Name: ………………………………………………………….. Index No. ……………………………………

Date: …………………………………………………………. Candidate’s Sign. …………................................

**443/1**

**AGRICULTURE**

Paper 1

September, 2013

**Time: 2 Hours**

***Kenya Certificate of Secondary Education (K.C.S.E.)***

**AGRICULTURE**

Paper 1

September, 2013

**Time: 2 Hours**

**INSTRUCTIONS TO THE CANDIDATES:**

1. Write your **name, index number** and **school** in the spaces provided above.
2. **Sign** and write the **date** of examination in the spaces provided.
3. This paper consists of **Three** Sections: **A, B** and **C**.
4. Answer **ALL** the questions in section **A** and **B** and any **TWO** questions from section **C**.
5. Answers should be written in the spaces provided.
6. This paper consists of **11**printed pages.
7. Candidates should check the questions paper to ascertain that all the pages are printed as indicated and that no questions are missing.

**For Examiners’ Use Only**

|  |  |  |  |
| --- | --- | --- | --- |
| **SECTION** | **QUESTIONS** | **MAXIMUM SCORE** | **CANDIDATE’S SCORE** |
| **A** |  | 30 |  |
| **B** |  | 20 |  |
| **C** | | 20 |  |
| 20 |  |
| 90 |  |

*This paper consists of 11 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.*

**SECTION A (30 MARKS)**

***Answer ALL the questions in this section in the spaces provided***

1. Define the termorganic farming (1mk)

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2. Distinguish between the terms nitrogen fixation and phosphorous fixation in soil fertility (2mks)

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3. Give the functions of the following during compost manure preparation (1½mks)

(i) Top soil …………………………………………………………………………………………

(ii) Wood ash ……………………………………………………………………………………….

(iii) Well rotten manure ……………………….. …………………………………………………..

4. Define the term land reclamation (1mk)

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5. State **three** advantages of using drip irrigation (1½ mks)

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6. Name **two** cabbage varieties that are late maturing (1mk)

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7. A field of maize requires 120kg/ha of phosphorus pentoxide (P2O5). A compound fertilizer 20:20:10 is to be used in the filed. Calculate the amount of the compound fertilizer required for 0.4 ha of the land (show your working). (2mks)

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8. State **three** farming activities that minimize water pollution (1½ mks)

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9. Differentiate between the following terms:-

(i) Fixed input and variable input (1mk)

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(ii) Journal and ledger book (1mk)

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10. State **four** factors contributing to competitive ability of weeds. (2mks)

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11.(a) Define the term land reform (½ mk)

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(b) List **three** methods of land reform (1½mks)

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12. State **four** reasons for keeping livestock health records. (2mks)

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13. Outline **three** reasons for treating water. (1½mks)

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14. Give **two** importance of carrying out the following ternary land operations.

(i) Rolling (1mk)

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(ii) Leveling (1mk)

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15. State **three** advantages of zero grazing. (1½ mks)

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16. List **three** activities carried out during land clearing. (1½ mks)

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17. State **three** reasons for planting crops at correct spacing (1½ mks)

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18. Give **two** benefits of conserving forage crops (1mk)

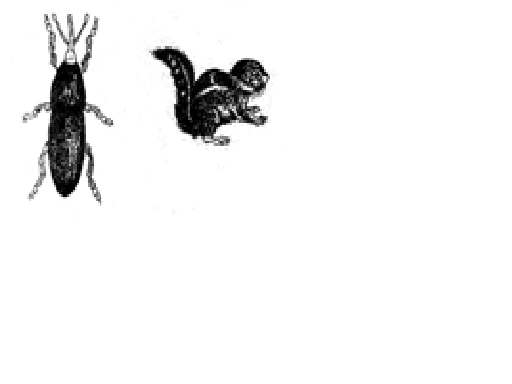
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19. Identify **four** activities carried out by Young Farmers Clubs in Kenya (YFCK). (2mks)

**SECTION B (20 MARKS)**

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

20. Two maize pests are shown in the diagram below. Study them and answer the questions that follow.



**A**

**B**

1. Identify the pests in the diagram labeled **A** and **B** (1mk)

**A** ……………………………………………………………………………………………………

**B** …………………………………………………………………………………………………...

1. At what stage of maize production does each pest damage the crop? (2mks)

**A** ……………………………………………………………………………………………………

**B** ……………………………………………………………………………………………………

1. Give **one** way of controlling each of the pests in the field. (2mks)

**A** …………………………………………………………………………………………………...

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**B** ……………………………………………………………………………………………………

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21. (a) State the law of diminishing returns in a production process (1mk)

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(b) Use the information on the table below to answer the questions that follow.

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| **Fertilizer input (units)** | **Maize yield (bags)** | **Marginal product (bags)** |
| 0 | 50 |  |
| 1 | 62 | 12 |
| 2 | 66 | 4 |
| 3 | 68 | 2 |
| 4 | 69 | 1 |
| 5 | 69 | 0 |

The cost of fertilizer is sh. 1500 per unit and price of maize is sh.1200per bag.

(i) At what unit of fertilizer input should the farmer be advised to stop applying any more fertilizer to

the maize? (1mk)

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(ii) Calculate the marginal return at the point optimum production (1mk)

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22.(a) Describe the procedure which should be followed in spacing a crop of tomatoes using a fungicide in

powder form, water and knapsack sprayer. (3mks)

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(b) Name one fungal disease of tomatoes that can be controlled using above procedure. (1mk)

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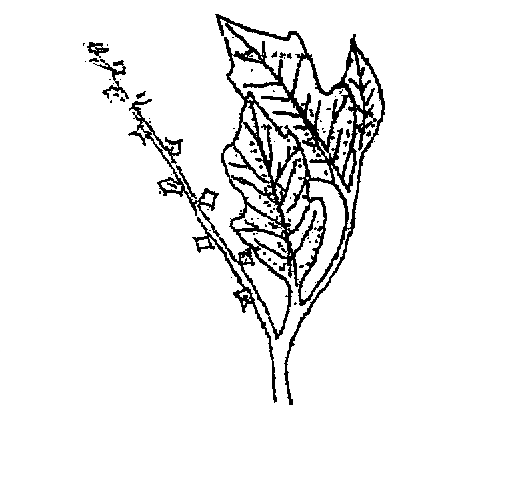
1. State four safety measures that can be taken while spraying the crop with the fungicide. (2mks)

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23. The diagram below shows a common weed found in the field during crop production.

(a) Identify the weed (1mk)

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(b) Why is it difficult to control weed? (1mk)

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(c) State harmful effects of the weed (3mks)

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**SECTION C (40 MARKS)**

***Answer any two questions in this section in the spaces provided at the end of the section.***

24.(a) Describe the establishment of carrots under the following subheadings.

(i) Land preparation (5mks)

(ii) Establishment (5mks)

(b) State **ten** steps a farmer should follow when planning a farm business. (10mks)

25.(a) Describe the method and procedure of harvesting coffee (5mks)

(b) State **five** farming activities which may encourage soil erosion (5mks)

26 (a) Describe the production of Lucern (medicago satwa) under the following sub headings:

(i) Establishment (5mks)

(ii) Management (3mks)

(iii) Utilization (2mks)

(b) Give **five** roles of calcium in plants. (5mks)

(c) Explain **five** function of a farm manager. (5mks)

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