FORM FOUR CLUSTER KCSE MODEL 1

AGRICULTURE PAPER 1 ANSWER

SECTION A (30 Marks)

Answer all questions in this section in spaces provided.

1. - Date of payment

   - Type of goods or services the payment was made.

   - Amount of money involved in the transaction.
   - Signature of the person receiving the money.

   - Revenue stamp. 4 x ½ =2 marks

2. - Conserve soil/water

   . - Maximize production.

   - Maximize Utilization of nutrients in the soil.

   - Control weeds. - Control pest and diseases.

   - Diversification/spread risks.

   - Maximize labour utilization.

   - Improve soil fertility if legume are include.

   - Maximize utilization of land. 4 x ½ = 2 marks

3. - Save time and money.

   - Make it easy to have sound farm plan.

   - Makes supervision easy.

   - Facilitates mechanization.

   - Makes it easy to carry out soil conservation measures. 3 x ½ =1 ½ marks

4. - To avoid wastage.

   - Excess forage can be sold

   - To ensure enough supply throughout the year. 3 x ½ = 1½ marks

5. Seed dressing is the coating of seed with a fungicide or an insecticide or both while seed inoculation is the coating of legume seeds with rhizobium strain of bacteria to encourage nodulation/so as to fix nitrogen.(Mark as a whole) 1x 1= 1mark

6. . Savings

   Credit facility

   Grants 3 x ½ = 1 ½ marks

7. - Increase soil aeration.

- Increase soil volume.

- To raise soil temperature.

- To increase microbial activity.

- To reduce toxic substances.

- To reduce soil erosion. 4 x ½ =2marks

8. - Soil fertility.

- Rainfall

- Forage productivity.

- Types of pasture either mixed or pure.

- Pasture persistence to grazing pressure. 3 x ½ = 1 ½

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10. - Loss of labour when a worker dies.

- Time lost when seeking medical services.

- Loss of resources in paying hospital bills.

- Loss of motivation to invest in agriculture.

- Increase cost of living for Aids patients.

- Reducing their purchasing power. 2 x ½ = 1 mark

11. - Add organic matter through leaf fall. This recycle soil nutrient to soil surface.

- Help to control soil erosion.

- Improve drainage of swampy areas

. - Creating of suitable micro-climate. 4 x ½ =2 marks

12. . - Loss of top soil forever

. - Loss of soil micro-organism.

- Cause silting problems in dams and rivers.
- Lead to decline in fish production due to sedimentation and silting in lakes and rivers.
- Exposes underground water pipes and destroy roads. 4 x ½ = 2 marks

13. . - Suitability of ecological condition.

    - Free from disease.

    - Free from pest

    . - Ability to germinate.

    - Keeping quality.

    - Mother plant characteristics

    . - Size of vegetative material. 4 x ½ = 2marks

14. . - Number of seeds per hole.

    - Soil fertility.

    - Moisture availability.

    - Purpose of crop.

    - Size of the farm/land.

    - Spacing used. 4 x ½ = 2 marks

15. . - Crop root depth.

    - Crop nutrient requirements.

    - Weed control.

    - Pest and disease control.

    Soil fertility.

    - Soil structure. 4 x ½ = 2 marks

16. . - Inheritance

    - Settlement and resettlement by the government.

    - Buying land.

    - Compensation. 4 x ½ = 2 marks

17. . - Mulching

    - Early planting
    - Land fallowing
    - Contour cropping/contour farming
    - Minimum tillage
    - Planting early maturing crops. 4 x ½ = 2 marks

18. . a) Forking – Avoid addition of organic manure to the soil. ½ mark

b) Greening – Earthing up shoulders of carrots. ½ mark

SECTION B (20 Marks)

Answer all questions in this section in spaces provided.

19. (i) - Mallow weed/Malva verticillate 1 x 1= 1 mark

(ii) - Poisonous/toxic to livestock - Alternate host for insect pest 'cotton stainers. 2 x 1= 2 marks

(iii) - Mechanical (accept any specific method)

- Biological - Cultural (accept any specific method)

- Chemical (accept any correct chemical 2 x 1= 2 mark

20. . (i) - Budding/bud grafting/T-budding 1 x 1= 1 mark

(ii) - Help to exclude water and air. - Make tight contact between bud and rootstock. 2 x 1= 2 marks

(iii)- Should be healthy/free from pest and disease attack.

- High resistance to soil born diseases.

- Well adapted to wide range of soil condition.

- High compatibility with different scion. 2x 1= 2 marks

21. . (i) To show the soil is made up of different sized particles. 1 x 1= 1 mark

(ii) M - Floating organic matter/humus

N - Water with clay particles and dissolved minerals.

P - Sand 3 x 1= 3 marks

(iii) Aids in the dispersion of particles. 1 x 1= 1 mark

22. . (i) Common rat/rat 1 x ½ = ½ mark

(ii) Field pest /storage pest 1 x ½ = ½ mark

(iii) -Eats stored produce/grains.

-Contaminate grains with excreta -Making holes into containers.

-Habour fleas which transmit plague to human beings. 4 x ½ =2 marks

(iv) -Trapping and killing
-Suffocation
-Physical barriers/rat proofing 2 x 1= 2 marks

SECTION C (40 Marks)

Answer all questions in this section in spaces provided.

23. a)- Crop rotation- This help to break the life cycle of pathogen/disease causing organism.
- Rogueing/destroying infected crops-This stop the disease from spreading further

. - Close season-It helps to break the life cycle of pathogen and disease.

- Early planting-/timely planting-enables the crop to establish faster before attack.

- Proper spacing- minimizes disease spread in some crops.

- Planting disease free/use of clean planting material.

- Use of certified seeds- This prevent introduction of pathogen into the field.

- Weed control- controlling weed prevent them from habouring some pathogen.

- Application of appropriate chemicals- This kills the pathogen.

- Use of resistant varieties- resistant varieties has a natural disease resistance ability.

- Seed quarantine- prevents introduction of pathogen into the farm from other areas.

- Heat treatment of seed- It kill microorganism that causes disease

- Use of clean equipment- it prevent contamination of planting materials with pathogen.

- Proper plant nutrition/application of manure and fertilizer- this prevent deficiency disease and enables establishment of vigorous growing crop that can resists disease. (5 x 2=10 marks)

b) - Avoid picking wet flowers

- Flowers should be put in wet basket.

- Avoid any form of contamination.

- Do not compact the flowers in the basket to avoid fermentation.

- Dry the flowers soon after harvesting. 4 x 1= 4 marks

c) - Plant at the same depth.

- Plant seeds at the same time.

- Plant seeds at uniform soil moisture content.

- Practice/prepare field to uniform level.

- Select seeds of same size/type and variety.

- Treat seed against soil borne pest and diseases.

- Irrigate seed uniformly.

- Break the seed dormancy.
- Select seed of the same age/dormancy period.
- Plant seed which are disease and pest free. 6 x 1= 6 marks

24. . a)- The farmer is able to predict the profitability of an enterprise.

- Enables the farmer to detect problems easily so that correction is done in good time.

- Assist the farmer to make management decisions especially when comparing two alternative projects.

- Helps the farmer in making effective change in the organization.

- Ensure a periodic analysis of the farm business.

- Helps in estimating the viability of an enterprise.

- Assist the farmer when negotiating for agricultural credit.

- Encourages the farmer to be efficient with the aim of meeting the projected targets.

- Helps in controlling various aspects of production in the farm.

- Act as a record to be used for future reference. 5 x 1= 5 marks

b) -Clear the vegetation - Plough the seed bed and eradicate perennial weeds.

- Harrow the land to a fine tilth.

- Prepare land early /during the dry season.

- Roll the seed to firm it. - Select a suitable variety/cultivar

- Plant the seeds at the onset of the rains.

- Apply phosphatic fertilizer during planting.

- Drill/broadcast the seeds evenly

- Drug gunny bags to cover the seeds.

- Control weeds by uprooting.

- Apply full doses or split doses of nitrogenous fertilizers at the right time.

- Control field pests/control moles by trapping or flooding. 7 x 1= 7 marks

c) - Reduce quality of farm produce.

- Compete for growth factors(nutrients and light with crops)

- Acts as alternate host for pests and diseases.

- Stinging weeds can cause considerable irritations.

- increases costs of production.

- Some block navigation

. - Block irrigation channels.
- Poisonous to animals.
- Some are allelopathic.(i.e releases some toxins)
- Reduce pasture quality. 8 x 1= 8 marks

25. . a) -Poor soil/infertile soil with little nutrients.

- Poor weed control leading to competition for nutrients.

- Low rainfall/too much rainfall/unreliable rainfall.

- Pest and disease attack on crops.

- Extreme soil pH /too acid or too basic soil.

- Damage by hailstone causing defoliation.

- Inappropriate soil depth that harm root penetration.

- Extreme light intensity/too high/too low.

- Presence of mist reduces photosynthesis of crops.

- Excessive wind that destroy and increase transpiration. 8 x 1= 8 marks

b) -To establish ownership of land

. - Title deed can be used to secure credit/loan.

- Land dispute are minimized.

- It encourages farmers to invest in long term investment.

- Enables land owners to sell part or whole of the land. 4 x 1= 4 marks

c) i) Grass strips/filter strips

-Are uncultivated strip measuring 1-2 metres wide along the contour.

-Has grass that reduce the speed of flowing water and filter out soil.

ii) Cover cropping -Is the establishment of a crop that spreads out the surface of the soil to provide cover.

-Prevent impact of rain drop and movement of soil.

- Prevent soil from being baked hard by the sun hence preventing soil moisture and volitile soil nutrients.
iii) -Contour farming -Operations are done along the contour.
-Tillage and planting are done across the hill to create ridges of earth which hold up water and prevent rill erosion by reducing ran off.

iv) Mulching -Is a covering of soil with organic or inorganic materials

. -It prevents splash erosion, reduces speed of run off, reduce evaporation and increase organic matter and water retention.
(v) Cropping system Carrying out crop rotation, use of manure and fertilizers, correct spacing of crops, intercropping, use of ridges along contours.
(vi) Strip cropping

-Alternating crops with little soil cover and those with good soil cover

-Helps control movement of soil.

vii) Grass /vegetated water ways

-Slows the speed of water and trap soil.

-Trap soil hence preventing further erosion.

viii Afforestation/re-afforestation Afforestation- is planting of trees while reafforestraton is planting of trees where forest have been cleared.

-Protect soil from raindrops,

provide shade and reduces loss of moisture, act as a wind break,

reduce speed of raining water and leaves decay to supply humus to soil,

increase water infiltration.