



EXAMINATIONS COUNCIL OF ESWATINI
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.

1. (a) (i) Fruit vegetables [1]
- (ii) Leafy and root vegetable crops takes different nutrients in the soil; for maximum use of nutrients in the soil; take nutrients from different levels of the soil (any 1) [1]
- (iii) Subsistence farming is the growing of crops and keeping of animals for family use; commercial farming is the growing of crops and keeping of animals for sale. [2]
- (b) Vegetables in clay soil needs less water than loam soils as it holds more water [2]
- [6 marks]**
2. (a) Damage on implement may be too serious;
It may be more expensive to repair the broken parts;
May cause accidents; (any 2) [2]
- (b) Paint /grease/oil farm implements to make them water resistant; Keep tool under shelter; keep tools clean; oil all moving parts; [4]
- [6 marks]**
3. (a) Type of pest or disease; how badly the crop is attacked; farmers knowledge; cost of inputs (labour / equipment / chemicals); level of damage. [4]
- (b) Pour the liquid down the drain or safe place; Use city council/RDA to dispose; dig a hole in a safe place and dispose the chemical and cover with soil [1]
- [5 marks]**
4. (a) It is the medium for crop production/ a good source of plant nutrients [1]
- (b) Cultivating the soil too much without adding organic matter; cultivation when the soil is too wet; compaction by animal, people and machinery; cultivating when the soil is too dry hence the soil becomes loose. [4]
- (c) By facilitating proper drainage system; grow plants that need more water such as banana. [1]
- [6 marks]**
5. (a) Area that in well- drained; a place where it will be at right angle with the direction of wind; open area away from trees / away from fields (any 2) [2]
- (b) (i) Cob/ ears turn down; plant turns brown/ dried up [2]
- (ii) Lower leaves dry up / fall off; seeds become hard. [2]
- (c) Reduce moisture content; to prevent moulds; to prolong shelf life. [2]
- [6 marks]**

6. (a) They are closer to the heater; temperature is low [2]
 (b) Reduce poverty; Improve life of women and children; promote gender equality; Increase income; serves as gifts; provide start-up capital; offerings to ancestors / sacrifices; alarm; feathers used for making clothes; for controlling pests and parasites; provide manure (any 2) [4]
[6 marks]
7. (a) Wind; by animals; plant's own mechanism; water (any 2) [2]
 (b) (i) Yellow lower leaves/ chlorosis; Stunted growth
 (ii) Poor roots development; purple leaves; poor fruit development (any 2) [2]
 (c) Male gametes from the anther is carried through the pollen tubes; joins with female gamete in the ovule [2]
[6 marks]
8. (a) Witch weed / maize striga [1]
 (b) (i) Early planting
 (ii) Use quality seeds
 (iii) Hand picking of pest
 (iv) Planting at the right time (any 3) [3]
 (c) The use of two or more control methods of pest and diseases [2]
[6 marks]
9. (a) Well developed testicles in the buck; doe with at least eight teat; 5 months of age; general appearance (well-built and strong); healthy; parent breeding record (any 2) [2]
 (b) Food is used economically/ less food to make more meat; fast maturing [2]
 (c) Smear Vicks on the nose of the doe to avoid the doe detecting the fostered rabbit; transfer young rabbit to the new doe within three days [2]
[6 marks]

10. (a) (i) Part A – Rumen; Part B – Abomasum; Part C – Caecum [3]
- (ii) Bringing food/ regurgitate from the rumen/ reticulum and back to the mouth. [1]
- (b) Burdizzo/ rubber ring/ elastrator/ knife; used to reduce the flow of blood to the testicles; sperm duct cut to avoid sperms from testicles to the penis. [2]
- [6 marks]**
11. (a) Friesian (Holsten Friesian); Jersey [2]
- (b) Wedge shaped [1]
- (c) It is best for maintaining and improving cow production; It is cheaper than keeping a bull. - [2]
- [5 marks]**
12. (a) Use correct stocking rate; practice rotational grazing; rest pastures; Practice zero grazing; divide the pasture. **(any 1)** [1]
- (b) (i) Cut grass as close to the ground as possible using a slasher or sickle
- (ii) Rake the grass into rows
- (iii) Turn the grass two or three times a day until it is dry enough [3]
- (c) (i) Kill pest and diseases; allows new grass to grow [2]
- [6 marks]**

SECTION B**1. Vegetable production (green beans)****Soil preparation**

- Add organic fertilizer (kraal manure or compost) as beans grow well in soils with organic fertilizer
- Dig the soil using the correct tool
- Break the lumps of soil
- Prepare a fine tilth
- Open up planting rows

[5]

Steps to follow when planting green beans direct

- Apply recommended amount of basal dressing fertiliser 20g of 2:3:2 (22)+0.5%Zn/m row
- Make drills using a hoe or trowel
- Spread seeds evenly along the row (drill) at the depth of 5 cm
- Cover seeds with the soil
- Water the row

5]

Weeding of beans

- Should be done when weeds are still young
- Use a hand or hoe
- Weed within and between rows
- Do not disturb the roots
- Repeat or weed more than once

[5]

[Total marks = 15]**2. Recognition of Newcastle disease in Poultry**

- Egg production drops
- Birds go quite
- Birds breath with difficulty
- Shake and have watery droppings
- Feathers look ruffled

[5]

Preparation activities that prevent diseases

- Removal of old litter
- Clean the house and equipment thoroughly
- Disinfect the house and equipment using a disinfectant
- Leave the house for two weeks to completely dry and also kill remaining disease causing micro-organism

- Place a disinfectant in the footbath [5]

Feeding broilers

- Broilers are given starter crumbs from 1 day – 2 weeks
- At 3-4 weeks they are given a grower pellets
- From the 5-6 weeks they are given a finisher pellet

[5]

[Total marks = 15]

3. Establishing a forest nursery

- Plant seeds in seed trays
- Few weeks after germination transplant to plastic growing bags
- Stake together in boxes or frames
- Place under shade
- Gradually remove the shade

[5]

Fertilizing a fruit tree

- Open a band of 40 – 60 cm wide on both sides of the drip line
- Apply 400g of 2.3.2 (22) + 0.5% Zinc
- Cover the fertilizer with soil
- Apply water to dissolve the fertilizer
- Repeat the exercise every three months

[5]

Harvesting of fruits

- Fruits must not be picked during wet weather as they will rot
- Fruits must not be picked too early or too late as they will take too long to get ready or they will not keep well
- Fruits must be handled with care to avoid bruises
- Fruit must not be left in the sun as they easily get spoiled
- Diseased fruits should not be mixed with good as this will allow the spread of the diseases

[5]

[Total marks:15]