



EXAMINATIONS COUNCIL OF SWAZILAND
Junior Certificate Examination

AGRICULTURE

516/02

PAPER 2

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Confidential

MARK SCHEME

{516/02}

MARKS: 100

This document consists of **6** printed pages.

Section A

1. (a) Producing crops and raising animals on the same farm [1]
 (b) Easier to manage crop; skills easily mastered; large quantities of one crop. [1]
 (c) Fertilizers and pesticides threat to environment; soil pollution; excessive land cultivation leading to erosion; interferes with ecosystem. [2]
[Total 4 Marks]
2. (a). Spread fungal diseases; poor feathering in birds; irritates mucus membrane; poor hatching (Any Two) [2]
 (b). Alter plant process thus reducing yield; make conditions unsuitable for crops; soil contaminants taken by plants to food chain. (Any Two) [2]
[Total 4 Marks]
- 3 (a) Trailer. [1]
 (b). Reduce friction. [1]
 (c). Carry heavy loads; Transport goods and materials. [2]
[Total 4 Marks]
4. (a). Cloud weather condition; cool weather condition. [1]
 (b). Allows enough space for seedlings; promote growth; reduces competition of nutrients, water, light and air. (Any One) [1]
 (c). To minimise crop wastage; to reduce pest and disease attack; to minimise crop spoilage. (Any Two) [2]
[Total 4 Marks]
5. (a). Cut down trees; grass and large weeds; remove stumps and stones; burn remaining plants residues; drain waterlogged soils (Any Three) [3]
 (b). Carry nutrients; cool plant; form part of the cells. (Any Two) [2]
[Total 5 Marks]
6. (a). Africa Chicks; National chicks; Ngwane poultry [1]
 (b). Provide light; warmth/favourable temperature [1]
 (c). Provide nutrition; provide income, provide organic matter. (Any Two) [2]
[Total 4 Marks]
7. (a). (i) Organic matter [1]
 (ii) To incorporate air; to allow rotting [1]
 (b). Add organic matter; adding fertilizer; rotate crops. (Any Two) [2]
[Total 4 Marks]
8. (a). (i) Encourages diseases; sores
 (ii) Poor appetite; poor nutrition; poor breeding. (Any Two) [2]
 (b). (i) Uniform/ even growth of pasture
 (ii) Palatable pasture; fast growth (Any Two) [2]
[Total 4 Marks]
9. (a). food chamber [1]
 (b). (i) pheromones
 (ii) dances; sounds. (Any Two) [2]
 (c). Raise them away from public; provide a dense screen vegetation; keep grass short; physical barrier between hive entrance and light source. (Any Two) [2]
[Total 5 Marks]

10. (a). Employment; income; foreign exchange; reducing erosion; promote diversification; balance ecosystem; source of energy. [2]
- (b). Choose a sunny site, good soil, near water source; prepare a seedbed; plant the seeds; after germination transplant seedlings into plastic bags;/plastic growing tubes; stake in boxes or frames and shade; gradually remove shade for exposure to full sunlight. [2]
[Total 4 Marks]
11. (a). For a successful production; to know what to grow and when; for product to be available in the market when needed. (Any One) [1]
- (b). Climatic condition; type of product; availability of land, labour and capital; purpose of the product; quantities to produce. (Any Three) [3]
[Total 4 Marks]
12. (a). To cool the plant; to allow absorption [2]
- (b). The breaking down of plant food into smaller pieces and the production of energy. [2]
[Total 4 Marks]

SECTION B

1. **Maize Production** [1]
Introduction
Maize is a staple food; Can grow in almost all the regions; high nutritional value; good source of starch, proteins, fats, fibre, minerals and vitamins. [1]
- Land Preparation**
- ✓ Cut down trees and large weeds using saws, bush knives and slasher
 - ✓ Remove stumps and stones
 - ✓ Burn the remaining plant residue
 - ✓ Drain water logged soil using open ditch or perforated drain pipes
 - ✓ Cultivate the land [4]
- Factors considered when selecting suitable varieties**
- ✓ Type of soil
 - ✓ Resistance to diseases
 - ✓ Suitable climate
 - ✓ Buyers preference
 - ✓ End use of vegetable [3]
- Steps for planting maize directly**
- ✓ Mark out the planting row using string and sticks
 - ✓ Determine amount of basal dressing needed
 - ✓ Use hoe, trowel or edge of rake to make drill (make drill depth, five times diameter of seed).
 - ✓ Spread seeds evenly along the drill, if seed are certified, plant one seed

- at each planting station.
 - ✓ Rake soil over the seed and firm it down
 - ✓ Water the row
- [6]

Management practices

- **Weeding**
 - Remove weeds when they are young before they make seed
 - Remove when young before causing damage to plants
 - Weeds compete with crops for water, light and nutrients
 - Be careful not to damage roots

[4]
- **Fertilizer application (topdressing)**
 - LAN is commonly used
 - Apply four to six weeks after planting or transplanting
 - Sprinkle fertilizer 10cm – 15cm away from plant
 - Dig it in lightly take care not to damage roots

[4]
- **Maturity**
 - Plant turn brown
 - Seed become hard
 - Black patch at the pointed end (Any two)

[2]

[TOTAL [25]

2. Indigenous chickens/ Production of Indigenous chickens [1]

Introduction

Sometimes known as village/ traditional chickens. Kept mostly in rural homestead for their meat, eggs feathers and for selling. [1]

Importance of indigenous chicken

- Provides family with cheap readily harvestable protein eggs and meat
 - Reduce poverty and improve lives of rural women and children
 - Promote gender equality, women have control in production and sale
 - Give access to income and knowledge
 - Suitable for female headed families
 - High demand for indigenous chicken
 - Play role in cultural life of farmers
 - Used as gifts
 - Can be start up for rearing other livestock
 - Given as offerings to appease ancestors
 - Feathers used for making special clothes
 - Scavengers eat discarded foods
 - Control garden pests and parasites
 - Cocks as alarm in rural villages
 - Provision of manure (Any six)
- [6]

Characteristics of a chicken house

- Protect chicken from thieves
- House easy to clean
- Well ventilated
- Have enough space for brooding, roosting and feeding (Any Three) [3]

Feeding indigenous chicken

- Chicken are omnivorous, feed on grasses, grains, worms, and insects
- Feed your chicks 4 to 5 weeks old starter mash
- Half fill the feeder to avoid spillage
- Feed grower mash to older birds as it supplies a balanced diet
- Allow chicken to scratch around for snails, grain,
- Give small amounts of yellow maize to increase quality and quantity
- Supplement feeds use mix fowl and rice husks
- Give them left over feeds
- Give them garden left over vegetables (Any six) [6]

Provide water

- Make sure water is always available
- Water must be at room temperature
- Clean water
- Change the water twice
- Enough water increases feed intake (Any six) [3]

General control of diseases and pests

- Add aloe in drinking water
- Follow the prescribed pest and disease control programme (add Lasota ,Gumboro, coccidiostat)
- Newcastle vaccine to drinking water
- Sprinkle snuff powder in nests to control external and internal parasites
- Isolate sick chicken (Any six) [3]

Control of vices

- Supply birds with balanced diet
- Avoid overcrowding
- Remove pecked bird immediately [2]

[TOTAL [25]**3. Rabbit Production [1]****Introduction**

Rabbits are kept for their meat. They are cheap source of meat and are easy to look after. [1]

Set standards for successful rabbit production

- Five to six litters per year

- An average of six to eight young per litter
- A high survival rate to weaning
- A daily weight gain of about 32g per day
- A feed conversion ratio of 1kg of meat per 3.4kg of feed
- A killing out percentage of between 55 -60 percent [6]

Amount of pellets given to rabbits and their age

- Weaning – 3months adlib
- 3 – 4 months 100g/day
- 4 – 5 months 120g/ day
- Adult 120g/day [4]

Importance of test mating and how it is done

- To find out if a rabbit is pregnant or not
- Take doe to the buck cage 18 days after mating
 - If doe accepts buck she is not pregnant
 - If doe rejects buck she is pregnant [3]

Kindling and preparation for kindling

- Introduce nest box a week before kindling
- Doe pulls fur from her coat to add to bedding [2]

Fostering

- Rub Vicks on foster mothers nose and noses of kittens
- Helps cover smell of parent doe
- It also helps to rub the fur of the foster mother with your hand before moving the kittens
- Done before kittens are 3 days old
- There should be not more than 2 – 3 days difference in age gap between the two groups of litter, older rabbits may bully young ones [4]

Weaning

- removing young rabbits from their mother
- done at 6 – 8 weeks [2]

How to sex rabbits

- Sexing rabbits: hold it on its back
 - Press the rabbits sex organs on either side
 - Male – looks like a circle from which penis stick out
 - Female – looks like a slit [2]

[TOTAL [25]