**NAME...........................................................................................INDEX NO.................................../......**

 **CANDIDATE’S SIGNATURE............................................... DATE......................................................**

**443/1**

**AGRICULTURE**

**Paper 1**

**2 Hours**

**SET 3**

**FORM 4**

**Instructions to candidates**

1. *Write your name and index number in the spaces provided above.*
2. *Sign and write the date of examination in the spaces provided above.*
3. *This consists of* ***three*** *sections:* ***A, B*** *and* ***c.***
4. *Answer* ***all*** *the questions in sections* ***A*** *and* ***B.***
5. *Answer any* ***two*** *questions from section* ***C.***
6. *Answers should be written in the spaces provided.*
7. *This paper consists of 12 printed pages.*
8. *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

**For Examiner’s Use Only**.

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| **Section**  | **Question**  | **Maximum score**  | **Candidate’s Score**  |
| **A** | **1 – 22** | **30** |  |
| **B** | **23 – 27**  | **20** |  |
| **C** |  | **20** |  |
|  | **20** |  |
| **Total Score**  |  |  |

**SECTION A – (30 Marks)**

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

**1.** List **four** branches of livestock farming. **(2 marks**)

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**2.** Give **three** reasons why old rather than fresh manure is preferred for application onto crop land.

 **(1 ½ marks)**

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**3.** State **three** ways in optimum soil temperature enhance crop production. **(1 ½ marks)**

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**4.** Give **two** aspects of light which influence agricultural. **(1 mark)**

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**5.** Give **three** reasons for rolling a seedbed as a tertiary operation.  **(1 ½ marks)**

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**6.** State **three** types of water sources in the farm. **(1 ½ marks)** ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

**7.** Give the difference between permanent goods inventory and consumable goods inventory.

 **(1 mark)**

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**8.** Name **two** methods of soil sampling. **(1 mark)**

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**9.** Give **two** ways in which soil PH influences soil fertility **(1mark)**

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**10.** Differentiate terms chiting and seed inoculation as used in crop production. **(1 mark)**

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**11.** What is the meaning of germination percentage? **(1 mark)**

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**12.** Give **four** characteristics of certified seeds **(2 marks)**

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**13.** State the importance of a grass ley in a rotation program**. (1/2 mark)**

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**14.** State **three** factors which encourage successful grafting. **(1 ½ marks)**

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**15.** What is the effect on organic manure in carrot production? **(1 mark)**

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**16.** State **three** physical measures of soil and water conservation.  **(1 ½ marks)**

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**17.** State **four** varieties of dry beans.  **(2 marks)**

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**18.**  State **four** effects of late defoliation in pastures. **(2 marks)**

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**19.** Give **two** tree shrubs which may be used as folder crops. **(1 ½ marks)**

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**20.** State **three** kinds of individual tenure system.  **(1 ½ marks)**

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**21.** Differentiate gross domestic product and Gross national products. **(1 mark)**

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**22.** Give the meaning of the following terms in agricultural economics; **(1 mark)**

**i)** Liquid capital

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**ii)** Fixed capital

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**SECTION B – (20 Marks)**

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

**23.** A livestock farmer in Kirinyaga can rear dairy cattle, beef cattle or sheep. If the farmer undertakes each of the enterprises at a time, he is likely to get returns as follows:

 Dairy cattle Kshs.70, 000

 Beef cattle Kshs.65, 000

 Sheep farming Kshs.75, 000

1. From the information given which enterprise the farmer should choose? **(1/2 mark)**

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**b)** Give a reason for your answer in (a) above. **(1mark)**

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**(c)** What is the opportunity cost of undertaking the enterprise chosen in (a) above? **(1 mark)**

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**24. a)** What is soil PH?  **(1 mark)**

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**b)** The diagram below is a PH scale. Study it and answer the questions that follow

 1 2 3 4 5 6 7 8 9 10 11 12 13 14

 K L

 **i)** What PH do the arrows K and L represent? **(1 mark)**

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 **ii)** State the PH range where most beneficial soil organisms are active.  **(1 mark)**

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 **iii)** Give the soil PH in which nematodes are prevalent. **(1 mark)**

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**25.** Diagrams EF and G blow shows the panicles of three sorghum varieties growing side by side



**i)** Which **one** of the three varieties of sorghum is last likely to be damaged by the birds. **(1 mark)**

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**ii)** Give a reason for you answer in (i) above **(1 mark)**

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 **(iii)** State **two** other methods apart from using the above variety that are used to control birds in a

field of sorghum **(2 marks)**

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**26.** The diagram below illustrates a field management practice carried out on a fruit crop.



**a)** Identify the practice illustrated above.  **(1 mark)**

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**b)** Give **two** reasons for carrying out the practice illustrated in the above diagram. **(2 marks)**

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 **27.** Below are diagrams showing how to place the cuttings in the sleeves.



 **i)** State the cutting which has been planted correctly between C2 and C1. **( ½ mark)** ……………………………………………………………………………………………………………………………………………………………………………………………………………………

**ii)** Give a reason for the answer given in (a) above. **( 1 mark)**

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**b)** The stem cuttings should be obtained from the middle part of the shoot. Give a reason why it is

not advisable to use the bottom and the top. **(2 marks)**

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**c)** State **three** advantages of raising stem cuttings in polythene sleeve. **(3 marks)**

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**SECTION C: (40 marks)**

**Answer two questions from this section**

**28.** **a)** Explain **ten** factors to consider when selecting a farm enterprise. **(10 marks)**

**b)** Describe **five** human factors which influence agricultural production. **(5 marks)**

**c)** Describe the precautions to be taken when harvesting cotton. **(5 marks)**

**29.** **a)** Describe the procedure a farmer should use during transplanting seedling. **(10 marks)**

**b)** Describe **five** functions of a farm manager as a factor of production. **(10 marks)**

**30. a)** Explain **ten** farming practices which help to conserve soil in a farm. **(10 marks)**

**b)** Explain **ten** cultural methods of disease control in crops. **(10 marks)**

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