

AGRICULTURE MARKING SCHEME PP1

SECTION A (30 MARKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED.

1.State four roles of mulching in soil and water conservation. (2 marks)

- ✓ Reduces the impact of rain drops to the soil
- ✓ Reduces moisture loss from the soil
- ✓ Reduces the speed of surface run-off
- ✓ After decomposition of organic mulch humus is increased in the soil which increase water retention in the soil

2.State four factors that reduces spacing in crop production. (2 marks)

- ✓ Wider spacing
- ✓ Use of broadcasting method of planting
- ✓ Planting in a fertile soil
- ✓ Placing more than one seed in a hole
- ✓ If the operations are to be done manually.

3.Give four advantages of mixed farming. (2 marks)

- ✓ There is mutual benefit between crops and livestock
- ✓ There is maximum utilization of the available land
- ✓ The farmer has a constant flow of income throughout the year
- ✓ Where legumes are planted, soil fertility is improved
- ✓ The farmer may not suffer a total loss due to diversification

4.List four factors that influence the choice of fertilizer to be used in the farm. (2 marks)

- ✓ The nutrient deficient in the soil
- ✓ The time of application
- ✓ The mode of application
- ✓ The effect of the soil in soil p^H

5.State four parameters which measures the national economic development of a country. (2 marks)

- ✓ Number of pupils per teacher
- ✓ Number of citizens per doctor
- ✓ Gender parity
- ✓ Level of technology

6.List four factors that hinder access to enough clean water in the farm. (2 marks)

- ✓ Inadequate rainfall
- ✓ Siltation of water sources due to erosion
- ✓ Pollution by industrial effluents
- ✓ Clogging of pipes by non-biodegradable materials

- ✓ Inadequate water harvesting and storage facilities

7. Give four reasons why communal land tenure is commonly practiced in pastoral nomadic areas. (2 marks)

- ✓ Helps reduce land disputes since land ownership is not individualized
- ✓ Solves the problem of landlessness
- ✓ Helps reduce land fragmentation
- ✓ There is free movement of livestock
- ✓ Hardworking members of the community reap maximum benefits.

8. Give four effects of high temperature in horticulture farming. (2 marks)

- ✓ Increases incidence of pests such as aphids in vegetables
- ✓ Increases sweetness of fruits such as pineapples and oranges
- ✓ Increases growth rate horticultural crops
- ✓ Increases the rate of evapotranspiration which can lead to wilting of crops

9. State four farming practices that destroy soil structure. (2 marks)

- ✓ Use of heavy machinery on wet soils
- ✓ Maximum tillage
- ✓ Mono-cropping
- ✓ Burning vegetation

10. Give four reasons why a farmer should avoid minimum tillage in a coffee farm. (2 marks)

- ✓ Leads to the formation of hard pans which impede water infiltration
- ✓ Lead to formation of a hard pan which impedes proper soil aeration
- ✓ Leads to formation of a hard pan which impedes root penetration
- ✓ Results to build up of soil-borne pests and diseases

11. State four disadvantages of broadcasting sorghum seeds in the field. (2 marks)

- ✓ Encourages pest and disease spread due to congestion
- ✓ It is difficult to mechanize operations
- ✓ Difficult to establish the actual plant population
- ✓ There is uneven crop establishment leading to uneven germination
- ✓ Difficult to carry out crop management practices
- ✓ High seed rate is used

12. Give four factors that determine the depth of planting. (2 marks)

- ✓ Size of the seeds
- ✓ Type of the soil
- ✓ Type of germination
- ✓ Soil moisture content

13. State four advantages of budding in orange production. (2 marks)

- ✓ Enables propagation of seedless oranges

- ✓ Plants raised through budding mature earlier
- ✓ Damaged plant parts can be repaired through patch budding
- ✓ Enables utilization of plants with desirable root characteristics

14. Give four reasons of ridging in tuber crop production. (2 marks)

- ✓ Promotes expansion of tubers
- ✓ Facilitates harvesting of tubers
- ✓ Prevents greening of tubers
- ✓ Brings nutrients closer to the plant roots

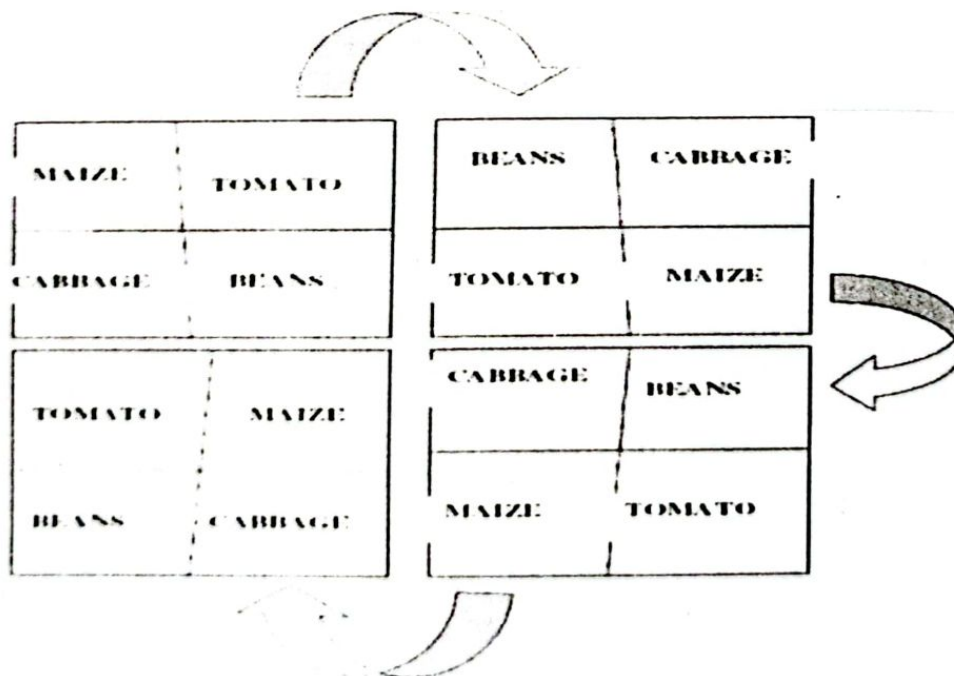
15. Give four factors that determines the size of a water storage tank. (2 marks)

- ✓ Demand of water in the farm
- ✓ Availability of capital
- ✓ Amount of rainfall received
- ✓ Availability of space to place the tank

SECTION B 20 MARKS

ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED.

16. The picture below shows the practice used in the farm.



(a) Identify the practice. (1 mark)

- ✓ Crop rotation

(b) State two factors that determine the choice of crops to be used in the above practice. (2 marks)

- ✓ Crop nutrient requirement
- ✓ The rooting system of the crop
- ✓ Pest and disease infestation
- ✓ Weed attack

(c) Give two ways in which the practice benefits the farmer. (2 marks)

- ✓ The farmer earns income through the year
- ✓ Ensures proper utilization of the land
- ✓ Where leguminous crops are planted they boost the fertility of the soil

17. A form two student found a pest on a tomato fruit feeding with its head inside the fruit and the rest of the body outside.

(a) Identify the pest. (1 mark)

- ✓ American boll worm

(b) Give one economic importance of the pest to a farmer. (1 mark)

- ✓ It increases the cost of production
- ✓ Lower the crop yield
- ✓ Lower the quality of tomatoes

(c) Give three cultural methods of controlling the pest identified in (a) above. (3 marks)

- ✓ Use of a suitable crop rotation programme
- ✓ Burn crop residues after harvesting
- ✓ Rogueing

18. The diagram below shows an arable weed



(a) Identify the weed. (1 mark)

- ✓ Black jack

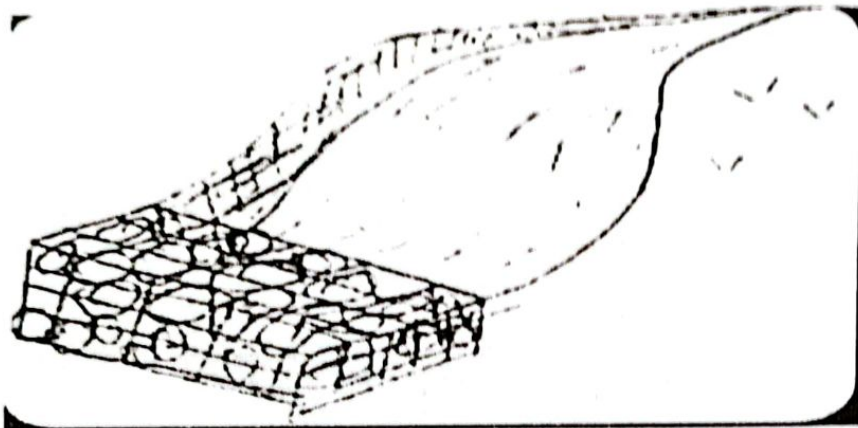
(b) Give three effects of the weed in cereal crops. (3 marks)

- ✓ Lower the quality of cereal crops
- ✓ Competes for nutrients, space and light with the crops
- ✓ Increases the cost of production

(c) State the reason why mechanical control of the above weed should be avoided during flowering stage in cereal crops. (1 mark)

- ✓ To prevent knocking down the flowers, which will affect the yields

19. The following is an illustration of soil and water conservation method.



(a) Identify the diagram illustrated above. (1 mark)

- ✓ A gabion

(b) List two materials used to construct the structure illustrated above. (2 marks)

- ✓ Wires
- ✓ Wood/poles/metal/pegs or rods
- ✓ Concrete/sand/cement/water/ballast

(c) Give two ways in which the structure identified above control soil erosion. (2 marks)

- ✓ Trap soil sediments
- ✓ Slow down the speed of run-off
- ✓ Reduce the volume of run-off

SECTION C 40 MARKS

ANSWER ANY TWO QUESTIONS FROM THIS SECTION IN THE SPACES PROVIDED AFTER QUESTION 22.

20.(a) Explain six advantages of pruning in crop production. (6 marks)

- ✓ Pruning facilitates easy harvesting in certain crops such as coffee, tea, citrus and other fruits
- ✓ Pruning control pests and diseases; pruning destroys the micro-climate pests require for their breeding. Pest and disease affected parts are also removed reducing the spread.

- ✓ Pruning helps to control over bearing in some crops; this helps to maintain the correct ratio of vegetative and productive parts.
- ✓ Pruning helps to economise on use of chemical for spraying since it maximizes the penetration of chemical spray into the bush of the crop.
- ✓ Pruning allows easy penetration of farm machinery for other farm operations.
- ✓ Pruning facilitates the formation of desired shape and height through proper training of the plant.
- ✓ Pruning encourages production of flowers and fruits in some crops like tomatoes.
- ✓ Pruning also helps to regulate the quality and quantity of flowers and fruits.
- ✓ Pruning helps to remove some branches and fruits that rub against each other encouraging adequate aeration.

(b) Explain four cultural methods used to control soil erosion. (4 marks)

- ✓ Grass strips/filter strips; these are uncultivated strips of grass about one-meter-wide in the field. They reduce the speed of surface run-off and trap the soil in the surface run-off.
- ✓ Cover crops; This is planting of vegetation that covers the ground. They allow proper water infiltration and reduce the speed of surface run-off.
- ✓ Grassed water way; This is planting grass on the sides of water channels to slow down the speed of the water hence reduce the rate of soil erosion.
- ✓ Mulching; This is placing of materials on the surface of the soil to cover the land. These materials reduce the rate of evaporation and slows down the speed of surface run-off.
- ✓ Afforestation and reforestation; This is planting of trees to provide a canopy on the soil surface reducing the rate of soil erosion.

(c) Explain two ways in which each of the following factors influences crop production;

(i) level of education and technology (2 marks)

- ✓ Educated farmers can easily understand principals of agricultural production.
- ✓ Educated farmers adapt to new technology with ease compared to uneducated farmers.

(ii) cultural factors (2marks)

- ✓ Religious and cultural believes of community's influence production of certain agricultural produce.
- ✓ Religious and cultural believes of community's influence handling of certain agricultural produce.

(iii) Government policy(2marks)

- ✓ Laws and regulations set by the government on agricultural products influence the production of agricultural products.
- ✓ Laws and regulations set by the government influence distribution of agricultural products.

(d) Outline four ways of improving labour productivity in the farm. (4 marks)

- ✓ Mechanization of farm operations; helps people to work faster and more efficiently.
- ✓ Supervision of labour; ensures workers perform their duties as required.

- ✓ Training of workers; aims at improving worker's skills which improves their productivity
- ✓ Giving farmers incentives; to motivate them
- ✓ Providing the workers with better working tools.
- ✓ Providing prompt payment.

21.(a) Describe ten precautions a farmer should take when using herbicides. (10 marks)

- ✓ Read carefully and follow the manufacturer's instructions.
- ✓ Wear protective clothing.
- ✓ Avoid unblocking blocked nozzles with the mouth.
- ✓ Avoid eating or smoking while spraying.
- ✓ Keep herbicides safely out of children's reach.
- ✓ Wash the equipment thoroughly after use.
- ✓ Dispose used up containers well.
- ✓ Wash your body thoroughly after applying the herbicides.
- ✓ Avoid spraying onto unintended areas such as on a pasture land.
- ✓ Keep proper records on the type of chemicals used.
- ✓ Spray on the direction of the wind or when the weather is calm.
- ✓ Give the crops enough time before harvesting after spraying to reduce effects to the human body.

(b) Explain ten methods of harvesting water in the farm. (10 marks)

- ✓ Dams; barriers constructed across a river or the course of run off to reduce the flow of water and store as much water as possible.
- ✓ Weir; a barrier constructed across a river to raise the level of water to facilitate pumping.
- ✓ Roof catchment; in water is collected from roof tops, it flows down into a gutter and is led by the gutter into a storage tank.
- ✓ Retention ditches; these are channels dug along a contour where run-off water gets trapped. Commonly used to harvest water in arid and semi-arid areas.
- ✓ Rock catchment; This trapping of water from a massive rock using a wall constructed around the base of the rock.
- ✓ Wells; these are holes dug into the ground below the water table. Water collects into the well and is drawn out either manually or by use of a pump.
- ✓ Ponds; these are natural or artificial excavations that hold back run-off water for use by livestock or fish rearing.
- ✓ Micro-catchments-these are systems designed to trap rain water, retain it and allow it to seep slowly towards crops/
- ✓ Mounds; these are rows of stone heaps placed along the contours to reduce the speed of run-off water enabling it to infiltrate into the soil.
- ✓ Run-off strips; consists of strips of cultivated land running along the contours separated from one another by soil embankments.

22.(a) Give five pieces of information kept in breeding record on a dairy farm. (5 marks)

- ✓ Date when the animal was last on heat.
- ✓ The sire that has been used to upgrade the cow.

- ✓ Date of service.
- ✓ Expected date of calving.
- ✓ Actual date of calving.

(b) Explain the advantages of using seeds as planting materials. (9 marks)

- ✓ Planting can easily be mechanized.
- ✓ There are less bulky.
- ✓ Requires less labour to plant.
- ✓ Seeds are easily available making them cheap planting materials.
- ✓ Seeds can easily be mixed with fertilizers during planting.
- ✓ Seeds can be treated against soil-borne pests and diseases before planting.
- ✓ It is possible to develop new crop varieties through cross pollination.
- ✓ Seeds can be stored easily awaiting better conditions for planting without losing viability.
- ✓ Seeds are easy to handle hence requires less time when planting.

(c) Give six benefits of establishing tree seedlings in a containerized nursery bed. (6 marks)

- ✓ Seedlings are provided with a suitable micro-environment for their proper growth.
- ✓ They can easily be transported to the field for planting.
- ✓ Rooting system is not interfered with.
- ✓ Water is conserved around the seedlings.
- ✓ It easy to control weeds.
- ✓ Seedlings can be moved to a conducive environment at will.