

Maranda Mock 2021**MARKING SCHEME****AGRICULTURE 443/1****1. Crop pathology****Entomology****Soil science****Agricultural engineering****($\frac{1}{2} \times 4 = 2$ marks)****2. - Rainfall intensify**

- **Rainfall Reliability**
- **Rainfall amount**

($\frac{1}{2} \times 4 = 2$ marks)**3. – Soil structure**

- **Soil texture**

(1 x 2 = 2 marks)**4. – Do not wash the spraying equipment in water sources which are used by animals and human.**

- **The remaining chemical should be disposed off properly.**
- **Avoiding spilling during windy day.**

($\frac{1}{2} \times 4 = 2$ marks)**5. - Weeds are prolific seed products.**

- **Weeds seeds have long dormancy periods.**
- **Weeds are able to survive even when the nutrient supply in soil is limited.**
- **Most weeds have effective means of vegetative propagation.**
- **Their seeds are easily dispersed.**
- **Weeds grow very fast.**

($\frac{1}{2} \times 4 = 2$ marks)**6. (a) Invoice – A document issued to the buyer by the seller to show the goods taken on credit.****(1 mark)****(b) Local purchase order – is a document issued to the seller by the buyer to request for the supply of goods on credits.****(1 mark)****7. (Centrifugal/rotodynamic pump**

- **Reciprocating/Piston/Displacement Pump.**
- **Rotary or semi-rotary pump.**
- **Hydraulic ram/hydrum pump.**

($\frac{1}{2} \times 4 = 2$ marks)

8. -date of transaction

- people involved in the transaction**
- type and quantity of goods delivered**
- price per unit of goods**
- total amount of money involved**
- invoice serial number**
- terms of payment**

($\frac{1}{2} \times 4 = 2$ marks)**9. Wind blow away spray****Rain dilute/wash away chemicals****Soil absorb /retain herbicides****Light intensity increase absorption and translocation of herbicides****Temperature increases translocation of herbicides****10. – Chlorosis yellowish.**

- Stunted growth**
- Stems turns brown sometime.**
- Premature leaf fall**

($\frac{1}{2} \times 2 = 1$ mark)**11. i) Pollarding**

- ii) Lopping**
- iii) Coppicing**
- iv) Thinning**
- v) Pruning**

($\frac{1}{2} \times 4 = 2$ marks)**12. i) The crop part attacked**

- ii) The mode of feeding of the pest.**
- iii) Scientific classification**
- iv) Where the pest attack crop field or store**

($\frac{1}{2} \times 4 = 2$ marks)**13. – Provide raw materials to the industries.**

- Provide market for industrial goods.**
- Provide capital used to establish industries.**

($\frac{1}{2} \times 3 = 1\frac{1}{2}$ marks)

14. – Reduce operational cost.

- Minimizes soil erosion
- Maintain soil structure due to minimal disturbance of soil.
- Minimizes damages to crop roots.
- Minimize volatilization.

($\frac{1}{2} \times 3 = 1\frac{1}{2}$ marks)

15. Economic injury level is a situation where pest population cause damage beyond tolerance while integrated pest control is a combination of both chemical and cultural pest control methods used.

(2 marks)

16. i) Use of ponds.

- ii) Use of rock catchment.
- iii) Use of rivers and dams
- iv) Use of root catchment

($\frac{1}{2} \times 4 = 2$ marks)

17. –boundaries

- river abnks
- Terraces
- Slopes
- Homestead

Any first 2 ($\frac{1}{2} \times 2 = 1$ mark)

SECTION B:**18. (a) Indore/Pit method.**

(1 mark)

(b) – It should be sited in a well drained place.

- It should be sited on the leeward side in relation to homestead.
- The site should be accessible.
- Site should be well sheltered place.
- Site should be located near farm.

©) – The age of material used.

- The type of material used.
- The level management practices during preparation.

19. (a) serpentine layering/compound layering.

(1 mark)

(b) In can be used to produce many shoots from the branch while still attached to the mother plant. (1 mark)

(c) – Optimum temperatures.

- High relative humidity which lowers transpiration rate.
- Optimum oxygen concentration.
- Growth hormones/Auxins.
- Adequate moisture supply.
- Low light intensify
- Absence of leaves.

($\frac{1}{2} \times 4 = 2$ marks)

20. a) - Blossom and rot.

(1 mark)

b) - Irregular, watering

- Excess application of nitrogen in the early stages.
- Deficiency of calcium in young fruits.

Reject if identification is wrong

($\frac{1}{2} \times 3 = 3$ marks)

c) - Regular watering

- Liming the soil/addition of calcium
- Mulching to avoid moisture stress
- Top dressing with enough nitrogen

21. a) trench silo

b) silage

c) i) Make it airtight and protect water from getting into it.

ii) prevent runoff from getting into the silo

d) hay
standing forage

SECTION

e) a) **Crop root depth.** Deep-rooted crops should be alternated with shallow rooted crops.

Soil structure. A grass ley should be included in the rotation programme because the soil becomes loose after continued use.

Pests and disease control. Crops from the same family should not follow each other as the same pests and diseases attack them.

Weed control. Crops that are associated with certain weeds should be alternated with those that are not. Crops that are not easily weeded should be alternated with those that are easy to weed.

Crop nutrient requirement. Heavy or gross feeders (crops requiring high amounts of nutrients) should come first in a newly opened land, which is relatively fertile.

Soil fertility. Leguminous crops should be included to improve soil fertility.

b) Control of weeds

Improve soil structure

Control soil erosion

Improve soil fertility

Maximum utilization of soil nutrients

High yield per unit area

Economical in fertilizer use

c) Threshing/shelling. This is the act of removing maize grains from the cobs, beans from the pods or sorghum from the heads. This is done to facilitate subsequent cleaning and storage. It is normally the first operation done after harvesting.

Drying. Grains are dried up to a moisture content of 12-13%. This prevents rotting and fungal attack of the grains while in store.

Cleaning. This is done by winnowing in cereals to remove the chaff from the grains.

Sorting and grading. The produce is sorted and graded according to quality. In coffee the berries are sorted into grade I and II. Grade I has big and well ripened berries. Grade II berries are under-ripe, overripe, diseased or small. The first grade fetches the highest price.

Dusting. This is application of chemical powders on seeds to prevent storage pest attack.

Processing. It is the transformation of the raw material into a final product.

Packaging. It is the placement of produce into containers for storage, sale or transportation. This reduces damage to the produce and also makes it possible for the farmer to quantify the produce and set prices.

f) a i) a budget drawn when minor changes are to be made in an enterprise or in a farm organization (14 mrk)

PARTIAL BUDGET FOR MR OWINO

Debit (-) ✓ Vi	Shs	Cts	Credit (-) ✓ 1/2	Shs	cts
Extra cost			Extra revenue potatoes		
i. fertilizer 2.5 x0.3x1400	1050	0	90x0.3x300	8100	0
i. Labour40x0.3x150	1800	0	Subtotal	8100	0
i. Seeds 200x10	2000	0	cost saved		
Subtotal	4850	0	maize		

Revenue forgone			i)seeds 1 x1350	1350	0
Maize yield			Fertilizers 2x1400x0.3	840	0
50x0.3x120	13,440	0	Total	10290	0
Total	18,290	0			

ii) Extra Revenue + Cost saved ~ extra cost + revenue forgone $10,290 - 18,290 = - \text{sh},8000$

iii) Not to replace maize with potatoes because of a loss of - sh.8000

Allocation of marks

Title ½ mk

Debit ½ mk mark

Credit ½ mk

Entries ½ mk each x 7 = 3 ½ mk

Totals ½ x 2 = 1 mk

Calculation = 1 mk

Total 7 mks

b. Ways of adjusting to risks and uncertainties

- Input rationing
- Flexibility in production
- Diversification
- Taking Insurance
- Contracting / contract farming
- Adopting modern farming methods
- Selection of more certain enterprises (1x5 mks)

c) Cultural measures of controlling erosion

i) Use of grass strips/filter strips

Minimise speed of run-off water

Trap soil contained in run off hence reducing erosive power.

ii) Cover crops-reduce impact of rain drops/ splash erosion

reduce velocity of runoff

iii) .Contour farming

creates ridges of earth which hold water thus reducing run off

and prevent rill erosion

iv). Grassed waterways

Reduces speed of running water

trap eroded soil

v). Mulching - Reduces speed of run off

Reduces impact of raindrops

vi). Afforestation or reafforestation

- Trees act as wind breakers

- Controls wind erosion

- Reduce impact of raindrops

vii). Strip cropping

- Reduces speed of run off
- Traps soil particles from run off(7 x 1 = 7 mrks)

24 a) -land is ploughed and maize planted normally/

- weed the maize farm 2-3 weeks after the onset of rains
- broadcast the pasture seeds
- apply 100-200kg/hacter of SSP
- harvest maize early to expose pasture to sunlight.
- No father weeding is done

b) **Negative effects of wind to crops**

- Increase rate of disease spread
- Contributes to lodging of crops/cereals
- can cause damage to farm structures
- Carries away rain bearing clouds
- Acts as an agent of soil erosion

c) **Production of dry beans**

i. **Varieties**

Canadian wonder/GLP 24

Mwitemania Wairimu/Red Haricot

Rosecoco/GLP 2 Mexican 142

Mwezi Moja/GLP 1004

ii. **Land preparation**

- Clear land
- Plough the land deeply to control perennial weeds / carry primary cultivation
- Harrow the land to a moderate/medium tilth

iii). **Harvesting**

- Uproot dry plants
- Uprooting the plants should be done in the
- Morning when the weather is cool to
- prevent shattering of pods
- Spread on mat/polythene to dry
- Thresh by beating with sticks
- Remove chaff through winnowing
- Dress the beans before packing in bags with suitable dust based pesticides
- Dry to the correct moisture content/12% MC
- Sort out to remove damaged bean seeds

(4 x 1 = 4 mrks)