Sangam S.K.M College-Nadi

Year 13

Geography

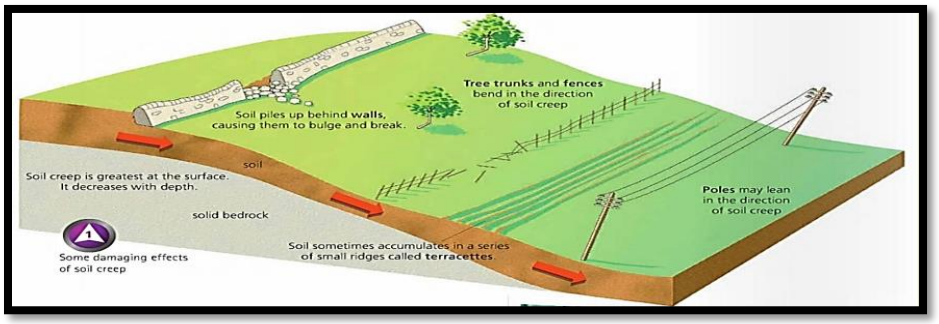
Worksheet 2 – Solution

A. Definitions

a) **Continental Drift Theory** - Proposed by Alfred Wegner in 1915 refers to the fact that continents are not stationary, but move across the Earth's surface.
b) **Convection currents** - the circular movements of the molten rock/ magma in the asthenosphere.
c) **Conservative margins** -these are boundaries where two plates slide pass each other.
d) **Anticline** - the layer of rocks that bend up an upfold called anticline.
e) **Weathering** - is the disintegration (breaking up) and decomposition (decay) of rocks that occur in their original position.
f) **Asthenosphere** - the upper layer of the earth's mantle, below the lithosphere, in which there is relatively low resistance to plastic flow and convection is thought to occur .
g) **Batholiths** - are large masses of magma which cool slowly within the crust.
h) **Crust**- is the thinnest outer most layers on the surface averaging 35km thick beneath the continents but only 6km under the oceans.
i) Delta- a triangular tract of sediment deposited at the mouth of a river, typically where it diverges into several outlets.
j) Solifluction- the gradual movement of wet soil or other material down a slope, especially where frozen subsoil acts as a barrier to the percolation of water.
k.) **Lava plug**- also called a **volcanic** neck or **lava** neck, is a **volcanic** object created when magma hardens within a vent on an active volcano.

B. Resource Interpretation

Use the resource given below and your knowledge to answer the questions that follow.



(i) **Identify the type of mass movement shown above**.
Soil Creep

(ii) **Briefly explain this process of mass movement.**
Soil Creep is a continuous but slow movement of weathered material down slope. The soil particles are lubricated (wet) by rainwater which enables them to slide over each other. Because the movement is slow it may not be easily seen but can be recognized by leaning fences and trees on a slope as well as bulging soil mounds known as terracettes.

(iii) **How is this type of movement different from earthflow? Give 2 reasons to explain your answer.**
Soil Creep is continuous but slow movement of weathered material down slope while earthflow is usually rapid and vicious movement of huge masses of fine grained semi-liquid material.

(iv) **Explain how development has increased the risk of mass movement**.
Increased **development** would increase the driving forces of **mass movement**. The density of the **human activity**, such as infrastructure, plus the pull of gravity would increase the likelihood of a landslide or a mudslide, or weaken a part of the slope.

C. ESSAY

With reference to specific case studies, discuss two advantages and two disadvantages of volcanism.

ADVANTAGES

- Ash weathers into a fertile soil ideal for farming.
- Basic lava may also produce fertile soils (the region surrounding Mount Etna) but needs very careful management. The fertility of acid lava is low.
- Igneous rock contains minerals such as gold, copper, lead and silver.
- Geysers and volcanoes are tourist attractions (Yellowstone National Park), generating revenue for local communities. Volcanic eruptions may produce spectacular sunsets (Krakatoa)

DISADVANTAGES

- Violent eruptions with blast waves and gas may destroy life and property (Mt Pelee, Mt St Helens)
- Ejection of ash and lava ruins crops and kills animals
- Short-term climatic changes occur as volcanic dust absorbs solar energy, lowering temperatures and increasing rainfall.