**FORM 3**

 **AGRICULTURE**

 **MARKING SCHEME**

1. **State four reasons why agriculture is an art 2MKS**

-Involves;

* machine operations
* Measuring distances
* Harvesting of crops
* Tilling of land
* Feeding and handling of animals
* Marketing of agricultural produce
1. **Define the following terms;**
2. **Arable farming-** production of crops on a cultivated land
3. **Organic farming-**growing of crops and rearing of animals without using agricultural chemicals.
4. **State two ways in which agriculture contributes to the industrial development**
* Provides raw materials for industries
* Provides market for industrial goods
* Source of capital to start industries
1. **State four conditions under which shifting cultivation is practiced**

Practiced Where;

* land is abundant
* population is sparse
* land is communally owned
* number of livestock per unit area is low
1. **State four factors that influence spacing of crops**
* Type of machinery to be used.
* Soil fertility.
* Size of the plant.
* Moisture availability**.**
* Use of the crop.
* Pest and disease control.
* Growth habit of the crop.
1. **State the functional difference between a cross-cut saw and a rip saw**
* Cross cut saw cuts the wood across the grain while rip saw cuts the wood along the grain.
1. **Name the part used for vegetative propagation of each of the following plants**
2. **Cassava**- stem cuttings
3. **Sisal** -bulbils
4. **Pyrethrum-** splits
5. **Pineapples-**crown,slips, suckers
6. **State four aspects of rainfall that influence agricultural production**
* Rainfall distribution
* Amount of rainfall
* Rainfall reliability
* Rainfall intensity
1. **State four reasons why soil is important to crops**
* Supports plant life/ anchorage
* Provides nutrients and water
* Contains useful microorganisms
* Contains organic matter, food for microorganisms
1. **Outline four harmful effects of strong wind in agricultural production**
* Results in soil erosion / loss of plant nutrients
* Spreads diseases/ weed seeds
* Causes lodging in cereals
* High evaporation rate causes wilting
1. **State four characteristics that make a crop suitable for green manure**
* Leafy/highly vegetative
* Has fast growth rate
* Have high nitrogen content
* Capable of rotting quickly
* Be hardy
1. **Give four methods of breaking seed dormancy**
* Mechanical method
* Chemical method
* Soaking in water
* Heat treatment(partial**)**
1. **Define the following terms as used in crop production**

 **A seed bed**- Piece of land which has been prepared to receive planting materials.

 **Nursery bed-**  Special seedbed prepared for raising seedlings before transplanting. Should not be more than 1M wide

1. **State four causes of livestock diseases**
* Physical causes
* Chemical causes
* Living organisms
* Nutritional causes
1. **Give four constituents of soil**
* Soil air
* Soil water
* Living organisms
* Mineral matter
* Organic matter
	1. Calf- young one of a cattle
	2. Bull- mature male cattle
	3. piglet – young pig from birth to weaning
	4. Cock – mature male bird
	5. Gilt – young female pig from weaning to first parturition
	6. Boar – mature male pig

**SECTIONB (20 MARKS)**

1. **The diagram below shows an external parasite. Study it carefully and answer the questions that follow**

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1. **Identify the parasite** tick  **1 mark**
2. **State three harmful effects of the parasite to livestock 3 marks**
* Ticks are vectors of livestock diseases e.g. ECF, redwater anaplasmosis and heartwater.
* Suck blood from the host leading to anaemia.
* Their bites causes wounds that acts as route for secondary infections.
* Cause irritation to the animals through their bites.
* Their bites lowers the value of hides and skin.
* Some produce toxins that may have adverse effects on the host.
1. Handpicking and killing them

Starving ticks to death

Fencing of pasture lands

Burning infested pastures

1. **The diagram below shows a field management practice in tomatoes. Study it and answer the questions that follow**

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1. **Identify the practice -** staking **1mark**
2. **State three reasons for carrying out the practice above**
* Enhances production of clean fruits.
* Facilitates spraying and harvesting.
* Controls incidences of disease outbreaks such as blight.
* Prevent infestation by soil borne pests.
1. **Name one disease that attack cabbages in the field.**
* Damping off.
* Black rot
* Downy mildew
1. **Below is a table showing pH values of different soil samples. Study it and answer the
a) Which soil sample has the highest acidity**

S1

**b State two ways in which the pH of soil sample S8 can be lowered**

* application of acidic fertilisers
* application of sulphur
1. **Name two methods of soil sampling 2marks**
* Zigzag
* traverse
1. **Below is a format of a farm record;**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Date**  | **Disease symptom** | **Livestock affected** | **Drug used** | **Cost of treatment**  | **Remarks**  |
|  |  |  |  |  |  |

1. **Name the farm record illustrated above**

Health record

1. **Give two uses of a farm record shown above**
* Shows the health status
* Determine the cost of treatment
* Used in selection and culling
* Show prevalent disease
1. **Apart from the above record, give other two records kept by the farmer**
* Breeding records
* Labor records
* Production records
* Inventory records
* Feeding
* Field operation

**SECTION C ( 40 MARKS)**

***Answer any two questions in this section***

1. **a) Describe transplanting of a vegetable seedling 8mks**
* Seedlings are ready for transplanting at 4 weeks old or when they have 4-6 true leaves.
* The nursery is watered 3-4 hours before lifting the seedlings.
* To ensure seedlings are lifted with a ball of earth/soil around the roots to minimise root damage.
* Select healthy and vigorously growing seedlings
* Lift them using a garden trowel.
* Transplant when the weather is cool.
* Seedlings should be transplanted at the same depth they were in the nursery bed to avoid rotting of the soft parts of the seedlings.
* Apply light mulch and shade if necessary.

**b) Explain seven nursery management practices 7 marks**

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

**Note:** ***They should be well explained***

**C State five importance of crop rotation 5 marks**

* Controls soil erosion.
* Improves soil structure
* Improves soil fertility
* Control of weeds.
* Control of soil borne pest and diseases build up.
* Maximum utilization of nutrients
1. **a) State five reasons for keeping livestock healthy 5 marks**
* Healthy animals grow well and fast enough to reach maturity quickly.
* Good health gives animals a longer productive life.
* Healthy animals give maximum production or performance, i.e. they maintain high productivity.
* Healthy animals produce good quality products that command a high market value.
* Healthy animals will not spread diseases to either animals or human beings.
* Healthy animals are economical to keep as the farmer spends less money on disease treatment hence reduction of production cost

**b State five importance of water in animal’s diet**

* Component of body cells and many body fluids such as blood.
* Responsible for transportation of nutrients from one part of the body to another. Makes cells turgid maintaining the shape of body cells.
* Used in biochemical reactions in the body e.g. digestion of food.
* Helps to regulate body temperatures through sweating and evaporation.
* Helps in excretion of waste products from the body.
* Forms part of animal’s product e.g. milk 83% water and an egg 55% water

**c) Explain five predisposing factors to livestock diseases 10 marks**

* **Species of the animal.** E.g. swine fever attacks only pigs and Newcastle affect only poultry.
* **Breed of the animal.** E.g. cancer of the eye will affect only Hereford breed of cattle and solar erythema affects only large white breed of pigs.
* **Age of the animal.** Certain disease are associated with animals of a certain age
* **Sex of the animal.** Certain diseases are associated with the sex of the animal.
* **Colour of the animal.** Animals which are black may suffer from heat stress

 **23. a) Explain five ways through which soil loses fertility 10 marks**

* Soil erosion
* Leaching
* burning of vegetation cover
* monocropping
* continuous cropping
* change in soil pH
* accumulation of salts

 **Note:** ***They should be well explained***

 **b) Describe water treatment using the chemical treatment system 10 marks**

stage 1. Filtration at water intake

stage 2. Softening of water

stage 3. Coagulation and sedimentation

stage 4. Filtration

stage 5. Chlorination

stage 6. Storage

***Note: The stages must be well explained***