**SET 2**

444/1

AGRICULTURE PAPER 1 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

 -Oxygenation

 - Hydration

-Hydrolysis

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

 - Improves soil structure

 -Enhance soil water infiltration and retention

 -Releases soil nutrients on decomposition

 - Prevents soil erosion

 - Prevents evaporation

-Smoothers weeds

**4. Three effects of soil organisms which benefit plant growth (1 mark)**

 -Improves aeration

 - Causes decomposition of organic matter

-Bacteria fixes nitrogen in soil

 **5. Give two types of labour records**

 -Labour utilization analysis

 -Muster roll

**6 Three 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

**7. State four importance raising tomato seedlings in a nursery bed (2mks)**

 -Excess sold for income

 - Facilitates planting of small seeds

 -Production of many seedlings in sryall area

 -Management practices easily and timely carried out

 -Transplanting go of only healthy and vigorously growling

**8. Give four ways of controlling weds in a field of beans**

 (1) Uprooting

 (2) Cultivation

 (3) Use of herbicides

**9. Reasons for earthing up in crops as a field practice (2 marks)**

 -To improve tuber formation in irish potatoes

-To increase production of seeds in ground nuts

-To improve drainage in tobacco

-To prevent lodging in maize

**10. Three activities the farmer carries out on a store before storing grains**

-Cleaning the store/remove debris of previous crops

-Repairing broken parts

-Dusting using appropriate chemicals

 **11. Characteristics of certified seeds**

- Give high yields

-Higher germination percentage

-Pure/true to type; free from pests and diseases

**12. a) Liming elements**

 -Magnesium

 - Sulphur

-Calcium

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

**(i)** Calcium- ca+2

**(ii)** Potassium – K+

**13. General symptoms of viral diseases in crops (1 ½ marks)**

- Leaf chlorosis

-Leaf curling

 -Mosaic

 -Malformations/galls

-Rosetting

**14. Give four factors that influence the choice of tools and equipment used in Primary cultivation.** - Condition ofthe land

 -Type of tilth required

 -Depth of cultivation

 -Availability /cost of the tool **(2 marks)**

**15. State four factors that contribute to competitive ability of weds (2 marks)**

 - Produce large quantities of seeds

 -Seeds remain viable for long

 - Ability to propagate vegetative

 - Seeds easily and successfully dispersed

**16.** trash lines

Bunds

Cut off drains

Terraces

Gabions

**17.** - Durability.

- Cost.

- Colour.

- Strength.

- Size.

- Flexibility

**18. lack of calcium in the soil**

 -Irregular watering

 - Excessive nitrogen

- Legumes / fix nitrates.

**19. Desirable characteristics of agro forestry**

- Fast growing.

- Multipurpose in nature.

- Has good by-products.

- Deep rooted and narrow root zone.

- Non-competitive ability.

- Light / appropriate canopy.

- Nutritious and palatable to livestock.

- Grow back easily after cutting / easily coppiced.

- Resistant to drought. 3 x 1/2 = 1½mks

**20. Items a maize farmer can enter into his consumable records**

- Fertilizer.

- Pesticide.

- Herbicide.

- Fungicide.

- Seeds.

**Section B ( 20 marks)**

**21.** **Identify field pest A and B.**

A - mouse bird /Bird

B - Rat / Mouse 2 x 1 = 2mks

**(b)** **Two effects of pest expressed in A on maize plant.**

 - Lower quantity of grains / feed on grains.

 - Lower quality of grains.

 - Open husks and encourages grain rotting. 2 x 1 = 2mks

1. **feeding record**

**22.Name four other records kept in the farm (2 marks)**

-feeding records

-field operation records

-labor records

-health records

**23.- a)** Single stem pruning.

b) The main stem is capped at 38cm above the ground to encourage more suckers to grow.

Select two strong and healthy suckers and remove the others. The selected suckers should form a

U-shaped to avoid splitting.

**24. a) To compare porosity/drainage/infiltration water holding capacity of different soils** (1mk)

**b) Identification of soil samples.**

A - Sandy soil

B -Loamy soil (1mk)

**c) Improve soil structure of soil sample c.**

i) Adding organic matter/manure

ii) Liming

iii) Sub soiling/proper silage

v) Draining away excess water **(2mks)**

**25.a) (i)Identify the structure.**

- Trench silo. Rej. Silo 1mk

**(ii) Form in which forage is conserved**

 - Silage 1mk

 **(iii) Role of the following:-**

 Polythene sheet.

 - Prevent rain water seepage.

 - Prevent entry of oxygen / make the silo air tight. 1mk

(b) Drainage.- Drain away the rain water. 1mk

**SECTION C (40 MARKS)**

**26 a) Coffee harvesting procedure.**

Ripe berries/cherries are picked using hands.

Picked berries are put in a well aerated container.

Picked berries are taken to the factory spread on a sisal bag

Sort the berries separating the ripe, unripe and dry berries.

Unripe, diseased, overripe, dry and extremely small berries are sorted out and taken home to be dried to be taken to the factory at the end of the harvesting season as buni.

Good quality ripe berries are then processed in the factory and dried awaiting to be sold

Harvesting is repeated after every 14 days. (5 marks)

 **b)** i) 20 means 20 percent nitrogen / nitrates /N

 30 means 30 percent phosphorous pentoxide / P2O5 2 x 1 = 2mks

**ii.** 200 kg compound fert→ 1 Ha = 10,000 m2

 x kg compound fert. → 5 m x 4 m = 20 m2

 ∴ The plot requires = 

 =  2 x 1 = (3marks)

**c).Ways of maintaining soil fertility. (10 marks)**

(i) Adding manure

(ii) Adding organic fertilizer

(iii) Crop rotation

(iv) Regulation of soil PH

(v) Soil erosion control

(vi) Affrorestation and reafforestation

(vii) Irrigation

(viii) Mulching

(ix) Weeding

(x) Mixed cropping

(xi) Use of appropriate tillage e.g. minimum tillage. **5 x ½ = 2 ½ mks**

**27 a) Factors to consider when selecting primary cultivation implements. (10 marks)**

1. Topography of the land: when land is too steep, a jembe / ox-plough is more appropriate than tractor

 – drawn ploughs.

(ii) Condition of the land: a forked jembe is more appropriate on land that is stony, stumpy and hard.

(iii) Depth of tillage desired: where deep digging is required, heavy tractor – drawn ploughs and subsoilers

are more appropriate.

(iv) Soil type: soils that are hard, heavy and difficult to work on such as clay require heavier implements

 than lighter soils.

(v) Scale of operation: it is more cost effective to use tractor drawn implements on large piece of land

than a smaller one.

(vi) Cost of implement: the cost of certain implements may be prohibitive.

(vii) Capital available: capital availability determines whether to purchase or hire implements or tools.

(viii) Skills / know-how required: tractors requires better skills to operate than a jembe.

(ix) Type of tilth required: a rotavator gives a finer tilth than a disc plough.

(x) Source of power: tractor drawn implements require more power than animal drawn and hand operated

 implements.

(xi) Time available: if time before onsets of rains is limited, then it is advisable to use tractor and animal

 drawn implements than hand tools.

(xii) Availability and accessibility of the implements: implements are not easily available, maybe expensive

 to acquire through purchasing or hiring.

**b)Routine practices in Cabbage production. (10 marks)**

Watering- To be done regularly. Too much water to be avoided since it may lead to water logging and damping off disease.

Mulching-Done after sowing seeds and removed soon after seedling emerge. Mulching minimize evaporation.

Shading-Provide light shade, heavy shade causes etiolation , shading prevent evaporation and damage of seedlings by rain drop

 Pricking out-excess seedlings removed to prevent overcrowding

 Weed control-Weeds controlled by uprooting; Pest controlled by appropriate practices

 Disease control by use of appropriate measures e.g regulating watering to control damping off, use of disease free seed sand use of appropriate fungicides

**c).**Population = Area of land

 Spacing of the crop

 =400cm×300

 90cm × 30cm

 = 44 plants (3 marks)

**d) Prevention of water pollution**

(i) Carrying out soil conservation practices

(ii) Proper disposal of organic wastes

(iii) Treatment of industrial affluent

(iv) Enforcing legislative measures (NEMA RULES)

(v) Adequate storm water control systems.

(vi) Fencing of water sources

(vii) Use of non – chemical methods in agricultural production e.g. use of organic manures.

**28 a)Factors which influence the site selection of a nursery bed. (12 marks )**

Nearness to the water source, for easy watering.; Type of soil-should be well drained, deep and fertile; Topography- should be sited on gentile slopes to prevent flooding and erosion; Previous cropping- should not site a group where a crop of the same family had been sited; Security- should be well protected from theft, animals and birds; Well sheltered place- this is to prevent strong winds which may uproot seedlings or cause excessive evaporation.

b) ploughing / digging done at done to a depth of 20cm;Disc harrowing / secondary cultivation to break big soil clods to fine tilth; there is no application of manure as it induces forking; small Carrots seeds are planted directly in the seedbed; Done towards the end onset of rains; drilled at a spacing of 20cm – 30cm;seed are drilling with hands at a depth of 1 cm ; seeds are covered lightly with soil (8 marks)