

- (a) Name the processes that take place at point P and Q.  
 (b) Name the features formed at point R  
 (c) Explain two causes of rejuvenation  
 (d) Outline three characteristics of old stage of river.

(2 marks)

(1 mark)

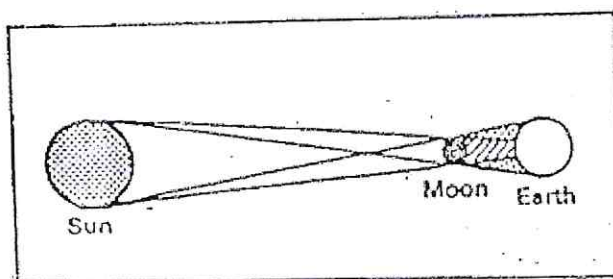
(4 marks)

(5 marks)

## GEOGRAPHY I (PHYSICAL GEOGRAPHY) MARKING GUIDE, 2015

### SECTION A

- a) A weather station is a place where instruments, reading and recording of weather elements are taken.  
 b) It should be in an open ground, the place should be secured from intruders, it should be away from buildings, vegetation and other relief features, the area should experience free flow of air, the site should be in a relatively flat area, not affected by floods or any surface runoff that may pose a threat to the instruments and for ease of installation and reading.
- Hill fog, advection fog, radiation fog, frontal fog, steam fog.
- It contains electrons and ions, it is furthest in the atmosphere layer, temperatures rise rapidly with increase in height, gases are ionized by the incoming solar radiation, thus experience radio waves effect, atomic oxygen absorbs the incoming short ultraviolet radiation from the sun.
- The apparent movement of the sun between the northern and southern hemisphere determines the length of the day and the night.  
 - On 21<sup>st</sup> June, the sun is overhead along the tropic of cancer.  
 - Regions along the equator have longer daytimes and nights.  
 - Regions north of the equator have a longer day and a shorter night.  
 - Day time increases towards the north Pole until a continuous 24 hours a day.  
 - The southern region at this time experiences shorter days than the nights.  
 - On the 22<sup>nd</sup> of December, the sun is overhead at the tropical of Capricorn.  
 - At the northern hemisphere, the day becomes shorter towards the Northern pole.  
 - Revolution of the earth, the earth's spherical shape, inclination of the earth on its axis etc.
- a) An eclipse is a shadow formed when the sun's rays are blocked from reaching the surface of the earth of the moon.



- b) A Lunar eclipse occurs during the revolution of the earth when the earth comes between the moon and the sun, the sun's shadow cast the moon and at times it might pass unnoticed when occurs at night.
- Evaporimeter or atmometer.
- a) Vertical aerial photograph: The camera is focused vertically on the area above the object, the camera lens focuses vertically on the area before the photograph is taken.  
 b) Oblique aerial photograph: The camera is tilted at an angle while taking the photograph, it covers a relatively large area, its mostly taken from low flying objects like aircrafts, objects near the camera larger than those far away.
- Omitted.

9. They are made up of crystals, made up of elements, occur in different colors, varying degree of hardness, different texture, have cleavage, have luster, have fluorescence, different shapes, opaque or transparent, can be gas, liquid or solid, have different densities.
10. a) Steep slopes: these allow little or no percolation of water to occur and a high rate of erosion, hence reduced or no chemical weathering.  
b) Low temperatures limit chemical weathering.
11. They are high clouds occurring between 6000m – 12000m above sea level, they are characterized by a wispy, fibrous – like looking cloud, they occur in different patches, they indicate fair weather conditions, they are less dense.
- 12.

Types of organically formed sedimentary rocks	Formation process	Examples
Calcareous	- decomposition of animal Remains - sedimentation	Coral reefs, chalk, limestone, dolomite
Siliceous	Decomposition and accumulation of animals whose skeleton are rich in silica	Diatomite
Ferruginous	- Precipitation of hydrated iron oxide.	Iron stone, hematite

13. - Horizontal/ lateral/organic: operate along a horizontal plane within crustal rocks causing the rocks to stretch, shorten or shear. Its caused by tensional compressional forces. It results to features like rift valleys and fault scarps.  
- Vertical/epeirogenic: This operates along the radius of the earth from the interior towards the surface or from the surface towards the centre of the earth. These forces cause the crustal rocks to be pulled downwards (downward warping) or be pushed upwards (up warping). It results to features like basin, fault blocks or tilt blocks.
14. Magma movement, gravitational pressure, convectional currents, isostatic adjustments, tension forces, compressional forces, release of pressure and stress, energy released from the mantle.

#### SECTION B:

15. a) Fault steps are a series of steps on a slope formed when several parallel faults occur in an area. Vertical displacements at different levels, hence the resultant.  
b) i) *Formation by tensional theory*: Layers of rocks are subjected to tensional forces, lines of weakness develop resulting in the development of normal faults and side-blocks are pulled apart while the middle blocks sinks to form the floor of the rift valley. (diagram needed)  
ii) *Formation by compressional theory*: Layers of rocks are subjected to compressional forces, lines of weakness occur leading to development of adjacent reverse faults. The outer blocks are thrust over the middle block. The middle block sinks to form the floor of the rift valley while the outer blocks form fault scarps or escarpment after the overhanging sides have collapsed.  
iii) Differential up lift theory, iv) Sea floor spreading theory, v) Plate tectonic theory.
16. a) Teacher's guidance  
b) Rainfall is expected throughout the year, it falls in one maxima (October – April), rainfall is moderate, 784mm per year, temperatures are low to moderate annual temperature range is 10°C, rainfall increases with increase in temperature and decrease in temperature, most of the rain falls in the warm season.  
c) i) Southern hemisphere

- ii) The temperatures are highest in November, December, January and February, a time when the sun is overhead at the southern tropic of Capricorn.
- iii) Harare in Zimbabwe, Cape town, Natal South Africa.

17.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>- Forests add beauty to a country's landscape</li> <li>- Acts as a habitat for wild animals</li> <li>- Trees prevent soil erosion as they bind soil together and act as wind breakers.</li> <li>- Plants such as aloe vera and neem tree have a medical value.</li> <li>- Some trees like pines are used in paper industry</li> <li>- Provide camping sites</li> <li>- Provide timber for building and construction</li> <li>- Purifies the air when it takes up CO<sub>2</sub> and give O<sub>2</sub></li> <li>- Act as water catchment areas.</li> </ul>	<ul style="list-style-type: none"> <li>- Some are thorny and harm humans and animals</li> <li>- Some produce bad odour and pollute the Environment.</li> <li>- Some are poisonous when eaten by humans and animals leading to death.</li> <li>- It harbours insects and pests which may attack and harm human beings.</li> </ul>

18. a) Slow mass wasting is the slow but steady movement of the material down slope and this movement might be very slow in such a way that it cannot be noticed e.g soil creep, solifluction, screa creep/Talus creep and rock creep *while* rapid mass wasting involves sudden and fast movement of material usually causing a lot of damage to property and at times loss of life e.g mud flows, earth flows, landslides and avalanches.

b) Alternate drying and wetting of the soil, creeping/sliding, ploughing on gentle slopes, burrowing animals.

c) Exposure of minerals, leads to soil erosion on steep slopes, may lead to change of transport and communication or river course, destruction of property and loss of life, formation of scars on the landscape, formation of lakes when the fallen materials accumulate on the lower side of the slope.

19. a) P is deposition of alluvium, Q is erosion.

b) Meanders, river cliffs, levees, concave bank, erosion bank.

c) Increased rainfall, change in base level caused by a drop in sea level, regional uplift of land and unequal regional subsidence of land, increase in river's discharge caused by the increased precipitation in catchment areas as a result of river capture and a change in rock resistance from resistant rock to less resistant rock.

d) The dominant activity here is deposition although some lateral erosion occurs at some section of the river, common features at this stage include meanders, ox-bow lake, bottomed valley, flood plain distributaries, confluence and drained channels.

**END**