

FORM 3

MARKING SCHEME AGRICULTURE 443/1

1. Define.

Agriculture is a art and science of growing crops and rearing livestock.

1x1=1mk

2. olericulture: growing of vegetables

Pomeculture: growing of fruits

Floriculture: growing of flowers

3x½=1½mks

3. **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

4. **Importance 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

5. **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. Tertiarily 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

- 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
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21. (i) D-Bench Terrance
 E-Gabion 2x1=2mks

- (ii) -reduce spread of running water
 -Trap the soil
 -Heal the gully 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. $3 \times \frac{1}{2} = 1\frac{1}{2}$ mks

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. $3 \times 1 = 3$ mks

(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 $5 \times 1 = 5$ mks

(c) Field practices

-Gapping

-Topdressing

-weeding

-Staking

-Pruning

-control of pest $5 \times 1 = 5$ mks

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 $any\ 2 \times 2 = 4$ mks

(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. $3 \times 1 = 3$ mks

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