**FORM 3 MWAKICAN**

**MARKING SCHEME AGRICUTLURE 443/1**

1. Define.

**Agriculture** is a art and science of growing crops and rearing livestock. 1x1=1mk

1. olericulture:growing of vegetables

**Pomeculture:** growing of fruits

**Floriculture:** growing of flowers 3x½=1½mks

1. **Advantages of mixed farming**

* mutual benefits
* the farmer does not experience a total loss in case one fails
* High production per unit area
* Flow of income throughout the year
* Maximum utilization of labour. 4x½=2mks

1. I**mportance of Agriculture**

* Source of income
* Source of foreign exchange
* Source of employment
* Source of raw materials for industries.
* Act as market for industrial goods. any 4x½=2mks

1. **Way in which health influence Agricultural production**

-Loss of labour.

- Spend a lot of times taking care of the sick

-A lot of money is used in taking care of aids patient instead of National development.

- Orphans become a burden to the society

-Low supply of food. any 4x½=2mks

**6. Negative effect of wind in crop production.**

- Soil erosion agent

-Destruction of farm structures

- Spread pest and diseases

- Blow away rain bearing clouds

-cause lodging of crops.

-Increase the rate of evapotranspiration

-Strong wind leads to destruction of crops. 3x½=1½mks

**7. Aspects of rainfall**

- Distribution

- Intensity

-Amount

-Reliability any 4x½mks

8. (i) Soil in “situ” is soil formed at the same place.

Soil formed in deposition: Soil formed on the highland and later carried and deposited on the low land. 1x1=1mk **NB**:mark as a whole

(ii) **Soil structure: general** arrangement of soil particle.

**Soil texture**: Relative proportion of soil particles in a sample of soil. 1x1=1mk

(iii) **Mixed cropping**: growing of different type of crops on the same piece of land but in different portions.

**Mixed farming**: growing of crops and rearing of livestock on the same piece of land at the same time. 1x1=1mk

**9. Reasons why Burning is not a recommended method of land clearing.**

- Destroys the soil structure by burning humus in the soil

-Kill soil living organism

-Burn all the plants

-Fire can spread unwanted areas.

Leads to excessive loss of moisture

Lead to air pollution

Alters the soil pH any 2x½mk

**10. Tertially operations**

- Leveling

Rolling

Sub-soiling

Ridging

any 3x½mk=1½mks

**11. Importance of carrying out minimum tillage**

-To reduce cost of production

-Control soil erosion

-Maintain soil structure

-Prevent distribution of roots

-Prevent exposure of humus

any 4x½=2mks

**12. Importance of drainage**

- Increase soil volume

-Increase soil aeration

-Raise soil temperature

-Increase microbial activities

To reduce soil erosion

Reduce toxic substances any 4x½=2mks

**13. Reasons why green manure is not commonly used.**

-Most of the crops used are food crops.

-Might use most of the soil moisture leaving very little for the next crop.

-Most of the nutrients are used up by the micro-organisms in the process of decomposition.

-Take time for the green manure crop to decompose. any 3x½= 1½mks

**14.Basic concepts of economics**

* -Opportunity cost

-Scarcity

-Preference and choice 3x½=1½mks

**15.Role of Nitrogen in plants**

-Involved in protein formation

-Part of chlorophyll molecule

Regulate availability of phosphorous.

Increase the size of grains in cereals 4x½=2mks

**16. Characteristics of Nitrogenous fertilizers.**

-Highly soluble in water

-Has a scorching effect

-It is hygroscopic

-Highly volatile

-Has a corrosive effect

-Easily leached any 3 x½=1½mks

**17. Importance of soil testing .**

To know the cause of low yield.

-Help to know the amount of fertilizer to be applied.

-Help to know the nutrient in the soil.

-Help the farmer to know the type of crop to be grown.

Helps to know the type of fertilizer to apply

any 3x½=1½mks

**18. Areas to be avoided when carrying out soil sampling**

-Dead furrows

-Areas where there were old manure heaps.

-Along the boundaries

-Terrace stands

-old fences.

-Between slopes any 2x½mks=1mk

**SECTION B**

19.(I) Pineapple 1mk

(ii) A-Crown

B-Slip

C-Suckers 3x½=1½

(iii) Produce uniform crop. 1x1=1mk

**(iv) Factors to be considered when selecting materials for planting.**

-suitability to the ecological conditions

-purity of the materials

-Germination percentage

-Certified seeds 4x½=2mks

**(v)Factors which determine the depth of planting.**

- Soil type

- soil moisture content

-size of the seeds

-Type of germination 4x½=2mks

20.(i) Multiple stem pruning 1x1=1mk

(ii) -Breaking of stems and branches

-Difficulty in gathering barriers from top points.

-Difficult to spray

-Rotting stumps with age. 4x½=2mks

(iii) Single stem pruning 1mk

**(iv)Factors which determine time of harvesting.**

* Market demand
* chemical concentration
* weather condition
* purpose of the crops
* Market price. any 4x½=2mks

**21**. (i) D-Bench Terrance

E-Gabion

2x1=2mks

(ii) –reduce spread of running water

-Trap the soil

-Heal the gulley with time any 2x½=1mks

**22.(**i) G- Couch grass

H-Black jack

I-Double thorn

J-Thorn apple 4x½=2mks

(ii**) Economic importance of weeds**

G-Difficult to control

I- Irritating to farmers reducing their efficiency.

J-Poisonous to livestock. 3x½=1½mks

**SECTION C**

**23.** **(a) ecological require**

altitude-O-2100 m above sea level

Rainfall-760-1300 mm well distributed over growing period.

Soils-Deep, fertile and well drained soil. 3x1=3mks

**(b)Transplanting**

Water the nursery 3 to 4 hrs before transplanting

-Lift the seedling with a ball of soil

-Using a garden trowel

-Done on a cloudy day

-Transport carefully to the farm

-Plant one seedling per hole

-Firm the soil at the base 5x1=5mks

**(c) Field practices**

-Gapping

-Topdressing

-weeding

-Staking

-Pruning

-control of pest 5x1=5mks

**d)Diseases and their control**

Blossom end rot- regular watering, use calcium fertilizer

Bacterial wilt –crop rotation, crop rotation

Tomato blight –prevent by use of fungicide any 2x2=4mks

**(e) Harvesting**

- Processing variety harvested when fully ripe.

-Fresh market variety harvested when digital end turn red.

Harvested by use of hands

-put in large wooden crates. 3x1=3mks

**24.(a) Nursery management practices.**

* **Mulching:** light mulch should be applied on the nursery bed and removed after the seeds start to germinate.
* **Watering**: done twice in a day morning and evening
* **Weed control:** Done by uprooting using hand.
* **Pricking out**: Removal of excess seedlings from a nursery and planting them in an adjacent nursery.
* **Shading:** Elected over a nursery to the nursery bed. Avoiding dark conditions .
* -Pest and diseases control-done by sterilizing the soil through heat treatment and application of appropriate chemical.
* -**Hardening off:** reduction of watering frequencies and shading .to ensure that it adapts well to the harsh ecological condition. any 5x1=5mks

**(b) Objectives of land reform.**

-To encourage conservation measures on land.

-To achieve increasing productivity of both land and labour .

-To encourage farmers to invest more on land.

- To achieve flexibility in farming patterns to meet changing National Resources

-Encourage commercial production.

-Achieve utilization of National land resources any 5x1=5mks

**(c)Factors affecting the effectiveness of pesticides**

- **Concentration:** correct concentration is more effective in killing target pest.

-**Time application** :it should be timed in such a way that there is no likelihood of rain falling soon after.

**Weather condition**: Pesticide should be applied in such a way that it is done when the pest is more vulnerable.

-**Pest resistance:** When a pest is resistance to a certain pesticide it may not be killed by the pesticide.

-**Pesticides persistence:** When pesticide is persistent it will be able to control pest effectively. 5x1=5mks

**(d) Precautions to be taken when using chemicals in the farm.**

-Read the manufacturers instructions and follow them.

-Wear protective clothing

-Spray towards the direction of the wind.

-Dispose the container in a pit or through burning

-Pumps should be not be cleaned near the water source.

-Never smoke or eat anything when spraying.

-Wash your body after spraying 5x1=5mks

**25.(a) Advantages of landlordism and tenancy system of land tenure.**

- Landlords who can not use the land can get income.

-Idle land is put into agricultural production

-Landless can rent from landlords.

-reduce land disputes.

Ensures equitable distribution of land as Natural Resource. 5x1=5mks

**(b) Factors which determine the spacing of any crop.**

-**Growth habit of the crop**: spreading crops are widely spaced.

-**Purpose of crop:** crop to be used as a fodder are closely spaced.

-**Type of machinery used**: rows should allow free passage of machinery.

**-Soil fertility:** fertile soil can support more crops therefore closely spaced.

-**Size** of the crop when mature. Tall crops require wider spacing.

-**Moisture availability**: In areas with heavy rainfall crops are closely spaced.

**Pest and diseases control**: when crops are closely spaced it is hard for pest to grow from one crawl to the other. 5x1=5mks

**(c) Cultural methods of controlling soil erosion.**

**-Grass stripes**-uncultivated stripes measuring 1-2m wide along the contours

**-Cover cropping:** Establishing of crop that spreads out over the surface.

-**Contour farming:** all operations are done along the contours

**-Mulching:** Covering soil with organic or inorganic materials.

- **Cropping systems**: use farming systems which will adapt well to various environmental conditions.

**-Strip cropping**: crops with little soil cover like maize are grown in alternate strips with those with good ground cover.

**-Grassed waterways.** The area with depression where water flows are planted with grass.

-**Afforestation:**This is growing of trees, pastures and crops. 5x2=10mks

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