Name...........................................................................Index No. .................. School .......................... Candidate's signature.............................. Date .......................

443/1

**AGRICULTURE**

Paper 1

**July/August 2019**

Time 2 hours

**NYANDARUA WEST CLUSTERS EXAMINATIONS**

Kenya Certificate of Secondary Education

**AGRICULTURE**

**INSTRUCTIONS TO CANDIDATES**

1. *Write your name and Index number in the spaces provided above.*
2. *Sign and write the date of the examination in the spaces above.*
3. *This paper consists of THREE sections A, B and C.*
4. *Answer ALL questions in section A and section B and Any Two questions in section C.*
5. *Candidates should check the question Paper to ascertain that ALL the Pages are Printed as Indicated and that no questions are missing.*
6. *All answers must be written in this booklet.*
7. *Candidates should answer all the Questions in English.*

**EXAMINER'S USE ONLY**

|  |  |  |  |
| --- | --- | --- | --- |
| **Section** | **Questions** | **Maximum**  **Score** | **Candidates Score** |
| **A** | **1-17** | **30** |  |
| **B** | **18-21** | **20** |  |
| **C** |  | **20** |  |
|  | **20** |  |
|  | **Total Score** | **90** |  |

***SECTION A – (30 marks)***

***(30 marks) Answer all questions in this section in the spaces provided***

1. Differentiate between Apiculture and Aquaculture (1 mark)

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1. State any ***four*** methods of farming (2 marks)

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1. Give two reasons for testing soil (1 mark) ……………………………………………………………………………………………………………………………………………………………………………………………………………………
2. Define the following terms

(a) Nitrogen fixation (1 mark)

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*…………………………………………………………………………………………………………………*

(b) Phosphorus fixation (1 mark)

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1. State ***Two effects*** of HIV/Aids on agricultural production (1 mark)

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1. State any ***four*** Reasons for organic farming (2 marks)

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1. Distinguish between soil structure and soil texture (2 narks)

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1. State any ***four*** examples of working capital (2 marks)

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1. What is Land reform? (1 mark)

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(b) State any ***four*** methods of land reform (2 marks)

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1. State any ***four*** ways of making land productive (2 marks)

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1. Distinguish between the following

(a) Fixed input and variable input (1 mark)

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(b) Journal and ledger book (**1 mark)**

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1. Differentiate between staking and propping in crop production (2 marks)

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1. Give four conditions of land which may make it necessary to carry out reclamation practices

(2 marks)

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1. Name a***ny two*** physical weathering agents in the soil formation process (1mark)

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*…………………………………………………………………………………………………………………*

1. State t***wo*** Mechanical methods of separating soil particles according to size during soil analysis.

(1mar***k)***

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1. State ***four*** functions of Boron in crop development (2marks)

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1. State f***our*** factors that should be considered when classifying crop pests (2 marks)

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***SECTION B 20 MARKS***

***Answer All Questions In This Section***

1. Different soil samples were tested and their Ph values tabulated as shown below

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil sample | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 |
| pH value | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

(i) Which soil sample had the highest acidity (1 mark)

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ii) Which soil is suitable for growing coffee (1 mark)

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iii) How would pH of soil sample P1 be increased (1 mark)

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iv) How would pH value of soil sample P8 be reduced? (1 mark)

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1. *(a)* State the four cardinal questions a farm manager formulates when preparing a partial budget (2 marks)

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*(b)* A farmer has 160 ha of arable land, 60ha of which is under wheat, 32ha under maize, 12ha under fodder crops and the rest under pasture. She wishes to know whether replacing 12 ha of maize with Irish potatoes in the following year would be worthwhile. The fertilizer rate would have to be increased from 5 bags per ha for maize to 7 bags per ha for Irish potatoes and an extra 100 man-days of casual labour per ha will be necessary as a result of the change. The average yield of maize and Irish Potatoes is 45 and 115 bags/ha respectively. The prices are Shs. 1,400 per bag for maize and Shs. 1,200 per bag for Irish potatoes. Seed costs are Shs. 2,500 per ha for maize and Shs. 30,000 per ha for Irish potatoes. Fertilizer costs are Shs. 1,300 per bag. Labour is paid Shs. 150 per man-day.

Draw up a partial budget and indicate the effect of the change. (6 Marks)

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1. A Farmer in Ol Joro-orok was adviced to plant maize at a spacing of 100cm by 50cm in his one hectare piece of land
   1. Calculate the plant population in his maize field. (*show your working*). (3 Marks)

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* 1. Give two undesirable effects of high population density in a field of maize grown for grains

(2 marks)

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1. A maize pest is shown in the diagram below. Study them and answer questions that follow



(a) Identify the pests in the diagram(1 mark)

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(b) At what stage of maize production does the pest damage the crop (1marks)

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(c) Give three way of controlling the pest. (3 marks)

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***SECTION C (40 Marks)***

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

1. a) Describe the production of dry beans under the following sub-headings.
2. Land preparation (3 marks)
3. Field management practices (4 marks)

b) Describe harmful effects of weeds on crop production (8marks)

c) Describe the importance of Agroforestry (5marks)

1. (a) Outline factors necessary for proper functioning of farmers co-operative societies in Kenya (5marks)

(b) Explain how farmers overcome risks and uncertainties in a farming business (7 marks)

(c) Describe steps farmers’ should follow when planning a farm business. (8 marks)

1. Discuss the importance of irrigation in farming (12 marks)

(b) Explain the factors that influence the type of irrigation to be used in a farm (8 marks)

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