**FORM 3 END TERM PAPER 1**

**MARKING SCHEME**

1. Give four advantages of practicing crop rotation (2mks)
* Maximum utilization of resources
* Control of soil borne pests and diseases
* Control of weeds
* Improvement of soil fertility
* Improves soil structure if grass layer is included
* Controls soil erosion
1. Name any four records that should be kept by a poultry farmer (2mks)
* Health records
* Production records
* Feeding records
* Inventory records
* Marketing records
1. Give two areas of study that make agriculture to be regarded as a science (1mk)
* Genetics
* Ecology
* Soil science
* Crop pathology
* Agricultural engineering
* Entomology
1. A farmer has the option of growing either wheat or maize in his one hectare of land. Wheat gives a return of sh 20000 while maize gives a return of sh.35000. What will be the opportunity cost? (1mk)
* Sh.20000 for growing wheat
1. State any two conditions under which opportunity cost is zero
* When there is no alternative
* When commodity is free
* When there is unlimited supply of resources
1. Give two practices that are commonly used in hardening seedlings in a nursery of kales (1mk)
* Reduce rate of watering
* Reduce shade
1. Outline four advantages of tissue culture (2mks)
* It is fast
* Produce pathogen free plants
* Mass propagation of propagates
* Requires less space
* Can be used to propagate seedless varieties
1. Name any four farming practices aimed at minimizing tillage (2mks)
* Mulching
* Uprooting/slashing weeds
* Use of herbicides to control weeds
* Use of cover crops
* Cultivating only the planting hole
1. Outline four factors that determine the depth of planting (2mks)
* Size of the seed
* Soil type
* Soil moisture content
* Type of germination
1. State three factors that determine the quality of compost manure (1 ½mks)
* Type of materials used
* Method of preparation
* Method of storage
* Length of decay
1. Distinguish between under sowing and over sowing as used in pasture establishment (1mk)
* Under sowing-establishment of a pasture crop under a cover crop
* Over sowing- establishment of a legume pasture in an existing grass pasture
1. State two disadvantages of shifting cultivation (1mk)
* Low total yield per unit area
* Time consuming
* No incentive to develop land
* Not practical in densely populated areas
1. Name any four methods of treating seeds before planting (2mks)
* Seed cleaning
* Seed inoculation
* Breaking seed dormancy
* Seed dressing
* Chitting
1. Give four reasons why seeds may be preferred in crop propagation (2mks)
* Less bulky
* Can be stored for a long time
* Planting can be mechanized
* Easy to control pests and diseases
* Cheaper to buy than vegetative materials
1. Differentiate between soil structure and soil texture (1mk)
* Soil structure is the relative arrangement of soil particles in aggregates while soil texture is the relative proportions of sand, silt and clay particles in a given soil sample
1. State four reasons why burning of fields is discouraged in crop production (2mks)
* Burn important soil organisms
* Burns organic matter
* Destroys soil structure
* Fire can destroy other structures
* Evaporates the soil moisture
1. Name three diseases that attack cabbage (1 ½ mks)
* Damping off
* Black rot
* Downy mildew
1. State four characteristics that make a crop suitable for green manure (2mks)
* Rapid growth rate
* Production of abundant foliage
* Leguminous
* Ability to decay quickly
* Hardy
1. State four different types of irrigation that can be used by farmers (2mks)
* Surface irrigation
* Overhead irrigation
* Sub surface
* Drip/trickle irrigation

**SECTION B (20 MARKS)**

1. The diagram below illustrates some soil structures. Study it and answer the questions that follow.
2. Identify the soil structures F and G (2mks)

F-granular

G-platy

1. Name the parts labeled X and Y in diagram F (1mk)

X-humus with clay

Y-air space

1. Sate two ways through which structure G influences crop production (2mks)
* Impedes drainage/ water infiltration
* Prevent root penetration
* Influences soil aeration
1. The diagram below illustrates a type of fruit. Study nit and answer the questions that follow.
2. Identify the fruit (1mk)
* Pineapple fruit
1. Name the parts A-D ((4mks)

A-crown

B-fruit

C-slip

D-suckers

1. Name two crops propagated by the part labeled D (1MK)
* Sisal
* Banana
1. The diagram below shows a method of layering study it and answer questions that follow
2. Identify the method of layering illustrated above (1mk)
* Marcotting/ aerial
1. State one circumstance in which this method of layering is recommended (1mk)
* When the branch is hard and cannot bend to reach the ground
1. A maize farmer was advised to apply 150 kg CAN per hectare while topdressing the maize crop. CAN contains 21%N. calculate the amount of Nitrogen applied per hectare. (3mks)

 21 kg N= 100 kg CAN

* 21/100 \*150=31.5 kg N/ha
1. The diagram below shows a seedling attacked by a certain pest.
2. Identify the pest (1mk)
* Cut worm
1. Name any two types of vegetable crops likely to be attacked by the pests (2mks)
* Cabbage
* Kales
* Tomatoes
1. State two methods of controlling the above pest (2mks)

Use of appropriate pesticide

Physically picking and killing

Crop rotation

**SECTION C (40 marks)**

***Choose any two questions from this section***

1. a)Outline the effects of wind on agricultural products (11mks)
* Causes soil erosion
* Acts as a pollination agent
* Acts as a seed disposal agent
* Causes destruction of crops
* Spreads pathogens
* Spreads weed seeds
* Causes destruction of farm structures
* Influences relative humidity
* Causes stress by chilling of livestock and crops

b)Briefly mention the importance of soil organic matter (9mks)

* Buffers soil ph
* Increases microbial activities
* Binds the soil particles together hence improving soil structure
* Increases soil fertility
* Improves workability of the soil
* Improves soil water retention capacity
* Improves water infiltration
* Reduces soil toxicity from pesticides

 26.a) Describe the advantages of using seeds as planting materials (5mks)

* Planting can be mechanized
* Less bulky
* Seeds can be mixed with fertilizers easily
* Easily available hence are cheaper planting materials
* Easy to treat against soil borne pests and diseases
* Possible to develop new crop varieties
* Seeds can be stored easily awaiting better conditions
* Easy to handle

b) Give reasons for raising vegetable seedling through a nursery (5mks)

* Many seedlings produced
* Easy to carry out management practices
* Easy to plant small seeds
* Provide optimum growth condition
* Allow transplanting of strong and healthy seeds
* Reduce time taken in the field
* Extra seedlings sold to earn income

c) Outline the process of chemical water treatment for use in the farm (10mks)

* filtration at intake

-Water passed through a series of sieves

* softening of water

-Soda ash added to soften

* Coagulation, sedimentation

-Alum added to coagulate, Bilharzia worms killed

* Filtration

-Water passed through different layers of gravel

* Chlorination

-small amounts of Chlorine added to kill micro organisms

* Storage

-water stored in tanks and distilled

 27. a) Explain five factors that determine spacing to be used in crops (10mks)

* Type of machinery to be used
* Soil fertility
* Size of the plants
* Crop stand either pure or mixed
* Number of seeds per hole
* Moisture availability
* Use of the crop
* Pest and disease control

b)Describe six management practices carried out on a nursery bed (6mks)

* Watering
* Mulching
* Weed control
* Pricking out
* Shading
* Pest and disease control
* Hardening off

c)Explain four advantages of grafting (4mks)

* Helps to repair damaged trees
* Helps to shorten maturity age
* Helps to change the top of tree from undesirable to desirable
* Make it possible to produce more than one type of fruit
* Helps to utilize plants with desirable root characteristics such as disease resistance to produce more desirable produce.