FORM 3

MARKING SCHEME AGRICUTLURE 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. 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

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. 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

-