

FORM THREE TERM 3 2019

Agriculture p1

MARKING SCHEME

SECTION A [30 MARKS]

1.
 - Reduce competition for nutrients /light /space with crops .
 - To reduce spread of weed seeds in the crop field .
 - To prevent allelopathic effect of weeds on crops .
 - To prevent injury to the farmer and livestock .
 - Avoid contamination of crops with weeds and weeds seeds . [2 marks]
2.
 - Bulky hence difficult to transport .
 - High likelihood of offspring inherited diseases from the mother plant .
 - May lead to overcrowding around the mother plant .
3.
 - Not possible to develop new banana varieties . [2 marks]
 - Necessary in chlorophyll formation .
 - Promotes nitrogen fixation .
 - Activates enzymes .
 - Synthesis of oil in Oil crops . [2marks]
4.
 - When the nutrients are absorbed by roots in the soil with difficult / during dry season .
 - When nutrients are required in smallest possible quantity / apply trace elements .
 - When the crops have to be sprayed regularly with other chemicals e.g. insecticides .[1mark]
5.
 - Nitrogen ,Calcium , Magnesium , Potassium , Sulphur. [1 mark]
- 6 Should be healthy / disease resistant .
 - Should be compatible with several scions .
 - Should be adaptable to different soil conditions .
 - Can withstand water logging . [2 marks]
- 7
 - Do not cut side branches growing below the pruning height .
 - Tea plant should be pruned parallel to the slope .
 - Avoid long slopping cuts as they take long to heal .
 - The pruning knife should be sharp always .
 - In hot areas place cut branches on top of the frame to offer protection against hot sun rays .[2mks.]
- 8
 - Leaf angle to the stem
 - Location of buds / growing points
 - Depth of root system
 - Nature of the leaf surface e.g. hairy ,waxy ,thick cuticle
 - Different height
 - Presence of underground structures[2marks]
- 9
 - Selling a portion of ones land .

- Sub dividing to heirs .
 - Government may need to settle the land less .
 - Shifting cultivation . [2 marks]
- 10
- Rogueing
 - Uprooting volunteer crops .
 - Destroying crop residue .
 - Timely weeding . [1 mark]
- 11
- Control non-aquatic weeds .
 - Control soil borne pests .
 - Avail water for the crop –growth .
 - Avail the relative humidity for pollination in rice . [2 marks]
- 12 Their mode of feeding
- Crops attacked
 - Stage of development of a pest
 - Stage of growth of the crop attacked
 - scientific classification
 - level of damage
 - The place where they are found (2mks)
- 13 .-Gravitational flow of surface materials saturated with water.(1mk)
- 14
- Increase water infiltration hence reduce the volume of run off /speed of run off .
 - Act as wind break .
 - Reduce the impact of rain drops on the soil .
 - Tree roots bind the soil particles together reducing their erosion [2 marks]
- 15
- Free from pests and diseases
 - Free from seeds of weeds
 - Should not be from over mature plants as they take long to decompose
 - They should be rich in nutrients [2 marks]
- 16
- Holds adequate moisture for crop growth
 - Has better aeration
 - Well drained
 - Allows better root penetration / tuber expansion .
- 17
- Encourage conservation measures on land
 - Improve productivity of land and labor

- Encourage commercial instead of subsistence production .
- Encourage farmers to invest more through offering security
- Allow flexibility in production depending on the market
- Effect utilization of natural resources through irrigation

SECTION B

18(i) Ridging

(ii)

- Extension of tubers.
- Make harvesting of root crops easy.
- Prevents soil erosion.
- Conserves soil moisture.

(iii)

- Rolling
- Leveling
- Sub-soiling

19(i) Indore / pit method.

(ii) Vegetables

(iii)

- Brown in colour.
- Light in weight.
- The original material is not noticeable.
- When the composted material has a forest soil smell.

(any 3x1 = 3mks)

20(a) Field operation record. ✓ (1 x 1 = 1mk)

(b)

- Pest and disease control. ✓
- Weeds and their control. ✓
- Harvesting date. ✓
- Yield per hectare. ✓ (any 2 x ½ = 1mk)

(c) Used to calculate the cost ✓ of production for each field. (1 x 1 = 1mk)

21(i) Thorn apple / Datura stramonium. (1 x 1 = 1mk)

- Expectation of future trend of business/price expectation.
- Taboos and cultural /religion beliefs

(ii) Easy spraying and harvesting.

(iii) Control incidences of diseases outbreak such as blight.

(iv) To prevent infestation by soil borne pests.

22(a) (i) R ✓ (ii) S ✓ (2 x 1 = 2mks)

(b)

- It is a source of nutrients / vitamins. ✓
- Can be sold to earn income. ✓

(c)

- Prolongs maturity of tomato fruits.
- Causes cracking of fruits.
- Causes blossom end rot. (2 x 1/2 = 1mks)

(ii) Annual weed. ✓ (1 x 1 = 1mk)

(iii)

- Competes with crops for nutrients, space, light and moisture.
- It lowers quality of farm produce.
- It is poisonous to animals when eaten.
- It taints milk lowering its quality. (any 2 x 1 = 2mks)

(c) (i) To produce clean fruits.

SECTION C

23. (a)

- Breaking seed dormancy
- Burning the seeds
- Scarification/physical breaking of seed coat
- Seeds subjected to heat to destroy hard coat
- Soaking in acid and washing in running water

Stating 1mk explanation-1mk Any 4=(8mks)

(b)

- Purpose of the crop
- Soil moisture content
- Fertility status of the soil
- Growth of the crops
- Type of machine used
- Number of seeds per hole
- Disease/pest/weed control method

Naming 8x 1/2 mks=4 mks

Explaining 8x1/2mks=4 mks

Total=8 mks

(c)

- Purpose of the crop
- Market method
- Concentration of chemical required e.g. tea
- Weather conditions

(4x1=4 mks)

24a) Ten safety precautions that should be taken when using herbicides to control weeds.

- One should wear protective clothing such as masks, gloves, overalls and boots
- Avoid inhaling the herbicides by not smoking while spraying/spray along the direction of the wind.
- Read the manufactures instructions and follow them
- Avoid sucking or blowing blocked nozzles

- Immediately after handling chemicals the user must wash thoroughly to remove chemical traces
 - Herbicides should be stored in a safe place away from food and out of reach of children.
 - Equipment used in herbicides application should be washed in water sources used by humans and animals/to prevent pollutions.
 - Empty containers and left-overs should be properly disclosed off in such a way that they will not pose danger to people, animals or the environment.
 - Avoid herbicides drift to unintended crops/fields/water sources/spray when the weather is calm.
 - Avoid chemical spillage in places that are unintended/where it may cause danger to human and animals.
 - Equipment should be washed thoroughly to avoid damages to crops/animals in subsequent operations
 - Avoid eating or handling food before washing.
- b) Explain ten farming practices which help conserve soil on a farm (10mks)
- Mulching to reduce the speed of run-off
 - Controlling farming by reducing the speed of run-off
 - Terracing
 - Afforestation/ reafforestation/tree planting
 - Establishing and maintaining vegetated water ways to reduce speed of run-off.
 - Cover cropping
 - Minimum tillage
 - Contour ploughing
 - Strip cropping
 - Crop rotation
 - Manure ring/use of organic manure

- Lift using garden trowel, while a hole of soil
- Transport carefully to nursery bed **5 x 1= 5mks**

25(a) Sitting the nursery consider the following

- (i) Cropping history the site should have been planted with a member of the kales family in the previous season
- (ii) The place should be well sheltered from strong winds
- (iii) The place should be accessible **4 x 1= 4mks**

(b) Nursery bed preparation

- The bed should 1m wide to avoid trampling
 - Clean the land and cultivate removing plastics, perennial weeds etc
 - Raise the soil 10-15 cm above ground for drainage
- $4 \times \frac{1}{2} = 2mks$**

(c) Nursery bed management

- Remove mulch as soon as germination occurs
 - Erect shade 0.75m high
 - Watering in the morning and evening
 - Control weed
 - Control diseases
 - Carry out pricking if necessary
 - Harden the seedling when 3-4 weeks
- 4 x 1=4mks**

Transplanting

- Transplant at 4-6 true leaf/stage/10-15cm high
- Water the seedling 4 hours before lifting
- Dig holes 10-15cm in seed bed

