

**Term 1 - 2024**  
**Agriculture Form 3**  
**MARKING SCHEME**

1. **Give two characteristics of plantation farming** (1 mark)
  - i. Production of one type of crop
  - ii. Require large tract of land
  
2. **Name two chemical processes of weathering**
  - i. Carbonation
  - ii. Oxidation
  - iii. Hydration
  
3. **State two advantages of organic farming** (1 mk)
  - i. Improves soil structure
  - ii. Enhance soil water infiltration and retention
  - iii. Provides food for soil microbes
  - iv. Production of food free from chemical residues
  - v. Cheaper since there is purchase and chemicals
  
4. **Outline three effects of soul organisms which benefit plant growth** (1 mark)
  - i. Improves aeration
  - ii. Release soil nutrients when they decompose
  - iii. Help in decomposition process
  - iv. promote nitrogen fixation.
  
5. **Give two ways in which organic mulch help to conserve water in the soil** (1 mark)
  - i. Reduce water loss through evaporation
  - ii. Improve soil water infiltration and retention
  
6. **Give two types of labour records** (2marks)
  - i. Labour utilization analysis
  - ii. Muster roll

- 7, **Outline two causes of hard pans in the soil** (2 marks)
- i. Continuous cultivation at the same depth on wet soil
  - ii. Continuous cultivation using heavy implements on wet soil
8. **State four importance raising seedlings in a nursery bed** (2mks)
- i. Excess sold for income
  - ii. Facilitates planting of small seeds
  - iii. Production of many seedlings in small area
  - iv. Management practices easily and timely carried out
  - v. Transplanting of only healthy and vigorously growing
  - vi. provide best condition for growth of seedlings.
9. **Give four symptoms of potassium deficiency in plants.** (2mks)
- i. Leaf curling
  - ii. Leaf surface lose chlorophyll and become yellowish that is they become chlorotic.
  - iii. Premature leaf fall
  - iv. Stunted growth
  - v. The edge of leaves are scorched while the central parts remain green
10. **State three reasons for top dressing pasture** (1 ½ mks)
- i. Increase herbage yields
  - ii. Improve nutritive value of crop
  - iii. Add soil nutrients
11. **Give four reasons for training crops as a field practice** (2 marks)
- i. Plants grow in a designed direction and shape
  - ii. Facilitates easy harvesting and spraying
  - iii. Clean fruits are produced
  - iv. Support plants
12. **State three activities the farmer carries out on a store before storing grains** (2mks)
- i. Cleaning the store/remove debris of previous crops
  - ii. Dusting
  - iii. Higher germination percentage
  - iv. Pure/true to type

13. **Give four desirable characteristics of certified seeds.** (2mks)
- i. High yielding
  - ii. pure/True to type
  - iii. Clean/weed free seeds
  - iv. High germination percentage
  - v. Healthy/free from pests and diseases
14. a) **Outline two characteristics of nitrogenous fertilizers** (1mk)
- i. Highly soluble
  - ii. Easily leached
  - iii. Scorching /burning effects
  - iv. Highly volatile
  - v. Hygroscopic
- b) **Give the forms in which the following elements are available to plants** (1 mk)
- (i) Phosphorous: Phosphate ions ( $\text{PO}_4^{2-}$ )
  - (ii) Potassium: Potassium ions ( $\text{K}^+$ )
15. **Give four factors that influence the choice of tools and equipment used in Primary cultivation.** (2 mks)
- i. Condition of the land
  - ii. Type of tilth required
  - iii. Depth of cultivation
  - iv. Availability /cost of the tool
16. **State four methods of weed control** (2 mks)
- i. Removal of weeds by pulling out with the hand.
  - ii. Removal of weeds by using the trowel.
  - iii. Removal of weeds by some agricultural techniques like ploughing, burning etc.
  - iv. Spraying with herbicides

**17. Terms;**

- a) Trellising
  - supporting climbing plants e.g. passion fruits
- b) Stooking
  - cutting maize and arranging it vertically in groups in the field (1mk)

(1mk)

**18. Two advantages of strip grazing**

- i. minimizes chances of animals getting bloat
- ii. gives more productivity per unit area of land
- iii. the pasture is utilized more efficiently
- iv. comparatively cheaper than constructing the paddocks

(2 x ½ = 1mk)

**19. Four advantages of mixed farming (2mks)**

- i. It enhances the productivity of the farm land.
- ii. It increases the per capita profitability.
- iii. Both farming enterprises complement each other.
- iv. Farmers can keep their fields under continuous production.
- v. It enhances the productivity of the farmer also.
- vi. Reduce dependency on external inputs and costs

**SECTION B. (20 MKS)**

**20. (a) Name the crops (s) propagated by illustrations**

A = Tea

B = Coffee

=(1mk)

2 x ½

**(b) Give three factors that promote the rooting of illustration A.**

- i. Oxygen supply

- ii. Rooting medium
- iii. Correct relative humidity
- iv. Suitable temperature
- v. Suitable light intensity
- vi. Leaf area

**3 x 1 = (3mks)**

**21. (a) What was the aim of the experiment?**

To show that soil is made of different sized particles

**(1 x 1= 1mk)**

**(b) Name the parts labeled C and D.**

C= Humus / organic matter.

D = Gravel.

**2 x 1 = (2mks)**

**(c) Name the property of soil being investigated.**

Soil texture

**1x1 = (1mk)**

**22. (a) Identify the type of erosion illustrated.**

Splash / Rain drop

**1 x1 = 1mk**

**(b) Give two soil factors that increase the rate of soil erosion.**

-Soil depth / profile

-Soil type

**2 x 1 = (2mks)**

**(c) Name one agent of soil erosion.**

- i. High wind
- ii. Rushing water
- iii. Increase human activities

**3 x 1 = (3mks)**

**23. Identify the type of irrigation shown above.**

(i) Furrow irrigation

**1x1=(1mk)**

(ii)

- Reduce fungal diseases e.g. blight

- Cheap to establish & maintain
- Require little skills.

2x1=(2mks)

**24. (a) Compost manure**

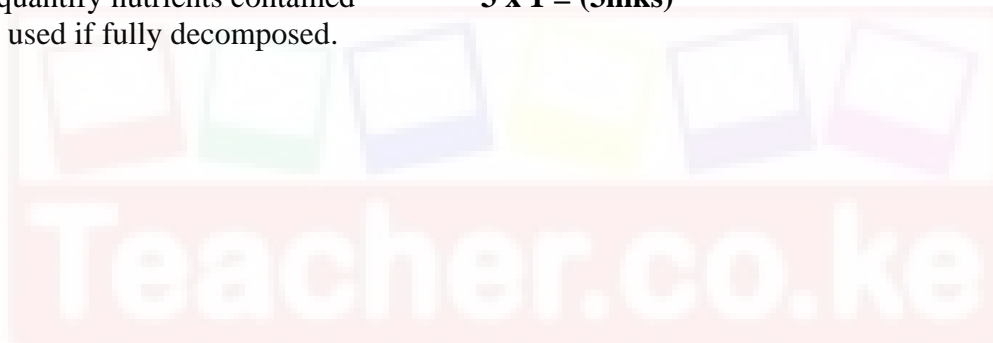
1x1 =(1mk)

- (b) E = Dry leaves  
F = Maize stalk

2 x ½ = ( 1mk)

**(c) Disadvantages of manure**

- Release nutrients slowly
- Bulky
- May be a source of weeds
- Provide breeding ground for pests
- Difficult to quantify nutrients contained **3 x 1 = (3mks)**
- Can only be used if fully decomposed.



**SECTION C. (40 MKS)**

**25. (a) Give six precautions observed in pruning mature tea**

**(6 mks)**

- Side branches should never be out to encourage spread of tea bush
- Avoid dish-shaped frame
- Prune parallel with slope of ground not horizontal
- Cut branches across to minimize area of wound
- Pruning knife should be sharp
- Small branches and twigs on frame be removed by hand
- Leave branches to rot to release nutrients/act as mulch

**(b) Describe the procedure followed when collecting a soil sample form the field for testing in the laboratory**

**(6 mks - procedural)**

- i. Clear vegetation from sampling spot
- ii. Make vertical act 15-25cm deep (crop land), 5cm pasture
- iii. Take slice with spade/soil auger
- iv. Put soil sample in clean polythene bag
- v. Repeat the 1-4 steps in 15-20 spots
- vi. Mix sample thoroughly dry and crush
- vii. Take sub-sample /composite sample to laboratory for testing

**(c) Outline four advantages of intercropping crops**

**(4 mks)**

- i. Helps to control soil erosion
- ii. Good ground cover helps to smother weeds
- iii. Maximum utilization of the land
- iv. Add soil nutrients in case legumes are intercropped

**(d) Factors considered before selecting a farm enterprise.**

**(4 mks)**

- i. Land topography / drainage
- ii. Suitability of soil to the enterprise
- iii. Social cultural factors
- iv. Taste / preference of the farmer
- v. Availability of inputs
- vi. Size of the land available for the enterprise
- vii. The prevailing climate
- viii. Availability of market for the products
- ix. The period enterprise would take to mature
- x. The current government policy
- xi. The common pests and diseases which may hinder the enterprise when implemented
- xii. Availability of capital
- xiii. Land tenure system
- xiv. Profit margin in relation to price fluctuation

**26. Field production of tomatoes**

**i) Ecological requirements of tomato plants**

- a. Rainfall 760 – 1300mm p.a well distributed
- b. Irrigation in dry areas / dry season
- c. Attitude 0 – 2100 M a.s.l
- d. Soil, deep, fertile, well drained soils
- e. Temperature 18<sup>0</sup> – 29<sup>0</sup>C / warm
  - i. - Soil pH 6 – 6.5

**(1 x 5 =5mks)**

**ii) Land preparations**

- i. Early land preparations before on set of rains
- ii. Clear all the vegetation
- iii. Remove tree stumps
- iv. Plough deep / primary cultivation
- v. Harrow the land to medium tilth
- vi. Prepare planting holes 15cm deep
- vii. Spacing to be 0.9 x 0.6m / 1.0m x 0.5m depending on varieties
- viii. Apply organic manure / tea spoonful DSP

**(1 x 4 = 4mks)**

**iii) Transplanting**

- i. Done early in the morning or late in the evening
- ii. Water the nursery bed well
- iii. Use a garden trowel to lift the seedlings with a ball of soil around the root
- iv. Select only the healthy and vigorous growing seedlings
- v. Place each seedling in the planting hole
- vi. Firm / compact the soil around the base of seedlings



- vii. Mulch the seedlings / shade if necessary
- viii. Water the seedlings

(7 x 1 = 7mks)

**iv) Disease control**

- i. Use appropriate chemical to control disease
- ii. Ensure regular watering to control blossom end rot
- iii. Practice proper field hygiene / roguing the infected plants
- iv. Plant resistant varieties

(4 x 1 = 4mks)

**27. a) Five factors that influence soil productivity.**

- i. Good supply of crop nutrients.
- ii. Well aerated
- iii. Good drainage
- iv. Abundance of useful soil micro- organisms.
- v. Adequate water retention.
- vi. Freedom from plant pests and diseases causing organism.
- vii. Free from noxious weeds e.g. witch weeds.

( 5 x 1 = 5mks)

**b) Qualities of mother plant**

- i. High yielding
- ii. Resistant to pests / diseases
- iii. High quality produce.
- iv. High rooting ability.
- v. Early maturing
- vi. should be compatible

(5 x 1 = 5mks)

**c) Two types of mulching materials**

- i. organic mulches
- ii. Inorganic/ synthetic mulches

(2x1 = 2mks)

**d) For agricultural practices which pollute water.**

- i. Use Agrochemicals in the farm lands.
- ii. Cultivating along river banks encouraging soil erosion, flooding and siltation of streams, rivers etc.
- iii. Washing farm machines directly in water bodies.
- iv. Over – grazing leading to soil erosion and siltation of water sources.

(stating=1mk,Explanation=1mk)

(1 x 1 = 4mks)

c) **Precaution when harvesting coffee.**

- i. Over – ripe dark-coloured cherries should not be picked.
- ii. Under – ripe / green-coloured cherries should not be picked.
- iii. Sort out diseased berries before delivering to the factory to avoid pulping problems.
- iv. Deliver cherries to the processing factory on the day of harvesting.

(4 x 1 = 4mks)

