

**MARKING SCHEME**

**PAPER 1MAGS JOINT EXAMINATION CYCLE 7 MARCH TERM 1 2020**

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

7. Outline four ways in which land consolidation helps to improve farm management  
(2 marks)
- (1) Proper supervision
  - (2) Saves time and transportation cost
  - (3) Facilitator soil conservation and farm mechanization
  - (4) Legal ownership and title deed used to secure loans
8. State four importance raising seedlings in a nursery bed (2mks)
- (1) Excess sold for income
  - (2) Facilitates planting of small seeds
  - (3) Production of many seedlings in small area
  - (4) Management practices easily and timely carried out
  - (5) Transplanting of only healthy and vigorously growing
  - (6) provide best condition for growth of seedlings.
9. Give four ways of controlling weeds in a field of maize
- (1) Uprooting
  - (2) Cultivation/ weeding with a jembe
  - (3) Use of herbicides rej chemical method
  - (4) Slashing weeds
10. State three reasons for top dressing pasture (1 ½ mks)
- (1) Increase herbage yields
  - (2) Improve nutritive value of crop
  - (3) Add soil nutrients
11. Give four reasons for training crops as a field practice (2 marks)
- (1) Plants grow in a designed direction and shape
  - (2) Facilitates easy harvesting and spraying
  - (3) Clean fruits are produced
  - (4) Support plants
12. State three activities the farmer carries out on a store before storing grains
- (1) Cleaning the store/remove debris of previous crops

- (2) Dusting
- (3) Higher germination percentage
- (4) 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

- (1) Highly soluble
- (2) Easily leached
- (3) Scorching /burning effects
- (4) Highly volatile
- (5) Hygroscopic

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

- (i) Phosphorous: Phosphate ions ( $PO_4^{3-}$ )
- (ii) Potassium: Potassium ions ( $K^+$ )

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

(2 marks)

- (1) Condition of the land
- (2) Type of tillage required
- (3) Depth of cultivation
- (4) Availability /cost of the tool

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

- (1) Produce large quantities of seeds
- (2) Seeds remain viable for long
- (3) Ability to propagate vegetative

- (4) Seeds easily and successfully dispersed
- (5) Ability to grow in poor soil condition.

**17. Terms;**

- a) Trellishing
  - supporting climbing plants e.g passion fruits (1mk)
- b) Stooking
  - 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 x ½ = 1mk)

**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 x ½ = 2mks)

**SECTION B. (20 MKS)**

20. (a) A = Tea  
B = sugarcane (1mk)
- (b)

- Oxygen supply
  - Rooting medium
  - Correct relative humidity
  - Suitable temperature
  - Suitable light intensity
  - Leaf area
  -
21. (a) To show that soil is made of different sized particles 3 x 1 = (3mks)  
(b) C= Humus / organic matter. (1 x 1= 1mk)  
D = Gravel . 2 x 1 = (2mks)
- (iii) Soil texture 1x1 = (1mk)
22. (a) Splash / Rain drop 1 x1 = 1mk
- (b) -Soil depth / profile 2 x 1 = (2mks)  
-Soil type
- (a) -Wind  
-Water  
- Human activities
23. (i) Furrow irrigation 1x1 =1mk  
(ii)  
• 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 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
- Can only be used if fully decomposed.

3 x 1 = (3mks)

**SECTION C. (40 MKS)**

25. (a) Give six precautions observed in pruning mature tea (6 mks)

- (1) Side branches should never be out to encourage spread of tea bush
- (2) Avoid dish-shaped frame
- (3) Prune parallel with slope of ground not horizontal
- (4) Cut branches across to minimise area of wound
- (5) Pruning knife should be sharp
- (6) Small branches and twigs on frame be removed by hand
- (7) 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)

- (1) Clear vegetation from sampling spot
- (2) Make vertical act 15-25cm deep (crop land), 5cm pasture

- (3) Take slice with spade/soil auger
- (4) Put soil sample in clean polythene bag
- (5) Repeat the 1-4 steps in 15-20 spots
- (6) Mix sample thoroughly dry and crush
- (7) Take sub-sample /composite sample to laboratory for testing

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

**(4 mks)**

- (1) Helps to control soil erosion
- (2) Good ground cover helps to smother weeds
- (3) Maximum utilization of the land
- (4) 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**

i) 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<sup>0</sup> – 29<sup>0</sup>C / warm
- Soil pH 6 – 6.5

(1 x 5 =5mks)

ii) *Land preparations*

- Early land preparations before on set of rains
- Clear all the vegetation
- Remove tree stumps
- Plough deep / primary cultivation
- Harrow the land to medium tilth
- 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)

iii) *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)

iv) *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 = 2mks)

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)
- c) **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)