

AGRICULTURE FORM FOUR MARKING SCHEME PP 1

1. Role of soil living micro-organism
 - Bring about decomposition of organic matter.
 - Fix free Nitrogen into the soil. 2x½mks
2. Forms in which Nitrogen is available to plants.
 - Nitrate ion NO_3^-
 - Ammonium ion (NH_4^+) 2½mks
3. Vegetative parts used in propagating pineapple.
 - Crown
 - slip
 - suckers 3x½mks
4. Factors which influence the seed rate
 - Germination percentages.
 - number of seeds per hole
 - purity of seeds
 - spacing of the crop 4x½mks
5. Reasons for deep ploughing
 - To improve drainage
 - To control all the perennial weed
 - Facilitate the penetration of roots
 - To break the hard pan
6. Mixed cropping different
 - Growing of different crops on the same piece of land but in different plots. 1mk

Mixed farming.
Growing of crop and rearing livestock on the same time. 1mk
Mark as a whole
7. When opportunity cost is zero
 - When goods & services are freely give
 - when good are unlimited.
 - when goods and services are freely given 2x1=
8. Characteristics of crop used for green manure.
 - Decompose very fast
 - Fast growth rate
 - should be leguminous
 - Highly vegetative
 - Should be hard (grow well in poor soils) 4x½
9. Farming practices which leads to increase of amount of light falling on the leaves
 - Pruning
 - Thinning
 - Pricking out

Proper spacing any 4x1/2mks

-Chemical concentration required

-purpose of the crop

-prevailing market prices any 4x½mks

(ii) Top soil-provide micro-organism 1/2mk

- conserve moisture in the soil

- control of weeds

- improve soil structure any 4x1/2mks

- Act as wind breaks

- Root hold the soil particles together

- Increase the infiltration of water into the soil.

- Land consolidation

- Settlement ad resettlement 3x1/2mks

Case blossom end rot

- Excess leaves and few fruits

- Weak stems any 3x1/2mks.

- Dumping off

- Black rot any 2x1/2mks

- To sell

- To have feed through out the year.
- To use during the dry season
- Prevent wastage
- Ensure maximum utilization of the available land.

18. Top dressing – application of Nitrogenous fertilizer /manure to the pasture
Topping- it is the removal of stems and fibrous material left after a period of grazing.

SECTION B

19. (a) ridging 1x1=1mk

(b) Reasons

- To conserve soil and water
- encourage tuber expansion
- To make harvesting of tuber crops easier.
- Provide open furrows for irrigation. Any 3x1 mks

(c) Leveling

Sub soiling

Rolling any one 1x1mks

20. (a) Trench layering 1mk

(b) can produce more than one of planting materials. 1mk

(c) Relative humidity

- light intensity
- temperature
- leaf area
- Oxygen supply any 3x1 mks

21. (a) 20%

(b) 1 ha 300kg of 30:20:10

1000 m² require 300 kg 1mk

(10x5)m² 1mk $\frac{300 \times 50}{1000} = 1.5\text{kg}$ 1mk

22. (a) earthling up. 1mk

(b) to conserve moisture

Provide support

Control soil erosion 3x1 mk

(c) Sweet potatoes

- Carrots
- Irish potatoes
- Any 2x1 mks

23. (a) **Natural factors influencing soil erosion.**

- Topography – the steeper the land the higher the erosive velocity

- Soil types light soils are easily eroded.
- Rainfall intensity –the high the rainfall intensity the higher the erosive power slashing the soil.
- Soil depth- shallow soils are quickly and easily eroded.
- Vegetables cover- forest protects the soil against erosion .Trees act as barrier protecting the soil erosion agent. 5x2mks

(b) Factors influencing the spacing of crops

- soil fertility –infertile soils crops are closely spaces.
 - Machine to be used – spacing should allow the movement of the machine to be used in between the rows.
 - Pest and diseases control –when crops are well spaced it is difficult for the pest to crawl from one crop to another.
 - Soil moisture; in wet area crops are widely spaced.
 - Growth habit- spreading plants are widely spaced.
 - Purpose of the crop-when crops are grown for fodder they are closely spaced.
- Any 5x2 mks

24. (a) Cultural methods of weeds control.

- Crop rotation-control parasitic weeds
- Clean planting method-planting should be free from weed seeds
- Cover cropping-smothers the weeds
- Mulching-smothers the weeds by denying the weeds sunlight
- Clean seedbed
- Flooding
- Timely planting

(b) Influence of pest to crop production

- -Transmit diseases
- -Increase the cost of production
- Reduce the quality of produce
- Some interfere with the transport system of the plant
- Some introduce toxic substance to the crop
- Lower the yield of the crops. Any 5x1mk

(c)Importance of nursery management

- -Pricking out-to avoid over crowding in the nursery
- Hardening off-ensure that the crop is well adapted to the condition in the main field.
- Watering –ensure that there is enough moisture in the soil
- Mulching-to modify the soil temperature and conserve moisture in the soil
- Spraying using a appropriate chemical to control pest and diseases
- Weeding to prevent competition of nutrients. Any 5x1mk

(d)(i) The level at which the damage caused by the pest cannot be tolerated by the farmer and control measures must be put in place. 1mk

(ii) Lethal temperature –This is use of extreme temperatures to kill the pest

Physical barrier-eg rat deflectors in a granary.

Trapping and killing physically.

Scare crows-Human like structures used to scare the pests

Use of radiation –which attracts and kills the pest. Any 4x1 mk

25(a) Effect of land fragmentation.

- No sound planning
- Small holding do Not allow mechanism
- Soil and water conservation measure cannot be put in place
- Wastage of time in movement from one place to another
- Difficult to control weed, pest and diseases
- Difficult to provide extension services
- Poor supervision-due to the scattered land parcels all over. Any 5x1mk

(b) Process of gulley formation

-moving rain water

Formation of channel by water moving in them.

Widening of the channel

Scouring of the floor of the channel 4x1mk

(c) Factors influencing crop rotation 4mks

- Rooting characteristics –deep rooted crops should be alternated with shallow rooted crops.
- Nutrient requirement –heavy feeder should be grown before the crops with low nutrition requirement.
- Pest and diseases –crops of the same family should not follow each other in a crop rotation programme;
- Weed association –crops associated with a certain weed should follow each other
- Rest period-a fallow season should be provided in a crop rotation programme to improve soil structure.
- Soil fertility a legume in order to fix free nitrogen into the soil
- Availability of capital. Some programme may be so expensive. Any 6x1mk

(d)Importance of drainage in crop production.

- Soil volume –increases soil volume
- Increases the soil temperature
- To reduce toxicity in the soil
- Improve the activities of soil living organism
- Reduce leaching
- Reduce erosion rate of top soil.
- Improve soil structure
- It is a method of land reclamation any 5x1mk

