

FORM THREE AGRICULTURE PP1 MARKING SCHEME

1. -Low capital requirements
-No build up of pest and diseases
-soil structure is maintained
-There is no land dispute 4x½=2mks
2. -Characteristics of soil horizon A
-Dark in colour
-Rich in micro-organism
-well drained
-well aerated
-rich in plants nutrient. 4x½=2mks
3. Soil formed in 'situ' is soil formed in the same position while soil formed in deposition is soil formed on the highland and it is deposited on the low land. 1x1=2mk mark as whole
4. Type of crop to be planted
-Implement available
-the type of soil 3x½=1½mks
5. Soil refinement practices carried out before planting.
6. -Centrifugal pump
-piston pump
-Semi-rotary
-Hydrum pump 4x½=2mks
7. -Most of the crops used are food crops
-The green manure crop might use all the moisture in the soil and leave very little for the next crop.
-Most of the nutrients are used by micro-organism which they will release after they have died and decomposed.
-It takes time for the green manure to decompose delaying the planting time.
8. - Help to compare the performance of different enterprises
- Show the history of the farm
- Help the farmers pay fair taxes
- Help the farmer to detect losses and theft
- It determines the value of the farm
- Makes it easy to share the profits and losses in case partnerships
- Helps in settling disputes
- Shows whether the business is making profits or losses. 4x½=2mks
9. - Has a scorching effect
- It is corrosive
- It is highly soluble in water

- It is hygroscopic
- Highly volatile
- Has a short residual effect
- It is highly leached 4x½=2mks

10. -Easy to treat against pest and diseases.

- They are not bulky
- Easy to handle during planting
- It is easy to use a machine to plant
- It is possible to apply fertilizer and manure with seeds during planting.
- Fertilizer and manure can be easily mechanized
- It is possible to develop new crop varieties due to cross pollination.

11. - Plant with desirable root characteristics but with undesirable products may be utilized to produce desirable product

- It facilitate changing of the top of the tree from undesirable to desirable
- Make it possible to grow more than one type of fruit or flowers on the same plant.
- Help to propagate clones which cannot be propagated in any other way
- It can also be used to repair damaged trees
- Helps shorten the maturity age. 4x½=2mks

12. - Prevent evaporation of water

- Act as insulator :Modifying the soil temperature
- Control soil erosion by reducing the speed of running water and intercepting the rain drops
- Control weed by suppressing their growth
- Organic materials decompose and add nutrient
- It also improves the soil structure by adding humus to the soil.

13. - It can lead to forking of carrots

- Lower the quality of carrots

14. a) Buying

- Gift from a friend
- Inheritance
- Compensation by the government
- Through settlement and resettlement by the government. 4x½=2mks

b)To reduce population pressure in the African reserves.

To transfer lands from the white settlers to the African.

To solve their unemployment problems

To settle former employees of European farmers and squatters

To increase agricultural production through better methods of land utilization.

To maintain production levels achieved by former white settlers and also are foreign exchange from the sale of cash crops

15. - Rill

- Splash
- Sheet erosion
- Gully erosion
- Land slide
- Solifluction
- River bank erosion

4x½=2mks

16. (a)Roof catchment

½mk

(b) J-roof

K-overflow pipe

L-Drainage pipe

M-Tank

4x½=2mks

(c) To avoid contamination.

½mk

(d) Cleaning when the dirt accumulates.

½mk

17. (a)Compost heap

½mk

(b)O-Dry grass

P-Manure

Q-Ash

R-Top soil

2mks

(c)(i) To speed up the rate of decomposition

(ii) To provide the heap with micro-organism

2x½=1mk

(d) To check the temperature in the structure.

18. 20kg of N → 100kg of CAN 11

? 200kg of CAN

20 x200 kg of N

100

= 40 kg of N

19. (a) S-Crown

T-Pineapple fruit

U-Slip

V-Sucker

(b) –Banana

-Sisal

2x½=1mk

- c) Give uniform growth
 -Takes a shorter time to reach maturity

20. (a) Blossom end rot
 (b) -Excess nitrogen
 - Calcium deficiency in the soil
 -irregular watering 21=2mks
 (c) -Use of fertilizers with calcium
 -Use the correct amount of nitrogen fertilizer
 -Watering should be regular 1x1=1mk

SECTION C MARKING SCHEME

21. .(a) Discuss the importance of Agriculture to the economy of Kenya. 5mks

- Source of food: A well fed nation is a healthy nation. Healthy people are able to work in production process
- Source of employment-People are employed directly as farmer or indirectly in the Agriculture related industries
- Source of foreign exchange-when agricultural products are exported to other countries Kenya earn foreign exchange
- Source of raw materials for industries-Most of the agricultural industries require processing before use. Industries have been set up to process agricultural products
- Provide market for industrial good-Crop and livestock production inputs are used such as fertilizers ,livestock drugs –Most of the inputs are industrial products.
- Source of income-When the agricultural products are sold the farmer earns some income.

b) Explain the influence of soil depth on crop production.

- A deep soil profile is able to hold more moisture for plant use
 - Top soil is very rich in micro-organisms which brings about the decomposition of organic matter. Therefore the deeper the layer is the better the soil will for crop production.
 - The top soil is also rich in plant nutrients so that the richer it is the better the soil is for crop production.
 - Loosely packed sub soil allow easy penetration of plants roots, drainage and aeration .This will ensure that erosion does not take place .It must be fairly deep.
 - The nature and composition of the bedrock influences the mineral composition of the soil. If the parent rock lacks some nutrients the soil will also lack the same nutrient.
- 5x1=5mks

c) Give five reasons for carrying out minimum tillage.

5mks

- To reduce the cost of production
- To control soil erosion
- To maintain soil structure
- To conserve soil manure
- To prevent the disturbance of roots and underground structures eg bulb
- To prevent the exposure of humus to a lot of sun heat.

5x1=5mks

d) Explain the importance of treating water in the farm.

- To remove chemical impurities
- To remove sediments
- To kill germs
- To remove odours from drinking water
- To soften water.

22. (a) Describe various ways through which soil can lose its fertility

- **Leaching** – As water penetrates into the soil it dissolves soluble nutrients taking them to the lower layers where they cannot be reached by the plants roots
- **Soil erosion**-The top fertile soil is carried away by the soil erosion agents.
- **Monocropping**-Continuous growing of the same type of crop on the same land drains some nutrients from the soil.
- Continuous cropping-Harvested crops remove large amount of nutrients from soil and are never returned
- **Change in soil pH**-change in soil pH affects the activity of soil micro-organisms and the availability of plant nutrients.
- **Burning of the vegetation cover** –destroy organic matter and micro-organisms
- **Accumulation of salts**-In arid and semi arid areas rainfall is insufficient to remove salts from the soil. Poor drainage and high level of evaporation lead to accumulation of salts changing the soil pH.

5x1=5mks

b) What is the meaning of the following terms as used in agricultural production

4mks

i. Agricultural economics

- Study of how limited resources are distributed to produce goods and resources to maximize output while minimizing the cost.

ii. Scarcity-factors of production are limited. A farmer cannot have the resources

Production needs are unlimited.

Iii.Preference and choice

- Because of the limited resources the farmer must make a choice

iv.Opportunity cost

- When a farmer makes a choice he must forgo the second best alternative of which its return is the opportunity cost.

c)Under what condition is opportunity cost is equal to zero

- When goods and services are freely given
- When there is no alternative
- When resources are in abundance

d)Outline the procedure of soil sampling

- Clear vegetation at the spots
 - Take a slice from a vertical cut using soil auger
 - Put the soil in a clean polythene bags
 - Repeat the steps in different parts of the field
 - Mix thorough samples from different point, drift and crush the soil.
 - Get a sub sample from the mixture
- 5x1=5mks

(e)Describe the chemical method of breaking seed dormancy.

- Soak the seed in concentrated sulphuric acid for two minutes
- Soak for two minutes
- The acid will wear off the seed coat making it permeable to water
- Making the seed coat to be permeable to water
- Do not leave the seed in the chemical for long to avoid killing of the embryo.

5x1=5mks

23. (a)Describe the importance of crop rotation.

5mks

- There is maximum utilization of soil nutrient .Different crop uses different nutrients and at various depth.
- Control of soil borne pest and diseases ie some pest and diseases are specific for some crops family alternating some crops will help to control the pest.
- Control of weeds-Parasitic weeds like striga is specific for the grass family crops to control the weed they are alternate with crops of other families.

- Improve soil structure :The grass eg at the end of crop rotation programme lead to very little disturbance of the soil hence improves soil structure.
- Crop of soil erosion the cover crops ensure that the spaces which were open during raw planting are covered controlling soil erosion. 5x1=5mks

(b) Explain the importance of having a title deed. 5mks

- It can be used to secure credits
- Minimizes land dispute
- Encourages farmers to invest in long-term projects
- One can lease all the land or part of it.
- One can divide the land against the heir. 5x1=5mks

(c)Discuss the role of trees in soil and water conservation.

- Protect the soil from raindrops
- Provide shade which reduces the rate of evaporation
- Act as wind breaks
- The roots hold the soil particles together
- Fallen leaves reduce the speed of running water reducing the erosive power
- Their leaves decay to supply humus to the soil which improve the infiltration of water in the soil. 5x1=5mks

(d) Outline the harmful effects of weeds

- Compete with crops for nutrients
- Some are poisonous to the livestock
- Some weeds are irritating
- Weeds can block the water ways canals-irrigation
- Some have alleropathic effect
- Increases the cost of production by trying to control them.
- Weed lower the quality of pasture
- Some weeds lower the quality of agricultural produce
- Some weeds are parasitic
- Aquatic weed can affect fishing 5x1=5mks