**FORM 2 AGRCULTURE MARKING SCHEME**

1. It is a science and an art of growing crops and rearing livestock. 1x1
2. Branches of Agriculture

-Livestock production

-crop production

-Agricultural engineering

-Agricultural economic 3x½=1½mks

1. Three sub-branches of horticulture

-Olericulture

-Pomoculture

-Floriculture 3x½mks=1½mks

1. (i) Apiculture-Keeping of bees in hives. 1mk

(ii) Aquaculture-keeping of fish in a fish pond. 1mk

1. Factors to consider when determining the farming system

* size related to the system
* Government policy
* environmental factors
* the system itself
* choice and preference 4x½=2mks

1. -Source of food

-Source of raw materials for industries

-source of income

-source of foreign exchange

-source of employment

-act as a market for industrial product. 3x½=1½mks

1. Human factors

* Health
* economy
* market forces
* Government policy
* Transport and communication
* Cultural practices and briefs.
* level of education and technology 4x½=2mks

1. Characteristics of dairy breeds of cattle.

* straight top line
* well developed udder with well set teat
* large hindquarters which are well spaced
* prominent milk veins
* wedge shape
* docile with mild temperament
* long tail extending down the hock 4x½=2mks

1. Aspects of rainfall

* Amount
* distribution
* Intensity
* reliability
* form of rainfall 4x½=2mks

1. Agents of physical weathering

* Moving water Nej -water
* wind
* moving ice 3x½=1½mks

1. Reasons for preparing land

* to kill weeds
* to incorporate organic matter into the soil
* control pests
* make other operations easy
* encourage water infiltration
* improve a soil aeration 3x½=1½mks

1. Types of pumps

* semirotary
* centrifugal
* piston
* hydram 2x½=1mk

1. Advantages of plastic pipes

* cheap to buy
* easy to transport(light in weight)
* easy to install
* durable when properly installed
* do not rust 3x½=1½mks

1. Types of surface irrigation

* Furrow irrigation
* Flood irrigation
* basin irrigation 3x½=1½mks

1. Forms in which Nitrogen is available to plants

* Nitrate ion(NO3-)
* Ammonium ions(NH+4) 2x½=1mk

1. Fertilizer nutrients

Nitrogen

Phosphorous

Potassium 3x½= 1½mks

1. Factors to consider when selecting planting materials

* Germination%
* seed purity
* suitability to the area
* Free from pest and diseases
* production
* physical defects
* time of maturity 3x½=1½mks

1. Inability of viable seeds to germinate. 1mk
2. Over sowing is the introduction of legume pasture in an already existing grass pasture

Under sowing is planting of a pasture crop under a nurse crop ***mark as a whole 2mks***

**SECTION B**

1. Study the diagram below and answer the questions which follows
2. soil profile 1mk
3. E-Top soil

F-sub-soil

G-weathered rock 3x½=1½mks

1. Characteristics of part labeled E

* rich in nutrients
* dark in colour
* has a lot of organic matter
* well drained
* has fine particles
* well aerated 4mks

1. (i) A- adjustable spanner

B-Pipe wredge

C-Ring spanner

D-Open ended spanner 4x½=2mks

(ii) A-open bolt of different sizes while C open bolts of the same size. 1mk

(iii) Grease the moving part

Coat with old engine oil when in storage 1x1=1mk

1. a) Traverse ½mk

b) Zigzag 1mk

c) Field number

-Date of sampling

-Name and address of the framer 3x½mk=1½mks

d)Determine the type of crop to be grown

-Determine the type of fertilizer to apply depending on the nutrient content

the farmer is able to know the type of soil

The farmer is able to know the pH of the soil 21mks

1. a)J-staking

K-Trellising

L-Propping

b) Provide support

Control soil borne pests and diseases

Easy to harvest

Easy to spray

Clean fruits are harvested

Better penetration of light 3x½=1½mk

c) Facilitate picking

-control overbearing

-facilitates spraying

-reduce breaking of branches 3mks

**SECTION C**

1. a)(i) Ecological requirements

* altitude 0-2100 above sea level
* temperature 18-25˚c
* rainfall 760-1300 mm per annum which is well distributed
* soil deep, fertile and well drained 3x1=3mks

(ii) Field management practices

* fertilizer application during top dressing: avoid excess nitrogen to prevent occurrence of blossom and rot disease
* weeding the tomato field should always be free from weeds to avoid competition of nutrients
* Staking –done to tall varieties, sticks 2m long are used and the plant is tied at intervals.
* Irrigation incase there is no rain –irrigation is done to ensure there is enough moisture in the soil
* Pruning –excess shoots are removed 1-3 shoots from the main stems are used

Terminal bud is also removed

Leaves and fruits growing form near the ground are removed. 6x1=6mks

* pests and diseases are controlled using appropriate chemicals

(iii) Harvesting

Takes 3-4 months after transplanting

* For fresh market varieties when the digital end turns red.
* Processing variety should be red during the time of harvesting
* Avoid picking green fruits
* Transplant in wooden crates
* fruits should be level with the crate top.
* put different grades in different crates
* Blossom end should face up 4x½=2mks

b) Effects of excess Nitrogen

- delayed maturity

- Blossom end rot

-weak stems

-too many leaves and less fruits 3x1=3mkss

c) Factors determining number of secondary cultivation

-size of planting materials

* Topography-number of secondary cultivation is carried out on sloppy area.
* Implement used in primary cultivation/condition of their level after primary tillage –mole harrowing is necessary when there are trash.
* Period from primary cultivation-the longer the period the work amount of rainfall/moisture of soil-areas with heavy rainfall require more secondary tillage.
* Type soil.-Heavy soil requires more primary cultivation.
* 6x=6mks

1. a) Qualities of a good grain store

* well ventilated
* raised above the ground
* should be vermin proof
* easy to load and off load
* leak prove
* lockable/wall secured
* Should be spacious 5x=5mks

b) Reasons for keeping livestock healthy

- a healthy animal has long productive life

- Healthy animals cannot spread disease

-It is economical

-produce healthy offspring

-produce high quality products

-promote high production

-promote the growth rate 5x1=5mks

c) Importance of using organic manure

-increase the water holding capacity of the soil

-Control soil erosion

-Improve the cation exchanges

-Improve the structure of the soil

-provide good habitat for useful living organisms in the soil

-buffer the pH of the soil

-regulate the sol temperature 5x1=5mks

d) - Topography –the land should be gentle sloping

- Water source-should be near a permanent water source

- Previous crop-should be where the crop of the same family has not been grown for

the last 3 yrs to avoid spread of pests and diseases

- Security- a place where seedling will not be stolen or damaged.

- well-sheltered-seedling should not be exposed to direct sun and strong wind.

- Types of soil: the soil should be well drained

Main field-the nursery should be near the main filed 5x1=5mks

1. a) Effects of wind in crop production

* destroy farm structure
* spread pests and diseases
* cause soil erosion
* Bring about cross pollination
* cause dispersal of some weed seeds 5x1=5mks

b) Reasons why agriculture is a science

-crop pathology

-entomology

-agriculture engineering

-soil science

-genetic 5x1=5mks

c)Topography-The area should be gentle sloping

-Type of soil- clay soil can retain water longer than other soils.

-Availability of adequate water –some systems requires a lot of water.

-Type of crop to be irrigated –some crops has a higher demand for water than others

-Capital available -some systems are expensive to install e.g. overhead irrigation. 5x1=5mks

d) Importance of drainage

- Increase the volume of soil

-raises the soil temperature

-increases the microbial activities

-removes toxic substances

-improves soil structure

Reduce soil erosion

-lower water table for growth of certain crops

-Gets rid of mosquito breeding habitat. 5x1=5mks

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