WEATHERING

1 a)(i) Weathering is disintegration/breaking down and decomposition of rocks in situ due to exposure on the surface while mass wasting is down slope movement of weathered material under influence of gravity.

(ii)

- Climate changes
- Relief/topography
- Nature of rock

(iii)

- Pressure of expanding roots in cracks cause rocks to disintegrate.
- Plants like algae release organic acids on rock causing its decay.
- Linchens, mosses maintains rock moisture which facilitates chemical weathering.

2 a)

- Exfoliation
- Block disintegration
- Slaking
- Crystal growth

b)

- Hydrolysis
- Oxidation
- Solution
- Carbonation

3. a) Is the physical break up or disintegration of rock material without any

alteration in the chemical composition?

b)

- During the day suns' heat in arid areas cause surface layers of rock to expand.
- At night the low temperatures result in cooling and contraction of outer layers
- This occur repeatedly
- Rocks with poor heat conductivity do not transmit heat to the inner rock.
- Expansion and contraction causes stresses within outer parts of the rock,
- Eventually shell of outer rock layer peal off from main rock mass.
- This leaves behind a rounded-off mass known as exfoliation dome.

4. **Five processes;**

Hydrolysis

This is the process where chemical reactions takes place between hydrogen ions in water and minerals in a rock.

Hydration

This is the process where some minerals in a rock take up water and expand causing stress in the rock. This causes the rock to fracture.

Solution

This is the process where some rock materials dissolves in water and are washed away in solution. This leaves behind a weak rock.

Carbonation

This is the process by which rainwater with carbonic acid dissolves calcium carbonate in rocks. This leaves behind a weak rock.

Oxidation

This is the process in which oxygen in the air reacts with iron compounds in the rocks. The ferrous state of iron minerals changes to ferric state which weakens the rock.

5. Pressure release/unloading

   Exfoliation

   Block disintegration

   Crystal growth

   Slaking

6. Climate changes

   Relief/topography

   Nature of rock

   Vegetation cover plants

   Action of humans and animals

7. Denudation is the wearing away/sculpturing of land surface by processes of weathering/mass wasting/transport and erosion.

8. a) Block disintegration

   b)

   - A well jointed rock is subjected to intense heating during the day and cooling during the night.

- The rock minerals expand due to heating and contract as a result cooling during the night.
- The rock minerals expand due to heating and contract as a result of cooling
- The joints enlarge due to alternating expansion and construction of the rock mass.
- When this occurs repeatedly the rock mass eventually break into blocks along joints hence the name block disintegration.