

Name Index Number

443/1
AGRICULTURE
Paper 1
Nov. 2016
2 hours

Candidate's Signature

Date



THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education
AGRICULTURE
Paper 1
2 hours

Instructions to candidates

- (a) Write your name and index number in the spaces provided above.
- (b) Sign and write the date of the examination in the spaces provided above.
- (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 the spaces provided.
- (g) This paper consists of **16 printed pages.**
- (h) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
- (i) Candidates should answer the questions in **English.**

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	1-18	30	
B	19-23	20	
C		20	
		20	
Total Score		90	



SECTION A (30 marks)

*Answer **all** the questions in this section in the spaces provided.*

1. List **four** factors that would determine the stage at which a crop is harvested. (2 marks)

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2. State **two** ways in which crop rotation controls weeds. (1 mark)

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3. Give **two** factors which characterize small scale farming. (1 mark)

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4. Give **two** examples for each of the following categories of water pipes.

- (a) Metal pipes (1 mark)

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- (b) Hose pipes (1 mark)

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5. State the information included in a sales receipt when a farmer is selling eggs. (2½ marks)

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6. State **four** characteristics of a good vegetable seedling. (2 marks)

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7. Name **three** forms of horticulture practiced in Kenya. (1½ marks)

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8. State **two** mechanical methods of separating soil particles according to size, during soil analysis. (1 mark)

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9. List **four** disadvantages of mono cropping in crop production. (2 marks)

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10. State **two** reasons for practicing agro forestry on a

(a) river-bank (1 mark)

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(b) steep slope (1 mark)

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11. Give **three** reasons for growing crops under optimum temperature conditions. (1½ marks)

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12. State **four** reasons for treating water for use on a farm. (2 marks)

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13. Outline **two** ways of controlling damping off disease on vegetable seedlings in a nursery. (1 mark)

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14. State **four** factors that affect the quality of farm-yard manure. (2 marks)

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15. Distinguish between grading and standardization in agricultural marketing. (2 marks)

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16. Give **four** disadvantages of broadcasting as a method of planting. (2 marks)

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17. State **three** practices which encourage soil erosion. (1½ marks)

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18. Name **two** types of non-competitive markets. (1 mark)

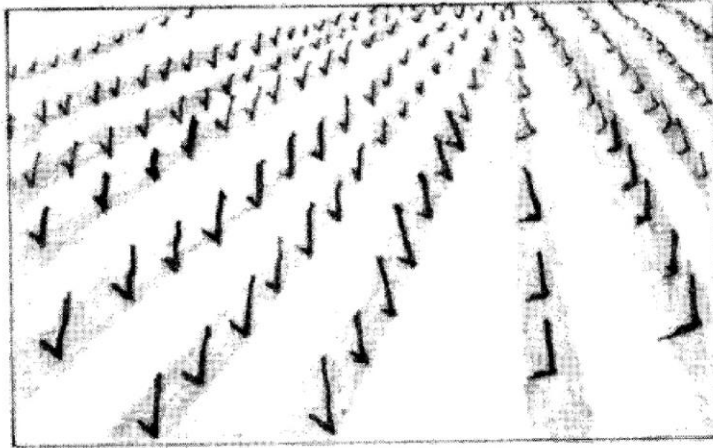
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SECTION B (20 marks)

Answer all questions in this section in the spaces provided

19. The diagram below shows crop establishment using a certain method of planting. Study it carefully and then answer the questions that follow.



- (a) Name the method of planting used for the crop. (1 mark)

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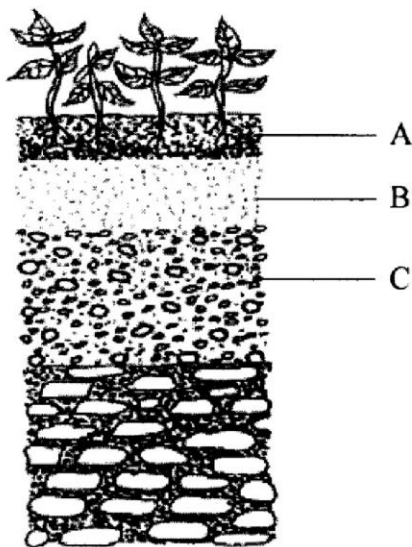
- (b) State **two** advantages of the planting method used for the crop. (2 marks)

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- (c) State **two** factors that determine the depth of planting. (2 marks)

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20. The diagram below illustrates a feature observed after digging the soil several meters deep. Study the diagram carefully and answer the questions that follow.



- (a) Identify the feature that the diagram above represents in the study of soil. (1 mark)

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- (b) Name the parts of the diagram labeled A, B and C. (1½ marks)

A

B

C

- (c) State **two** ways in which the knowledge of the above feature would be of benefit to a farmer. (2 marks)

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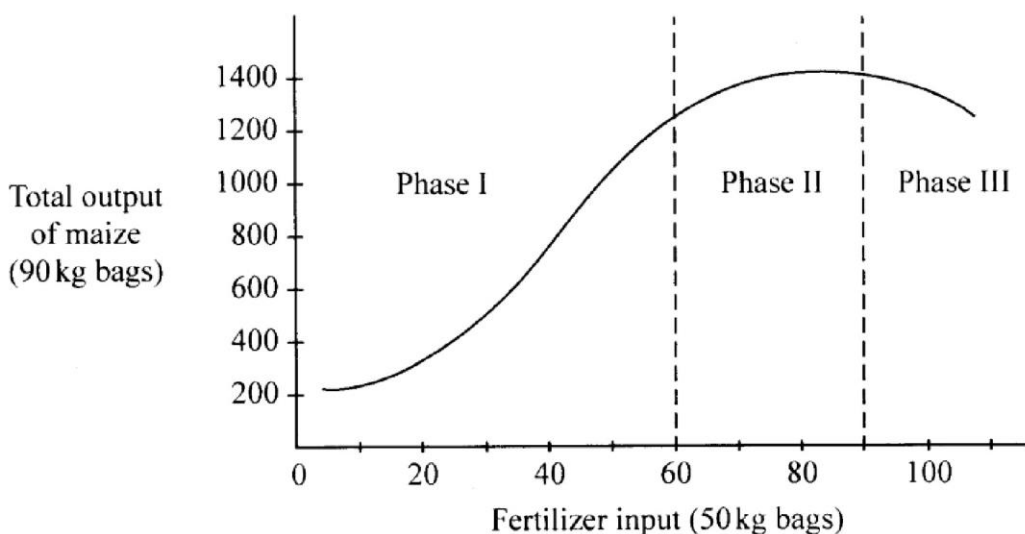
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21. Below is a graphical representation of a law in agricultural economics. Study the graph carefully and answer the questions that follow:



(a) Identify the law illustrated by the graph. (½ mark)

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(b) Explain how each additional unit of fertilizer input relates to the total output of maize in phases II and III.

Phase II (1 mark)

Phase III (1 mark)

(c) State the importance of the law identified in (i) above to the maize farmer. (1 mark)

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22. The following is a list of plant nutrients; copper, calcium, nitrogen, molybdenum, zinc, phosphorous, carbon, sulphur, iron and magnesium. Which of the above plant nutrients are:

(a) Macro-nutrients (1 mark)

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- (b) Micro-nutrients (1 mark)

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- (c) Fertilizer elements (1 mark)

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- (d) Liming elements (1 mark)

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23. The table below shows pH value of different soil samples. Study it and answer the questions that follow.

Soil Sample	pH Value
S ₁	3
S ₂	4
S ₃	5
S ₄	6
S ₅	7
S ₆	8
S ₇	9
S ₈	10

- (a) Which soil sample has the highest acidity? (1 mark)

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(b) State two ways in which the pH value of sample S₈ can be lowered. (1 mark)

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(c) Which of the above soil samples is suitable for growing tea? (1 mark)

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SECTION C (40 marks)

Answer any two questions from this section in the space provided after question 26.

- 24. (a) Outline the information contained in a purchase order. (5 marks)
- (b) Describe the harvesting of tea. (6 marks)
- (c) Explain the importance of irrigation in crop production. (5 marks)
- (d) Describe the role of magnesium in crop production. (4 marks)
- 25. (a) Describe the effects of pests on maize in the field. (6 marks)
- (b) (i) Describe the procedure of harvesting pyrethrum. (4 marks)
- (ii) Explain the precautions that should be observed during the harvesting of pyrethrum. (3 marks)
- (c) Describe the cultural methods of controlling soil erosion. (7 marks)
- 26. (a) Explain **eight** cultural methods of soil and water conservation. (8 marks)
- (b) Explain **four** ways in which:
 - (i) HIV/AIDS limits agricultural production. (4 marks)
 - (ii) Government policy improves agricultural production. (4 marks)
 - (iii) Low level of education and technology influence agriculture. (4 marks)

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THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education
AGRICULTURE
Paper 2
(THEORY)
2 hours

Instructions to candidates

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- (b) Sign and write the date of the examination in the spaces provided above.
- (c) This paper consists of **three** sections: **A, B** and **C**.
- (d) Answer all the questions in section **A** and **B** and any **two** questions in section **C**.
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B	17-21	20	
C		20	
		20	
Total Score		90	



SECTION A (30 marks)

*Answer **all** the questions in this section in the spaces provided.*

1. Name **four** rabbit breeds reared in Kenya. (2 marks)

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2. Give the meaning of the following terms as used in livestock health.

- (a) disease (1 mark)

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- (b) vaccination (1 mark)

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3. State **four** advantages of artificial calf rearing in dairy cattle management. (2 marks)

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4. List **four** materials that can be used in the construction of a Kenya Top Bar Hive. (2 marks)

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5. Give **four** features of housing that help to control livestock diseases. (2 marks)

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6. State **four** characteristics of the Duroc Jersey pig. (2 marks)

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7. Give **four** characteristics of a good site for a fish pond. (2 marks)

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8. Name **four** systems of a tractor engine. (2 marks)

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9. What is dry cow therapy? (1 mark)

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10. Give **two** reasons for steaming up in dairy cattle management. (2 marks)

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11. State **four** maintenance practices for a disc plough. (2 marks)

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12. List **four** preventive measures for livestock diseases. (2 marks)

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13. Give **two** reasons for using litter in a poultry house. (1 mark)

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14. State **four** disadvantages of fold system in poultry rearing. (2 marks)

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15. State **four** practices that come immediately after complete milking in a milking shed. (2 marks)

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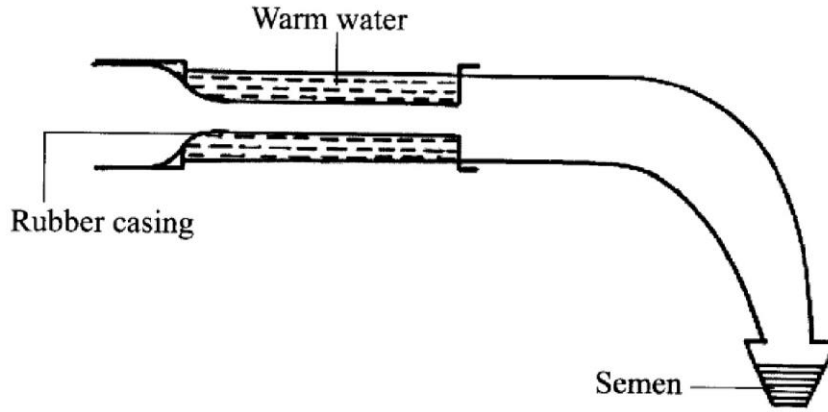
16. List **four** tools that are used when laying concrete blocks during construction of a wall. (2 marks)

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SECTION B (20 marks)

Answer *all* the questions in this section in the spaces provided.

17. Below is a diagram illustrating an instrument used in cattle breeding. Study it carefully and answer the questions that follow.



- (a) Identify the instrument. (1 mark)

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- (b) State the role of the instrument in cattle breeding. (1 mark)

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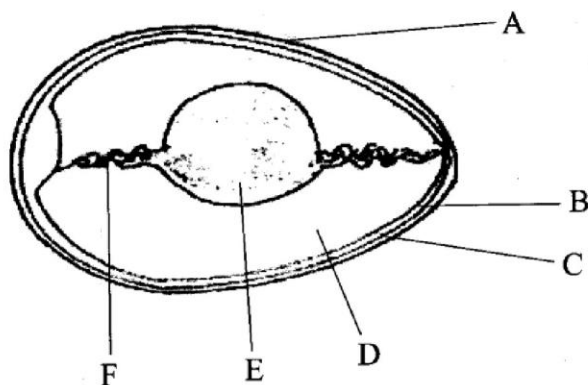
- (c) When should it be appropriate to serve a cow after onset of heat? (1 mark)

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- (d) Apart from the method in which the above instrument is used, name **two** other methods of serving a cow. (2 marks)

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18. The diagram below is an illustration of an egg. Study it carefully and answer the questions that follow.



- (a) Name the parts labelled B, C, D and F

B (½ mark)

C (½ mark)

D (½ mark)

F (½ mark)

- (b) State **two** qualities of the part labelled A that should be considered when selecting eggs for incubation. (2 marks)

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- (c) What is the function of the part labelled E in a fertilised egg? (1 mark)

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19. The photograph below illustrates a method of identification labelled x in cattle. Study it carefully and answer the questions that follow.



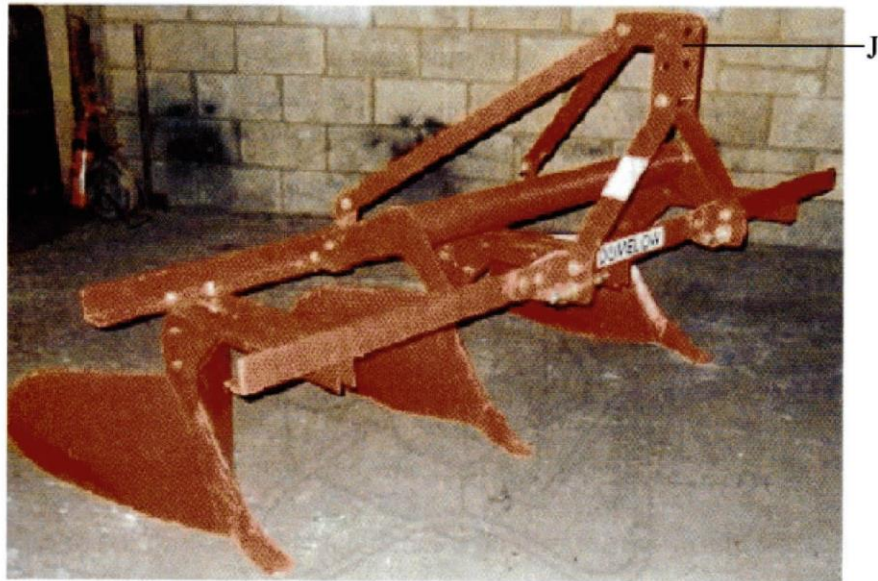
(a) Name the identification method. (1 mark)

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(b) Explain **three** disadvantages of the identification method. (3 marks)

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20. Below is a picture illustrating a farm implement. Study it carefully and answer the questions that follow.



(a) Identify the implement illustrated above. (1 mark)

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(b) State the use of the:

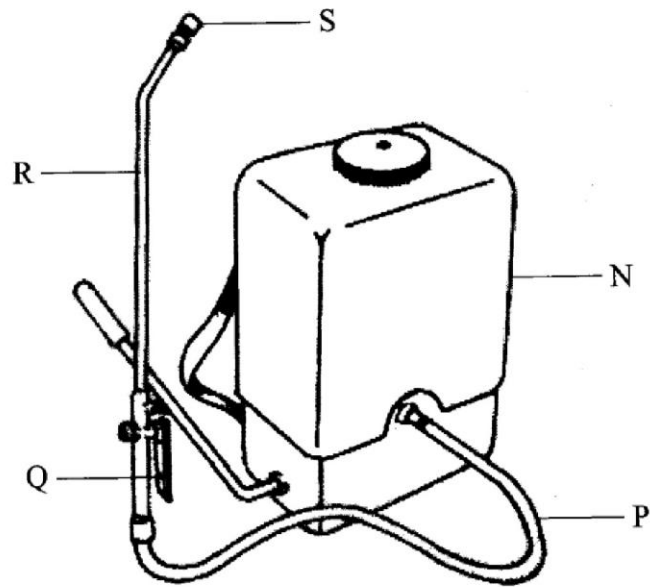
(i) Implement on the farm. (1 mark)

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(ii) Part of the implement labelled J. (1 mark)

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21. Below is a diagram of a knapsack sprayer. Study it carefully and answer the questions that follow.



(a) Name the parts labelled N, P, Q and R.

N (½ mark)

P (½ mark)

Q (½ mark)

R (½ mark)

(b) State **one** function of the part labelled S (1 mark)

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SECTION C (40 marks)

Answer any two questions in this section in the spaces provided after question 24.

- 22. (a) (i) Describe short-term tractor servicing. (10 marks)
- (ii) Explain the maintenance practices that should be carried out on an ox-cart. (5 marks)
- (b) State **five** indicators that can be observed on a goat to confirm sickness. (5 marks)
- 23. (a) Describe the uses of fences on the farm. (10 marks)
- (b) Give **five** harmful effects of liver flukes in sheep rearing. (5 marks)
- (c) Explain the factors considered when culling livestock. (5 marks)
- 24. (a) Describe **ten** physical characteristics a poultry farmer would use to identify poor layers from a flock of hens. (10 marks)
- (b) (i) Outline **three** characteristics of clean milk. (3 marks)
- (ii) Explain **seven** factors that affect milk composition in dairy farming. (7 marks)

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