**FORM FOUR PAPER 1**

**MARKING SCHEME**

**SECTION A ((3OMKS)**   
1. Seed dressing is the process of coating of seeds with insecticides or fungicides chemical to prevent the seed from soil borne diseases. (lx1= 1 mk)

2.  **advantages of row planting**   
- Machines can be used easily between the rows.   
- Easy to establish crop population.   
- Low seed rate is used.   
- Easy to carry out other operations like weeding, spraying and harvesting. (4x ½ = 2mks)

3. **Factors considered when choosing site for tomato nursery.**- type of soil   
- nearness to water source   
- topography   
- security   
- previous cropping   
- well sheltered place (4x ½ =2mks)

4. **Reasons for treating water.**   
- To kill disease causing micro-organism   
- To remove chemical impurities   
- To remove dour / bad smell   
- To remove foreign particles. (3x ½ = 1½ mks)

5. **Effect of HIV/AIDS to agriculture.**- Loss of skilled labour through death of skilled personnel.   
- Wastage of time in caring of patients.   
- A lot of money is spent on treating people with HIV/AIDS.   
- Government and NGOs’ spend a lot of money to control HIV in expense of development ofagriculture. (3x ½ = 1½ mks)

6. **Advantages of overhead irrigation.**   
- Eradicate pests e.g. Aphids.   
- Minimizes wastage of water.   
- Can be used in sloppy areas.   
- Water is evenly distributed.   
- Can irrigate a large area by changing the location of pipes.   
- Foliar fertilizers can be applied using this method (4x ½ =2mks)

7. **Ways of conveying water in the farm**.   
- piping   
- canals   
- containers (3x ½ = 1½ mks)

8. A farmer in PREMIER was advised to apply 150kg CAN/ha, while top Dressing the maize crop.CAN contain 21% N. Calculate the amount of nitrogen applied/ha.

If 100kg of C.A.N→21kg N

150kg of C.A.N→ ?



=31.5kg N/ha (2 ½ mks)

9. **Opportunity cost is zero.**   
- When the item is free.   
- When the item is plenty

- When the item has no alternative  
  
10. **Importance of tissue culture**   
- mass production of prop gules   
- Establish pathogen free plants   
- Establish fast.   
- Requires less space. (3x ½ = 1½ mks)

11. **Principles of agriculture.**   
- Law of opportunity cost   
- Law of diminishing returns   
- Law of profit - maximization.   
- Principle of equal-marginal returns.   
- Principle of substitution (4 x ½ =2mks)

12. **Problems facing marketing of cabbages.**   
- Perish ability of cabbages.   
- Poor transport   
- Lack of marketing information.   
- Change of market prices.   
- Change of government policy. *(*4x ½ =2mks)

13. **Variable costs**   
- cost for fertilizers.   
- Cost of chemicals.   
- Wages.   
- Cost of fuel.   
- Cost of planting seeds. (4x ½ =2mks)

14. **Constituents of soil**   
- soil air   
- soil water   
- soil micro-organisms   
- soil particles   
- Soil organic matter/humus. (4x ½ =2mks)

15. **Product-product relationship**   
- joint products   
- competitive products   
- complementary products   
- Supplementary products. (4x ½ =2mks)

16. Topping — is removal of fibrous materials from the pasture after harvesting or grazing pasture while top-dressing is the application of fertilizers at the base of the pastures. (2mks)

(mark as whole)

17 **factors which influence spacing of crops**   
- type of soil   
- growth habit   
- soil fertility   
- soil moisture   
- number of seeds per hole   
- use of the crop   
- Occurrence of pests and diseases. (5x ½ =2 ½ mks)

**SECTION B ( 20MARKS)**

18 a)

A - Devil’s horse whip(Achyranthes apora) ( ***1mk)***

***B -*** Datura stramomium (Thorn apple) ***(1mk)***

b) - Poisonous to livestock

* Competes with crops for nutrients / light / water or space
* Increase cost of production
* Lower yields / qualit***y 1x1 = 1mk***

1. -Enables land owners / landlord to earn income from land

* Enable people who have no land to have acres to farmers land
* Idle land put into productive use
* Enable tenants to increase / decrease acreage of land leased depending on profitability

***½ x 4 = ( 2mks)***

19 - Read the label / manufacture instructions and follow them

* Measure the required amount of fungicide
* Place the fungicide into a container and mix thoroughly with a little water / pre-mix (pre-cream) until it forms a uniform slurry
* Pour the mixture into the knapsack sprayer through the sieve
* Top up / add up to the required level on the knaprack sprayer
* Spray the mixture onto the cap as required ***1 x5 = 5 marks***

*Observe the procedure*

20)a) Root prunning / trimming

b) - Build up of strong rooting system / compact system .

* Encourage formation of lateral roots
* Make lifting easy
* Prevent root damage
* Increase survival rate during transplanting
* ***1 x3 = 3 mks***

c) - To prevent soil erosion / water run off

* Prevent roots from being exposed
* Protect seedlings from damage

***1 x2 = 2 mks***

21) a) Elasticity of Demand = % change in Quality Demand

% change in price

ie ED = % ∆ in QD

% ∆ in P√

% change in QD =  x 100 =  x 100 = 10 %√

% change in price =  x 100 =  = -20% ( mark as a whole)

ED = √ ( Mark as awhole)

b) Inelastic demand ( i.e. since ED is less than 1)

SECTION C ( 40 marks)

22.a)

* Pick flowers selectively
* Pick flower with horizontal petals / three to two roses of disk florets
* Use fore finger and thumb
* Pick by twisting the lead so that no stem is left attached
* Put the pricked flowers in woven baskets ***1x 4 = ( 4mks)***
* Picking starts 3 -4 months after planting

b) - Picked flowers are put in woven baskets to allow ventilation and avoid fermentation

* Wet flowers should not be picked since they heat up and ferment
* Should not be comp[acted to avoid heating up and fermentation
* Suitable picking intervals 14 – 21 days to avoid overgrown or young flowers
* Break flower stalks to maintain quality ***1 x6 = 6 mks***

23 a) ***Land preparation***

* Clear the land to remove all stumps
* Dig, plough the land to remove perennial weeds / roots
* Harrow the land ; to a fine filth
* Prepare the land during the dry season / before the *rains* ***1 x5 = 5 mks***

b) ***Pasture establishment***

* Select a desirable variety of grass for the ecological condition / select the correct

variety for the same zone

* Plant or the onset of rains / plant early
* Use certified seeds
* Drill / broad cast the seeds evenly
* Apply phosphatic fertilizers or appropriate rate
* Use ssp rate of 200- 300 kg/ ha
* Use recommended seed rate for the variety
* Use 1.5-2 kg /ha PGS / 5-10 /ha for any available seed
* Drag a twig / gunny bag to cover the seeds lightly
* Cover seeds 3-5 times the diameter of seeds / depth ***1x8 = 8 mks)***

***c)Maintenance***

* Control weeds by uprooting /use herbicides
* Top dress with nitrogenous fertilizers
* Top dress with nitrogenous fertilizers
* Top dress in split application
* Cut / graze in the initial stage when 4- 6 months
* Control pests and diseases when they appear
* Avoid grazing when too young / Early defoliation
* Topping posture using appropriate method when to stemmy
* Carry out controlled grazing
* Irrigate when desirable
* Re – seeding when need ***be 1x7 = 7mk***

24a) - What extra coats will be involved in the change

* What costs will be saved
* What extra revenue from the change
* What revenue will be fore gone
* Is the change worthwhile
* ***(1 x4) = 4 mk***

b) - When replacing one enterprise with another

* When expanding are enterprise to the expense of another / reduce another
* When introducing an enterprise which is subsiding to the existing one
* When replacing one technique of production with another
* (*1x4) = 4 mks*

c)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Debit (-) | ksh | Cts | **Credit** (+) | ksh | cts |
| **EXTRA COSTS BEANS**  Fertiliser  2 ½ x 0.3 x1400  Labour  40x0.3x150  Seed  200x10  **SUB-TOTAL**  **REVENUE FOREGONE**  **MAIZE YIELD MAIZE**  56X0.3X1200 | 1050  1800  2000 | 00  00  00 | **EXRA REVENUE BEANS**  Yield 90x0.3x300  **SUB TOTAL**  **COSTS SAVE**  SEED  1X1350  FERTILISER  2X0.3X1400 | 8100 | 00 |
| **4850** |  |
| **8100** | 00 |
| 20160 | 00 |
| 1350  840 | 00  00 |
| **TOTAL** | **25010** | 00 | **TOTAL** | **10290** | 00 |

(EXTRA REVENUE +COST SAVE) – (EXTRA COSTS +REVENUE FORGONE)

(4850+20160) – (8100+2190)

-14750

If mzee mkulima replace maize for beans he will experience a lose of 14750 so he should not replace maize with beans.