

ALLIANCE HIGH SCHOOL



Mr. Omani

443/1
AGRICULTURE
TRIAL EXAM, Sept 2022
PAPER 1
TIME: 2 HOURS

Kenya Certificate of Secondary Education

Instructions to Candidates:

- a) Write your name and index number in the spaces provided above.
- b) Sign and write the date of examination in space provided.
- c) This paper consists of three sections; A, B and C.
- d) Answer all the questions in section A and B.
- e) Answer any two questions in section C.
- f) All answers should be written in spaces provided in question paper.

FOR EXAMINER'S USE ONLY

SECTION	Question	Maximum score	Candidates score
A	1 - 15	30	
B	16 - 19	20	
C		20	
		20	
Total score		90	

SECTION A (30MARKS)

Answer All the questions in this section in the spaces provided

1. Name two methods of farming that are considered outdated (1mark)
 - *Shifting Cultivation*
 - *Nomadic pastoralism*

2. State three symptoms of potassium deficiency in plants (1 ½ marks)
 - *leaf curling*
 - *chlorosis*
 - *premature leaf fall*
 - *stunted growth*
 - *leaves develop burnt*
 - *scorched appearance on the leaf*

3. State two ways of controlling late blight in tomatoes (1marks)
 - *Use of fungicides*
 - *Crop rotation*
 - *destruction of affected materials*

4. Name three financial documents in farm accounts (1½ marks)
 - *Invoice*
 - *Receipt*
 - *Statements*
 - *Delivery note*
 - *Purchase order*

5. State four farming practices which can enhance proper light penetration in a crop. (2marks)
 - *Proper spacing*
 - *Pruning*
 - *Thinning*
 - *Training*

6. Give four factors which determine the method of weed control in crop production (2marks)
 - *Cost*
 - *Size of the land*
 - *spacing*
 - *probability of labor*

11. Give two methods of conserving forage. (1mk)

- Silage
- Hay
- Standing forage

12. State four roles of young farmers clubs in Kenya. (2mks)

- Participation in ASK classes
- Carrying out farm projects in schools
- Organising farm field days
- Participation in agricultural exchange programs

13. State three farming practices which may lead to multiplication of pests (1 ½ marks)

- ~~No~~ - Mow-copping
- Continuous copping
- Use of organic mulches
- Minimum tillage

14. Give three pieces of information to be found in a master roll (1 ½ mark)

- Names of individual workers
- Days worked
- Amount paid

15. State three objectives of land reform (1 ½ marks)

4

7. State four causes of seed dormancy (2marks)

- Impermeable seed coat
- Permeable embryo
- Lack of growth hormones
- Presence of growth inhibitors
- Unsuitable temperature
- ~~lack of~~ Lack of enough water
- Lack of oxygen

8. List four effects of weeds on pastures (2marks)

- Reduce lifespan of pasture
- Compete with forage crops for water, nutrients etc
- Reduce quality of herbage yield
- Some may be interbreed with forage plants
- Some pasture animals

9. State four qualities to be considered when selecting seeds for planting (2marks)

- Germination percentage
- Certified seeds
- Healthy
- Lack of physical defects
- Freedom from pests and diseases
- Adaptability

10. Name four methods of harvesting trees. (2mks)

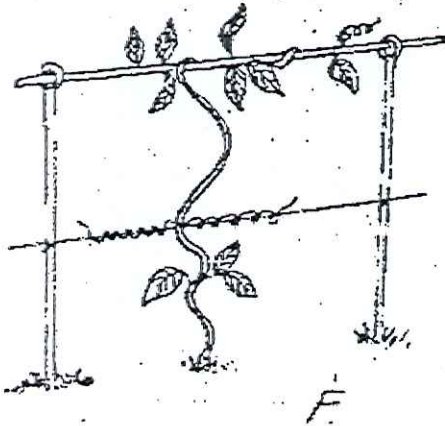
- Chipping
- Coppicing
- Pollarding
- Tree falling
- Pruning
- Thinning

3

SECTION B (20 MARKS)

Answer All the questions in this section in the spaces provided

16. The diagram F, below illustrates a method of training in crops.



a. Identify the method shown in F above.

(1 mark)

Trellising

b. Name two other methods used in training in crop production.

(1 mark)

- Staking
- Popping

c. State two advantages of training in crop production.

(2 mark)

- Facilitates better light penetration.
- Avoids rotting of fruits & some crops maintaining their quality.
- Easy to spray pest control & other sprays.
- Lowers incidence of soil borne diseases.

Ensuring existing labor is fully utilized
- Encouraging conservation of labor, soil and water
- Encouraging flexibility in production to meet existing market demand
- Easy to apply pressure
- Promote commercial farming (2 marks)

16. Why is it important to weed early in crop production

- i) - Prevent Competition
- Destroy weeds before they develop seeds
- ii) -

17. State three effects of late defoliation in pasture management.

(1 1/2 marks)

- Pasture has high lignin and cellulose content
- It has low digestibility
- Low crude protein
- Less palatable
- High dry matter content

18. Differentiate between undersowing and oversowing as used in forage production. (2 marks)

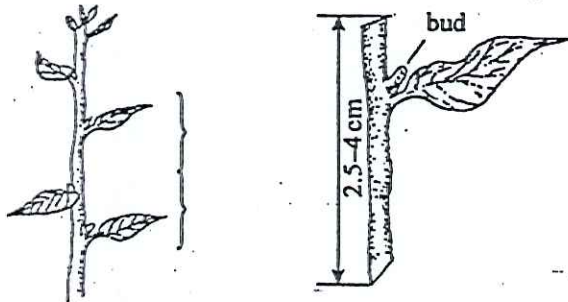
Undersowing - Establishing a pasture under an existing crop.

Oversowing - Establishment of a pasture regime over an existing pasture grass.

(c) State two ways in which the soil structure of the soil sample labeled C above can be improved. (2 marks)

- Addition of organic matter
- Addition of lime / calcium carbonate

20. The diagram below shows a section of a plant from which the planting material illustrated was obtained.



(a) Identify the planting material illustrated. (1 mark)

cutting

(b) Give two reasons why only the middle part of the plant was used to prepare the planting material. (2 marks)

- The lower hard bottom part takes long to root
- The soft upper part may rot when planted

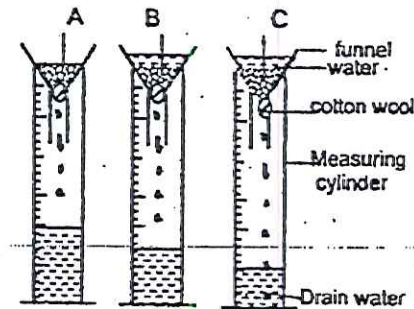
(c) Apart from using the middle part of the plant, explain two precautions that should be observed when preparing the illustrated planting material. (2 marks)

- A sharp knife should be used to make clean cuts
- Each cutting should be placed in water to avoid dehydration
- Leaf of the cutting should not touch the soil to avoid rotting

d. List two crops that require training. (1 mark)

- Passion fruit
- Watermelon
- Cucumber
- Beans
- Pumpkin
- Tomatoes

19. The diagram below illustrates an experiment on soil. Study it carefully and answer the questions that follow.



(a) State the aim of the experiment. (1 mark)

To compare the porosity and water holding capacity of sandy, loam and clay soils.

(b) If the volume of water illustrated in the measuring cylinders was observed after one hour, identify the soil samples labelled A and B. (1 mark)

- A - Sandy soil
- B - Loam soil

Describe ten safety precautions that should be taken when using herbicides to control weeds. (10 marks)

(a) Explain the cultural methods of soil and water conservation (10 marks)

(b) State and explain how various practices carried out in crop production help to control pests (10 marks)

Study the table below showing quantities of fertilizers used and yield of maize obtained over a period of years and answer the questions that follow.

Land (in ha)	DAP fertilizers (in 20kg units)	Yield (90kg bags)	Marginal production(MP) (in 90 kg bags)	Average production:(AP) (in 90 kg bags)
1	0	2	0	2
1	1	10	8	10
1	2	24	14	14
1	3	42	18	14
1	4	56	14	14
1	5	62	6	12.4
1	6	60	-2	10
1	7	56	-4	8

- (a) i) Fill in the marginal and average product columns in the table (4marks)
- ii) Using the graph paper provided draw the production function curve (6marks)
- iii) Show the three zones of production on the graph (3marks)
- b) State and explain the various land tenure systems practiced in Kenya. (7 marks)

23 b

24 b

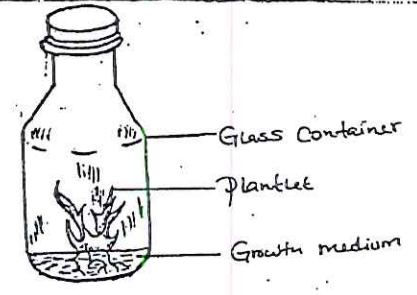
Collective tenure systems

- 1) Communal - land owned by group
- 2) Cooperative - land is owned by a group of people
- 3) State ownership

Individual

- Individual user operator
- Land husband and tenancy
- Commercial and leasing

21. The diagram below illustrate materials, and a method of vegetative propagation. Study it and answer the questions that follow.



- i) Identify the method of propagation illustrated above. (1mk)
- Tissue Culture.
- ii) Name a common crop propagated through the method. (1mk)
- Banana, Pineapple.
- iii) Give three disadvantages of this method of propagation. (3marks)
- Expensive, Requires skilled labor, Requires special working envt.

weeding

shallow weeding

pre-emergence herbicide can be used

SECTION C(40MARKS)

Answer any two questions from this section in the spaces provided

(a) Describe the production of dry beans (*Phaseolus vulgaris*) under the following sub-headings: (2 marks)

(i) Varieties common in Kenya; - Canadian wonder, Mexico (2 marks)

(ii) Selection and preparation of planting materials; - Savanna, Mucuna, HLP (3 marks)

(iii) Planting and weeding; (5 marks)

Planting and weeding

Planting

- Part the seed coat
- 2-3 seeds per hole (high no seeds)
- Proper spacing (3x5m)
- DAP (200/ha) / Rowantia fertilizer
- Proper depth of planting

weeding

- Select and discard damaged and wrinkled seeds
- Dress selected seeds with appropriate chemicals
- Inoculate with good strains of rhizobium bacteria.