GRADE 10

OPENER TERM 2 2026 ASSESSMENT

AGRICULTURE MARKING SCHEME

SECTION A

1. What is altitude? (1 mark)

Altitude is the height of a place above sea level.

2. Moses is a farmer in Nakuru, he plans to plant some trees in his farm.

(a) Five natural factors that affect land productivity (5 marks)

- *Climate*
- *Soil Factors*
- *Biotic factors*
- *Topography (slope of the land)*
- *Natural vegetation*
- *Altitude*

(b) Two benefits of planting trees on the farm (2 marks)

Trees help prevent soil erosion.

They improve soil fertility by adding organic matter.

3. What is soil profile? (1 mark)

A soil profile is the vertical arrangement of different soil layers (horizons) from the surface downwards.

4. Four factors to consider when evaluating land for crop production (8 marks)

Soil fertility

Fertile soils contain enough nutrients needed for crop growth.

Rainfall

Adequate and well-distributed rainfall ensures crops get enough water.

Topography

Gentle slopes are better because they reduce soil erosion and allow easy farming.

Soil depth

Deep soils allow roots to grow well and store more water and nutrients.

5. Two reasons why land is important in agricultural production (2 marks)

Land is the place where crops are grown.

Land provides pasture for livestock grazing.

6. Two disadvantages of buying land (2 marks)

It requires a lot of money.

There may be legal problems or land disputes.

7. Three types of soil (3 marks)

Sandy soil

Clay soil

Loam soil

8. Three aspects of rainfall considered in agriculture (6 marks)

Amount of rainfall

Determines whether there is enough water for crops.

Distribution of rainfall

Rain should be evenly spread during the growing season.

Reliability of rainfall

Rainfall should occur consistently each season for good crop production.

SECTION B

9. Six reasons why proper land preparation is important (6 marks)

- Removes weeds.
- Improves soil aeration.
- Makes planting easier.
- Improves water infiltration.
- Helps control pests and diseases.
- Provides a good seedbed for crop growth.

10. Three components of soil (6 marks)

Mineral matter

Small particles from rocks that provide nutrients.

Organic matter

Decayed plants and animals that improve soil fertility.

Soil water and air

Water dissolves nutrients while air helps roots and organisms breathe.

11. Soil properties and their importance

(a) Physical properties

These include soil texture, structure and porosity.

They affect water holding capacity, aeration and root penetration.

(b) Chemical properties

These include soil nutrients and soil pH.

They determine the availability of nutrients to crops.

(c) Biological properties

These involve living organisms in the soil like bacteria, fungi and earthworms.

They help decompose organic matter and improve soil fertility.

12. Soil experiment

(a) Aim of the experiment (1 mark)

To investigate soil drainage / water holding capacity of soils.

(b) Soil labelled

A– Sandy soil

B– Loam soil

C – Clay soil

13. Three physical properties of soil affecting crop production (6 marks)

Soil texture – determines water retention and drainage.

Soil structure – affects aeration and root growth.

Soil porosity- it influences water infiltration and drainage In soil.

14. Soil profile

(a) Label horizons (4 marks)

A – Topsoil

B – Subsoil

C – Weathered parent material

D – Bedrock

(b) Characteristics of each horizon (8 marks)

A Horizon (Topsoil)

Dark in color

Rich in organic matter

Contains many roots and organisms

B Horizon (Subsoil)

Lighter in colour

Contains minerals washed from topsoil

Less organic matter

C Horizon

Partly weathered rock

Very little organic matter

D Horizon (Bedrock)

Solid rock

Not suitable for plant roots

15. How soil properties affect crop growth

(a) Soil texture

Determines water retention, drainage and nutrient holding capacity.

(b) Soil fertility

Fertile soil contains nutrients necessary for healthy crop growth.

(c) Soil porosity

Controls movement of water and air in soil, which is important for roots.

16. How soil profile affects crop production (4 marks)

Determines root penetration.

Influences water storage.

Affects nutrient availability.

Determines soil drainage.

17. How soil pH influences crop production (3 marks)

Determines availability of nutrients in soil.

Affects activity of soil microorganisms.

Some crops grow better in specific pH ranges.

18. Conservation tillage

(a) Definition (2 marks)

Conservation tillage is a farming practice where minimum soil disturbance is done while leaving crop residues on the soil surface.

(b) Two conservation tillage practices (4 marks)

Minimum tillage – reducing the amount of ploughing.

Mulching – covering soil with plant materials.

(c) Four benefits of conservation tillage (4 marks)

i. Reduces soil erosion

ii. Conserves soil moisture

iii. Improves soil fertility

iv. Reduces labour and cost

19. Two methods of clearing fallow land (4 marks)

Manual clearing – using tools like pangas, hoes and slashers.

Mechanical clearing – using tractors and bulldozers.

Use of chemicals (herbicides) to kill weeds

20. Soil structures (3 marks)

i) prismatic structure

ii) platy structure

iii) blocky structure