

OPENER EXAMINATION - TERM 2 2024

AGRICULTURE

FORM 3

MARKING SCHEME

1. Give two characteristics of plantation farming (1 mark)

- Production of one type of crop
- Require large tract of land

2. Name two chemical processes of weathering

- Carbonation
- Oxidation
- Hydration

3. State two advantages of organic farming (1 mk)

- Improves soil structure
- Enhance soil water infiltration and retention
- Provides food for soil microbes
- Production of food free from chemical residues
- Cheaper since there is purchase and chemicals

4. Outline three effects of soil organisms which benefit plant growth (1 mark)

- Improves aeration
- Release soil nutrients when they decompose
- Help in decomposition process
- promote nitrogen fixation .

5. Give two ways in which organic mulch help to conserve water in the soil (1 mark)

- Reduce water loss through evaporation
- Improve soil water infiltration and retention

6. Give two types of labour records

- Labour utilization analysis
- Muster roll

7. Outline four ways in which land consolidation helps to improve farm management (2 marks)

- Proper supervision
- Saves time and transportation cost
- Facilitator soil conservation and farm mechanization
- Legal ownership and title deed used to secure loans

8. State four importance raising seedlings in a nursery bed (2mks)

- Excess sold for income
- Facilitates planting of small seeds
- Production of many seedlings in small area
- Management practices easily and timely carried out
- Transplanting of only healthy and vigorously growing
- provide best condition for growth of seedlings.

9. Give four ways of controlling weeds in a field of maize

- Uprooting
- Cultivation/ weeding with a jembe
- Use of herbicides re: chemical method
- Slashing weeds

10. State three reasons for top dressing pasture (1 ½ mks)

- Increase herbage yields
- Improve nutritive value of crop
- Add soil nutrients

11. Give four reasons for training crops as a field practice (2 marks)

- Plants grow in a designed direction and shape
- Facilitates easy harvesting and spraying
- Clean fruits are produced
- Support plants

12. State three activities the farmer carries out on a store before storing grains

- Cleaning the store/remove debris of previous crops
- Dusting
- Higher germination percentage
- Pure/true to type

13. Give four desirable characteristics of certified seeds. (2mks)

- High yielding
- pure/True to type
- Clean/free seeds
- High germination percentage
- Healthy/free from pests and diseases



14. a. Outline two characteristics of nitrogenous fertilizers

- Highly soluble
- Easily leached
- Scorching /burning effects
- Highly volatile
- Hygroscopic

b. Give the forms in which the following elements are available to plants (1 mk)

- Phosphorous: Phosphate ions (PO_4^{2-})
- Potassium: Potassium ions (K^+)

15. Give four factors that influence the choice of tools and equipment used in Primary cultivation. (2 marks)

- Condition of the land
- Type of tilth required
- Depth of cultivation
- Availability /cost of the tool

16. State four factors that contribute to competitive ability of weeds (2 mks)

- Produce large quantities of seeds
- Seeds remain viable for long
- Ability to propagate vegetative
- Seeds easily and successfully dispersed
- Ability to grow in poor soil condition.

17. Terms;

a. Trellishing

- supporting climbing plants e.g passion fruits (1mk)

b. Stoking

- cutting maize and arranging it vertically in groups in the field (OWTTE) (1mk)

18. Two advantages of strip grazing

- **minimizes chances of animals getting bloat**
- gives more productivity per unit area of land
- the pasture is utilized more efficiently
- comparatively cheaper than constructing the paddocks ($2 \times \frac{1}{2} = 1\text{mk}$)

19. Four advantages of mixed pasture

- **security against total loss due to pest and disease attack**
- high nutrient value and high yields
- lasts longer than pure stand pasture

- maximum use of nutrients.
- better ground cover and better weed control
- economy on the use of nitrogen fertilizer ($4 \times \frac{1}{2} = 2\text{mks}$)

20. a. • A = Tea

• B = sugarcane $2 \times \frac{1}{2} = (1\text{mk})$

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

- Oxygen supply
- Rooting medium
- Correct relative humidity
- Suitable temperature
- Suitable light intensity
- Leaf area $3 \times 1 = (3\text{mks})$

21. a. To show that soil is made of different sized particles ($1 \times 1 = 1\text{mk}$)

b. • C = Humus / organic matter.

• D = Gravel . $2 \times 1 = (2\text{mks})$

c. Soil texture $1 \times 1 = (1\text{mk})$

22.a. Splash / Rain drop

$1 \times 1 = 1\text{mk}$

23.

b. • Soil depth / profile

• Soil type $2 \times 1 = (2\text{mks})$

c. • Wind

• Water

• Human activities

a. Furrow irrigation $1 \times 1 = 1\text{mk}$

b. • Reduce fungal diseases eg 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 */z = (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.

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 minimise 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)**

- Clear vegetation from sampling spot
- Make vertical cut 15-25cm deep (crop land), 30cm pasture
- Take slice with spade/soil auger
- Put soil sample in clean polythene bag
- Repeat the 1-4 steps in 15-20 spots
- Mix sample thoroughly dry and crush
- Take sub-sample / composite sample to laboratory for testing

c. Outline four advantages of intercropping crops (4 mks)

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

d. Factors considered before selecting a farm enterprise. (4 mks)

- Land topography / drainage
- Suitability of soil to the enterprise
- Social cultural factors
- Taste / preference of the farmer
- Availability of inputs
- Size of the land available for the enterprise
- The prevailing climate
- Availability of market for the products
- The period enterprise would take to mature
- The current government policy
- The common pests and diseases which may hinder the enterprise when implemented
- Availability of capital

- Land tenure system
- Profit margin in relation to price fluctuation

26. Field production of tomatoes

a. Ecological requirements of tomato plants

- Rainfall 760 – 1300mm p.a well distributed
- Irrigation in dry areas / dry season
- Attitude 0 – 2100 M a.s.l
- Soil, deep, fertile, well drained soils
- Temperature 18 – 29°C / warm
- Soil pH 6 – 6.5 (1 x 5 = 5mks)

b. Land preparations

- Early land preparations before onset of rains
- Clear all the vegetation
- Remove tree stumps
- Plough deep / primary cultivation
 - Harrow the land to medium till
 - Prepare planting holes 15cm deep
 - Spacing to be 0.9 x 0.6m / 1.0m x 0.5m depending on varieties
 - Apply organic manure / tea spoonfuls DSP (1 x 4 = 4mks)

c. Transplanting

- Done early in the morning or late in the evening
- Water the nursery bed well
- Use a garden trowel to lift the seedlings with a ball of soil around the root
- Select only the healthy and vigorous growing seedlings
- Place each seedling in the planting hole

- Firm / compact the soil around the base of seedlings
- Mulch the seedlings / shade if necessary
- Water the seedlings (7 x 1 = 7mks)

d. Disease control

- Use appropriate chemical to control disease
- Ensure regular watering to control blossom end rot
- Practice proper field hygiene / roguing the infected plants
- Plant resistant varieties (4 x 1 = 4mks)

27. a. Five factors that influence soil productivity.

- Good supply of crop nutrients.
- Well aerated
- Good drainage
- Abundance of useful soil micro-organisms.
- Adequate water retention.
- Freedom from plant pests and diseases causing organism.
- Free from noxious weeds eg witch weeds.(5 x 1 = 5mks)

b. Qualities of mother plant

- High yielding
- Resistant to pests / diseases
- High quality produce.
- High rooting ability.
- Early maturing
- should be compatible(5 x 1 – 5mks)

c. Two types of mulching materials

- organic mulches

- Inorganic/ synthetic mulches(2x1 = 2mrks)

d. For agricultural practices which pollute water.

- Use agro – chemicals in the farm lands.
- Cultivating along river banks encouraging soil erosion, flooding and siltation of streams, rivers etc.
- washing farm machines directly in water bodies.
- Over – grazing leading to soil erosion and siltation of water sources. (stating 1mk Explanation 1mk) (4 x 1 = 4mks)

e. Precaution when harvesting coffee.

- Over – ripe dark coloured cherries should not be picked.
- Under – ripe / green coloured cherries should not be picked.
- Sort out diseased berries before delivering to the factory to avoid pulping problems.
- Deliver cherries to the processing factory on the day of harvesting.(4 x 1 = 4mks)

