Questions and answers

Chapter three soil and soil formation

1. **What is soil?**

Soil is the thin layer of the earth's surface composed of weathered rock, air, water, and humus or soil is the top layer of the earth crust

2. **What is the name given scientific study of the soil**?

The scientific study of the soil is called pedology

3. **State the main component of soil?**

The main component or composition of soil are:

- ☐ Air
- ☐ Humus
- ☐ Mineral particles
- ☐ Water
- ☐ Bacteria
- ☐ Rock particles

4. **Briefly describe the process of weathering**?

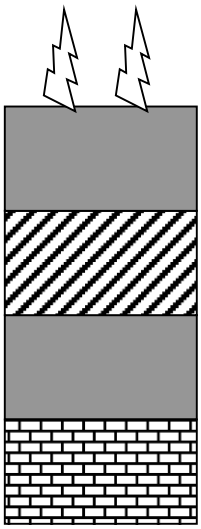
Weathering process breaks up the rock into small particles weathering process may be physical, chemical or biological

5. **State main properties or characteristics of soil**?

- Color
- Texture
- Porosity
- Hardness
- Soil structure
- Soil organic matter
- Soil permeability
- Soil moisture
- Soil acidity

6.

Study the diagram below and answer questions that flow?



A. .....

B. .....

C. .....

D. .....

a) **What is the general name given these diagrams shown above**?

It is called soil profile

b) **Name layers represented A, B, C and D**?

- Horizon A or top soil
- Horizon B or sub soil
- Horizon C or weathered rock
- Horizon D or rock soil

c) **State any four factors that affect the diagram above?**

- Movements of water in the soil
- Leaching
- Vegetation
- Human activities

7. Define the term leaching?

- The down ward movement of water through the soil which carries soluble minerals from top and relocates sub soil is called leaching

8. Differentiate between laterite and podzol

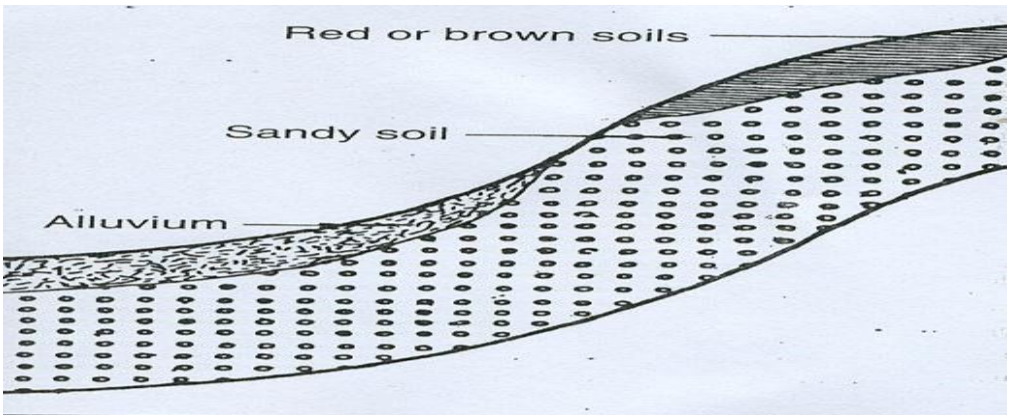
- In hot wet reaching leaching produces red brown soil called laterite
- In cold wet region it produces grey soil called podzol

9. What is a soil profile?

Soil profile is the vertical arrangement of soil layers each layer of the soil is called Horizons.

10.Define the term soil catena?

Soil catena is the sequence of **soils** from hilltop to valley floor.the below diagram shows soil catena.



11.**State any four factors that influencing soil catena**?

- Relief
- Leaching
- Drainage
- Transport of soil debris

12.State any three types of soil?

Soil can be classified according to texture and divided

- Clay
- Sand

- Silt

13. **Compare sandy, clay and loamy soil**?

Sandy soil

- ✓ It is well drained
- ✓ It has low water holding capacity
- ✓ It is slightly acidic
- ✓ It is well aerated

Clay soil

- ✓ It is poorly drained
- ✓ It has fine texture
- ✓ It has high PH alkaline
- ✓ It has high water holding capacity

Loamy soil

- ✓ It has moderate texture
- ✓ It is well aerated
- ✓ It has good water holding capacity
- ✓ It contains good amount of plant nutrient and organic matter

14. What is soil degeneration or degradation?

Soil degeneration is the decline of the usefulness of the soil leading to lose its fertility

15. **List main cause's degeneration**?

- ✓ Soil erosion
- ✓ Poor cultivation techniques
- ✓ Soil capping
- ✓ Monocroping
- ✓ Over grazing
- ✓ Decline of humus content
- ✓ Change of soil PH

16. What is soil erosion?

Is the movement of top fertile soil from one place to another place

17.**Name agents of soil erosion**?

- Water
- Wind
- Animals
- Mass westing

18.Name any five causes of soil erosion?

- Deforestation
- Monoculture
- Overstocking
    - Ploughing
    - Over cultivation
    - Over grazing
    - Cultivation of slopes
- Cultivation along river banks

19.State any five effects of soil erosion?

- Low crop production
- Economic set back of a country
- Erosion of the productive land
    - Low amount and quality of livestock
    - Food and water shortage

20.What are the main types of soil erosion?

- Splash erosion
- Sheet erosion
- Rill erosion
- Gully erosion
- Land slide erosion

21.**State the main ways of conserving soil**?

- Mixed farming
- Regulation of live stock

- Mulching
- Afforestation and reforestation program
- Multi culture
- Crop rotation
- Mulching
- Use of manure
- Building Gabions
- Contour strip farming

22.**List main significance of soil**?

- Source of minerals
- Physical support for the rooting system of plants
- Habitat of bacteria and burrowing animals
- Source of Building materials
- Production of crops
- Raw material for pottery industries
- Sources of minerals
- Source settlement
- Influence distribution of settlement through promotion of agriculture

23.What are the importance of soil organic matter?

- Organic matter adds nutrient to soil when it is decay
- It protects soil against PH
- It is source of food to the living organisms in the soil
- It helps modify soil temperature

24.**List importance of air in a soil**?

- ✓ Oxygen is used during germination of seeds
- ✓ Oxygen is used in root respiration
- ✓ Nitrogen fixing bacteria convert nitrogen into nitrates a form in which plant is used by plant as nutrient

25.What are the importance of living organisms in the soil?

- ✓ They help in decomposition of organic matter
- ✓ Some bacteria fixing nitrogen in to the soil
- ✓ Involves biological process of weathering