial photograph is easy to interpret. |
| * A map only shows specific information that is needed. It is thus prepared selectively. | * An aerial photograph shows all features that are near a place, whether they are useful or not. |
| * A map is difficult to come up with. It requires a wide range of skills such as cartographic techniques. | * It is relatively easier to take a photograph. It only requires one to have a camera and to know how to use it. |

5.(a) Differentiate between galaxy and comet galaxy.**(2marks)**

* A galaxy is a big collection of gas, dust and billions of stars held together by gravity while Comet galaxy, this galaxy is named after its unusual appearance, looking like a comet.

(b).Give two examples of terrestrial planets and explain why they are called so.**(4marks)**

* Mercury, Venus, Earth, and Mars.
* A terrestrial planet, telluric planet, or rocky planet is a planet that is composed primarily of silicate rocks or metals in within the Solar System

6. Describe the evidence show that the shape of the Earth is not a perfect sphere. **(6marks)**

* The polar diameter (12,722 km) is shorter than the equatorial diameter which stands at 12,762 kilometres.
* The circumference of the polar and equatorial areas differ. The circumference at the equator is bigger than that at the polar regions.
* There is great gravitational pull at the poles than at the equator. This is because areas along the equator are far from the centre of the Earth
* Places on the Earth’s surface do not receive sunshine at the same time.
* Modern satellites show that the Southern Hemisphere is slightly larger than the northern hemisphere.
* The Earth’s horizon is curved. This is evidenced by approaching ships. The smoke, funnels and mast appear on the horizon, before the rest of the ship is seen from the coast.
* The polar star looks bigger at the poles and smaller away from the poles.
* All the planets in the solar system are spherical. The Earth being one of the planets has a similar shape.

7. Table below shows mean monthly temperatures of station X.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Months | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec |
| Mean monthly temp 0 C | 20 | 18 | 21 | 25 | 25 | 28 | 28 | 27 | 20 | 20 | 21 | 23 |

(i) .Calculate the mean annual range of temperature of station X**.(2marks)**

* 28-20= 8°C

(ii).Calculate the mean annual temperature. **(2marks)**

* is = 276/12 = 23°C

(iii).Calculate mean daily temperature of station X**. (2marks)**

* Daily maximum temperature +Daily minimum temperature =

24 +14/2= 38/2= 19°C

8. Explain four any effect of relief on human activities in your area.**(4marks)**

* Mountainous areas are usually forested areas, the presence of forests in such areas encourages lumbering which is an important economic activity.
* Plateaus are useful because of the presence and easier way of extracting minerals, they also favour generation of hydropower.
* Large resources of minerals are usually found in mountains, this encourages mining activities.
* Hydroelectricity is generated from the waters of perennial rivers in the mountain regions.
* Most of the minerals in the world are found in the plateaus. For example tin and wolfram are found in the central plateau of Rwanda.
* Rivers falling down the edges of plateaus form waterfalls, these waterfalls provide ideal sites for generating hydroelectric power.
* They are also good tourist attraction sites.

9. Explain how destruction of the ozone layer effects living organisms on the earth.**(5marks)**

* Increase in temperatures resulting in many of the glaciers melting.
* Rise in the sea level due to the incoming melt water .
* Diseases like skin cancer.
* Extinction of some plant and animal species due to the harsh climatic conditions.
* Prolonged droughts and global warming in general that results to environmental degradation

10. Briefly describe the importance of air in the soil.**(5marks)**

* It facilitates plant growth by supplying oxygen to the root hairs.
* Air supports micro-organisms which are found in the soil.
* Air helps in the oxidation process. This process is responsible for breaking down rocks to form soils
* It determines the soil’s ability to retain humus from being washed away.
* It determines the aeration of the soil.

**Section B: Attempt all questions.(50marks)**

11. Study the table below and fill in the necessary missing information.**(10marks)**

|  |  |  |
| --- | --- | --- |
| Element | Instrument | Lines drawn on a map showing each element |
| Temperature......................... | Thermometer | Isotherms........................ |
| Rainfall | Rain gauge | Isohyets........................... |
| Wind speed | Anemometer | Isotachs............................... |
| Wind direction | Anemometer.................... | Isogon |
| Atmospheric. Pressure........................... | Barometer/aneroid barometer | Isobars................................... |
| Humidity........................... | Hygrometer | Isohumes |
| Sunshine | Sunshine recorder............ | Isohels |
| Cloud cover | Ceilometer/ceiling light(height of cloud), cloud cover radiometer | Isonephs.............................. |

12.(a) Mention any two components of soil.**(2marks)**

* Inorganic particles
* Organic matter
* Water (moisture)
* Air (gases)

(b).the below show different types of soils, explain how are used for different human activities.**(8marks)**

|  |  |
| --- | --- |
| **Types of soils** | **Its role for human activities.** |
| Sandy soil | * It is used for plowing, planting and cultivating. * The useful vegetables like potatoes, grams, tomatoes. |
| Clay soil | * Clay soilis used for making pottery, * For decorative purpose * Construction products, such as bricks, wall and floor tiles. |
| Silty soil | * Sit is good for growing crops. |
| Loam soil | * Loam soil is suitable for growing most plant varieties. * Bricks made of loam, mud, sand, and water, with an added binding material such as rice husks or straw, have been used in construction since ancient times. |

13.(a) Distinguish between weather and climate.**(2marks)**

Weather refers to day- to- day temperature and precipitation activity whereas climate is the term for the averaging of atmospheric conditions over longer periods of time.

(b).Briefly describe the impact of weather and climate on human activities.**(8marks)**

* High and reliable rainfall in moderate levels supports the growth of crops. This ensures food security.
* Moderate and abundant rainfall supports growth of grass hence favoring livestock farming. It also supports herbivorous wildlife hence developing the tourism sector.
* Heavy and reliable rainfall supports the growth of trees of high value. This leads to the development of forestry and lumbering.
* The warm tropical climate attracts many tourists who come to enjoy the warmer conditions when they have winter conditions back home. This supports the tourism sector.
* In areas where with arid climates, humans are forced to find ways of irrigating the crops.
* Heavy and reliable rainfall sustains water bodies like rivers, swamps, lakes and wetlands. All these support aquatic life, tourism sports and provide water that is used for domestic purposes.

14. Define the following terms:

(a)(i) Population structure.**(2marks)**

* Population structure is a component of the environment for the members of the population and provides information that affects individual physiology and behavior, hence fitness.

(ii) Population density.**(2marks)**

* Population density is the measure of the number people per unit area, commonly represented as people per square kilometer.

(b).Why does the government of Rwanda conduct a census every 10 years?**(6marks)**

* A population census in a country is necessary because it serves as basis for adequate policy planning.
* Population census reveals the current trend of fertility and mortality, this helps to calculate growth rate and also necessary for planning for social services.
* Census may reveal the composition of population by age, this information is useful in laying down plans for provision amenities for the different age groups.
* Census may reveal dependency ratio in the country, the information may be used in determining tax relief.
* It may reveal the age sex composition of the population, helps to reveal regional imbalances in working and dependence population.
* It reveals nationality and ethnicity of people which may be useful in planning for the distribution of political responsibilities.
* It reveals the place of birth of an individual which may help to know the migration trends.

15.(a) Differentiate between landslides and earthquake.**(4marks)**

* Landslide refer the movement of masses of earth’s materials composed of rocks and soils down a slope while earthquakes is a sudden and violent shaking of the ground as a result of movements within the earth’s crust.

(b).Explain the effects of volcanic eruptions to human activity.**(6marks)**

* Displacement of people.
* Loss of lives.
* Destruction of settlement areas and property.
* Air pollution that occur s from the volcanic ashes and gases that are released.
* Destruction of transport and communication lines.
* Destruction of farmlands leading to food shortages.