

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.**

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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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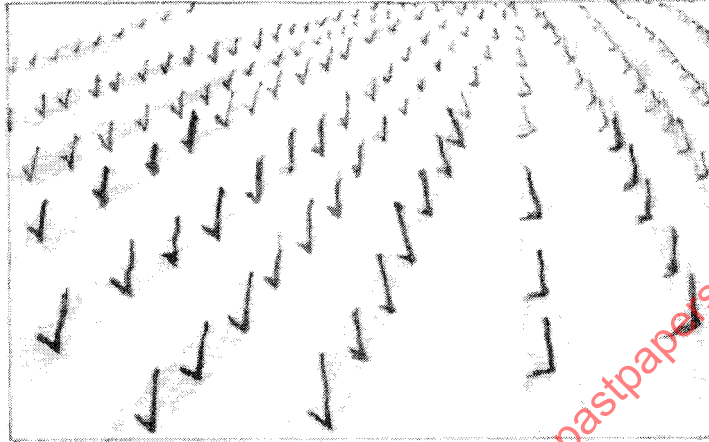
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SECTION B (20 marks)

*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)

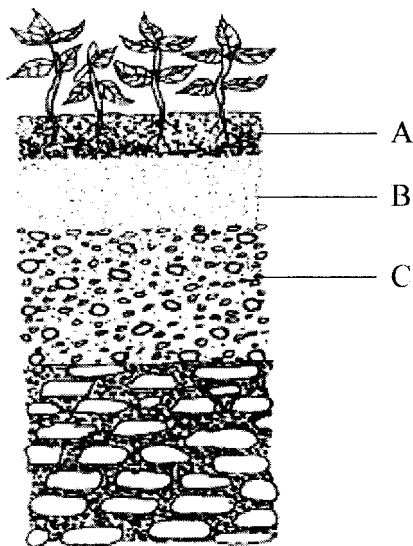
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20. The diagram below illustrates a feature observed after digging the soil several meters deep. Study the diagram carefully and answer the questions that follow.



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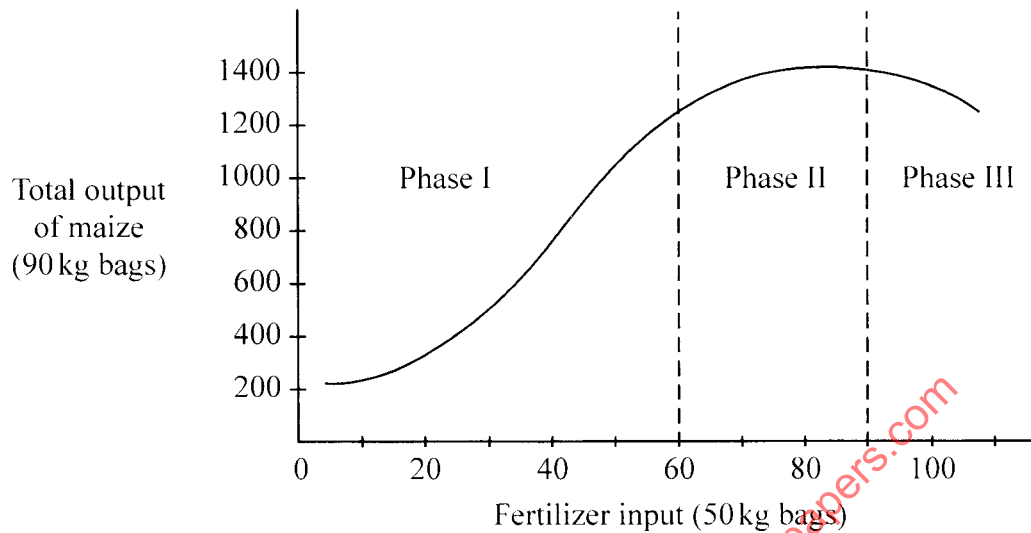
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21. Below is a graphical representation of a law in agricultural economics. Study the graph carefully and answer the questions that follow:



- (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 S_g 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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