**SET 8**

**443/1**

**AGRICULTURE PAPER 1**

**MARKING SCHEME**

**SECTION A (30 MARKS**)

1. a) Involves sowing small seeded pasture grasses under the established arable crop.

(1x1=1mark)

b) Sowing of one pasture crop in an established or existing pasture e.g. planting desmodium over Rhodes grass. (1x1=1mark)

c) Process where during decaying proteins from dead animals and plants are broken to ammonia and other substances by putrefying bacteria. (1x1=1mark)

* Wood should be only 1 year old or less
* Healthy and well developed visible vegetative buds
* Be mature and relatively hard shoots preferably from middle portion.
* Obtained from centre portion 2/3 of the shoot base
* Pathogen free
* From high yielding mother trees (any 4x1/2=2 mks)
* Cheaper and more convenient to apply saving on time, cost and labour
* Balanced in all plant nutrients
* Easy to store as they do not form lumps when stored for long (any 2x1/2=1mks)
* Contains more nutrients and organic matter for crop growth
* Provides good medium for root growth and support
* Facilitate aeration and good drainage
* Discourages soil erosion and surface run off. (4x1/2=2 mks)
* Application of organic matter/manure into the soil
* Minimum tillage
* Tilling at the right moisture content
* Crop rotation
* Cover cropping
* Mulching
* Intercropping
* Mixed cropping ( any 4x1/2=2 mks)
* Makes the seed come into contacts with the soil moisture
* Promote uniform germination of the tiny seeds
* Protect the top soil layer and tiny seeds from being blown away by wind. (any 2x1=2mks)
* Relates to production of a given quantity of product in a given period of time.
* When all costs are analysed and converted into monetary value they help to indicate the most profitable level of production.
* Used to calculate gross margins (4x ½ =2 mks)
* Plant population and seed rates
* Time spent in planting
* Weed control. (any 2x½ = 1mk)
* Invoice
* Statement of accounts
* Bank statements
* Receipts
* Delivery note
* Purchase order. (any 3x½ =1½ mks)
* Such companies engage in monopolistic practices
* If management is insufficient big losses be may incurred
* Where ownership is foreign e.g. Delmonte benefits to the country in which estate is situated are limited to employment creation and paying taxes to government.
* Manner in which they are organized are liable to labour and social problems.

(any 4x ½ =2 mks)

* Leaf chlorosis
* Leaf curling
* Mosaic
* Malformations
* Rosetting. (4x½ =2 mks)

1. • Well sheltered place

* Security
* Previous cropping
* Topography
* Nearest to the water source
* Type of the soil.

13. Seed dressing-coating of seeds with fungicides or pesticides to protect them against soil borne diseases and pest. (1x1=2mks)

Seed inoculation-coating of legume seeds with the right strain of nitrogen fixing bacteria, Rhizobium

(1x1=1mk)

1. • Encourage fresh regrowth

* Improve yield in the next season
* Reduce incidences of bud diseases. (1x½ =3 mks)
* Proper supervision of land
* Economic use of time and saving on transportation cost
* Agricultural advice by extension officer
* Soil conservation and land improvement
* Constructions of permanent structures e.g. fencing and building
* Economic operations of activities
* Weeds, pest and diseases control is enhanced
* Sound farm planning and adoption of crop rotation programme. (5x½ =2½ mks)

**SECTION B (20 MARKS)**

1. i)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| MAKAU’S FARM  Balance sheet  As at 30th June 2011 | | | | | |
| Liabilities | Sh | Cts | Assets | Sh | Cts |
| Current liabilities  Creditors  Equity overdraft  Long term liabilities  Loan: Equity  Total liabilities | 49,000  24,000  180,000  253,000 | 00  00  00  00 | Current assets  Cash at hand  Cash in bank  Debtors  Goats  Fixed assets  Oxplough  Working tools  Land  Networth | 15,000  50,000  18,000  48,000  20,000  15,000  70,000  17,000 | 00  00  00  00  00  00  00  00 |
| Total | 253,000 | 00 |  | 253,000 | 00 |

(6mks)

ii) Its insolvent, the value of liabilities exceeds assets value, the business can’t meet all that it owes

other firms. (2x1= 2mks)

1. a) root pruning (1x1=1mk)

b)

* Tree seedlings develop strong, short and dense roots systems
* Minimizes damage to seedlings during transplanting
* Lifting seedlings using transplanting is easier. (3x1=3mks)

c)

* Agrisilviculture
* Silvopastoral
* Agrosilvopastoral (3x1/2=1½ mks)

1. i) American bollworm (1x1=1mk)

ii) Spraying with insecticides

Crop rotation (2x1=2 mks)

iii) Beans

Tomatoes (1x1=1mk)

1. a) Staking (1x1=1mk)

b)

* Production of clean fruits
* Easy to harvest/spray
* Increase yield as leaves are well exposed for photosynthesis
* Prevent/protects fruits from rotting due to contact with soil. (4x1=4mks)

1. Trellising (1x1=1mk)

**SECTION C (4O MARKS)**

1. a)

* Bargaining for better prices of farm produce
* Ensuring adequate and timely supply of farm produce.
* Bargaining for reasonable and affordable prices of farm inputs
* Publishing monthly magazine known as “farmers” voice
* Offering technical services to farmers.
* Provision of better infrastructure e.g. roads/electricity/telephone services to facilitate quick delivery of farm produce.
* Provision of loan facilities
* Adequate control of crop and livestock pest and diseases.
* Looking for markets of farmers produce both locally and overseas
* Representing Kenyan farmers in the international Federation of Agricultural producers.

(Any 5x1=5 mks)

b)

* Size of the farm
* Environmental factors
* The current trend in labour market
* Farmer’s objectives and preferences
* Possible production enterprises
* Existing market conditions and price trends. (5x1=5mks)
* Picked manually
* Grading of seed cotton starts during harvesting.
* Seed is sorted into two grades AR (safi) and BR (fifi)
* AR is the first grade free from seed damage and foreign matter/ should be white
* BR may not have all the required qualities
* Picker to have two containers one for grade AR and the other for grade BR
* Care should be taken to ensure no foreign matter such as leaves/ small twigs are mixed with seed cotton.
* Picking is avoided when cotton is wet due to rain/morning dew.
* Sisal bags not used because the fibres may mix with cotton causing problems during ginning.

(10x1=10mks)

1. i. a)

* Seedbed dug deeply (depth of 20cm)
* Soil worked to a fine tilth
* No application of manure for it induces forking
* Makes rows of drills 30cm apart. (Any 3x1=3mks)

b)

* Mature at 3-5 months
* Done depending on the use intended for the crop
* Harvesting by pulling out the crop
* Ensure soil is moist during harvesting
* Alternatively use a plough called carrot lifter to loosen the soil before lifting.
* Mature carrot tubers are 2½ -3cm thick at top (any 4x1=4 mks)

ii)

* **Mulching-**smothers weeds
* **Cover cropping**-smothers weeds
* **Crop rotation**-when some crops that are associated with a certain weed are rotated weeds do not germinate e.g. striga in cereals and sugarcane farms won’t germinate if dicots are grown.
* **Timely planting**-Allows crops to establish early before introduction to weeds.
* **Clean seedbed**-This starts crops well and effectively compete with weeds
* **Flooding**-Mainly in rice fields - discourage non aquatic weeds.
* **Use of clean seed/planting material**- prevents the introduction of weeds to the farm land.
* **Proper spacing**-helps to create little space for weed growth and forming a canopy which suppress weeds. (any 5x2=10mks)

iii)

* Essential for protein synthesis
* Increase the oil content in oil crops e.g. groundnuts/soya beans.
* Essentials in the formation of some vitamins e.g. Vitamin B1
* Essential for the activation and activities of certain enzymes e.g. co-enzyme A
* Influences nitrogen fixation by legumes.
* Aids in the formation of cells
* Essential in chlorophyll formation
* Essential for carbohydrate metabolism. (any 3x1=3 mks)

1. a)

* **Soil fertility**-materials derived from fertile origins end up in different destination
* **Creation of lakes**- moulds or blocks of rocks have dammed rivers courses causing temporarily lakes
* **Damaging property and causing loss of life** e.g. farmland, buildings, homes, lines of communications/transport routes/loss of life.
* **Soil erosion**-on steep slopes
* **Permanent scars on landscape**-No support for vegetation and remain unattractive.
* **Tourist attraction**-e.g. weeping rocks of Kakamega or kit Mikai in Seme, Kisumu County

(Any 6x1=6mks)

b)

* Help to propagate clones that cannot be propagated in any other way
* Helps to shorten maturing age
* Possible to grow more than one type of fruit on same plants.
* Plant with desirable root characteristics e.g. disease resistance, vigorous root system but with undesirable products to produce desirable products.
* Helps to repair damaged plants (any 4x1=4mks)
* Training-Formally or informally-formally in colleges/schools. Improved through farmers training centres, field days, agricultural shows, demonstration farms.
* Farm mechanisation-Incorporating machinery in farm’s operation
* Giving incentives and improving terms and conditions of services
* Labour supervision-keeping proper and up to date records on the time work commences and ends, type of work and amount done, records of absenteeism, malingering, theft/robbery. Etc.
* Assigning specific task-governed by labour skills, one clearly knows clearly their duties

(any 5x2=10mks)