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**443/1**

**AGRICULTURE**

**PAPER 1**

**TIME: 2 HOURS**

**DECEMBER, 2021**

**LANJET EXAMINATION (2021)**

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

**INSTRUCTIONS TO CANDIDATES**

* Write your name, school and index number, in the spaces provided above.
* Sign and write the date of the examination in the spaces provided above.
* This paper consists of three sections: A, B and C.
* Answer **all** the questions in section **A** and **B** and **any two** questions from section **C.**
* All answers must be written in the spaces provided in this paper.

**For Examiner’s Use Only**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | | |  |  |  |  |
| **SECTION** | **QUESTIONS** | |  |  | **MAXIMUM SCORE** | | | | **CANDIDATES SCORE** |
|  |  |  |  | | |  |  |  |  |
| **A** | **1−15** | | **30** | | |  |  |  |  |
|  |  |  |  | | |  |  |  |  |
| **B** | **16−19** | | **20** | | |  |  |  |  |
| **C** |  | | **20**  **20** | | | | | |  |
| **TOTAL SCORE** |  | | **90** | | | | | |  |



**SECTION A (30 MARKS)**

***answer ALL questions in this Section in the spaces provided***

1. Outline **two** ways in which agriculture promotes industrial growth in Kenya (1mk)
2. State **four** factors considered when choosing a farming system. (2mks)
3. Give **four** natural factors that encourage soil erosion. (2mks)
4. List any **four** ways in which soil is deprived of its fertility. (2mks)
5. State **four** factors considered when selecting a site for a tomato nursery bed. (2mks)
6. State **four** reasons for intercropping. (2mks)
7. Give **four** advantages of intensive farming. (2mks)
8. Give **four** reasons why land should be prepared early in readiness for planting. (2mks)

1. State f**our** reasons for deep ploughing during land preparation. (2mks)
2. State **two** reasons for conserving forage crops. (1mk)
3. Name **two** types of labour records kept in the farm. (1mk)
4. Give **two** ways in which mulch control soil erosion. (1mk)
5. Define the following terms as used in soil fertility. (2mks)
6. Macro nutrients
7. Micro nutrients
8. a) State **four** roles of Nitrogen as a macro nutrient in plant nutrition. (2mks)
9. Give **two** methods that can be used to detect nutrient deficiency in crops. (2mks)
10. Name **two** ionic forms through which element Nitrogen is absorbed by plants. (2mks)

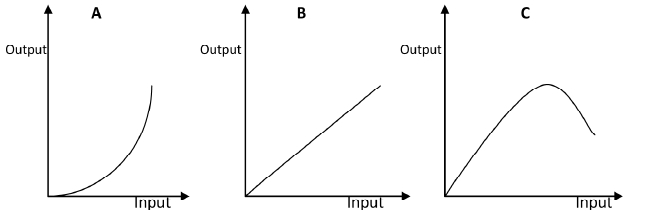
1. Give **four** factors considered when classifying crop pests. (2mks)

**SECTION B (20 Marks)**

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

16 .The following illustrations show different production function curves in agricultural economics.

Study them and answer the questions that follow

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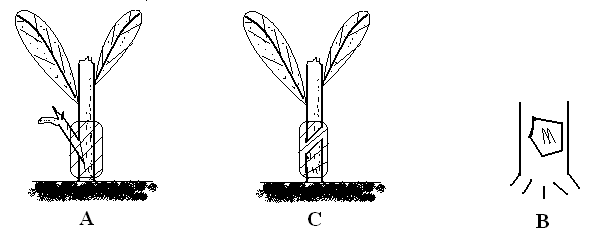
1. Identify the production function curves A and B. (2mks)

**A**

**B**

1. State the law derived from the production function labelled C. (1mk)
2. i) Which one of the three production function curves is rare in Agriculture? (1mk)
3. ii) Give a reason for your answer in (c) (i) above. (1mk)

17. Study the illustrations below and answer the questions that follow.



1. Name the types of grafting labeled A and C. (2mks)

A

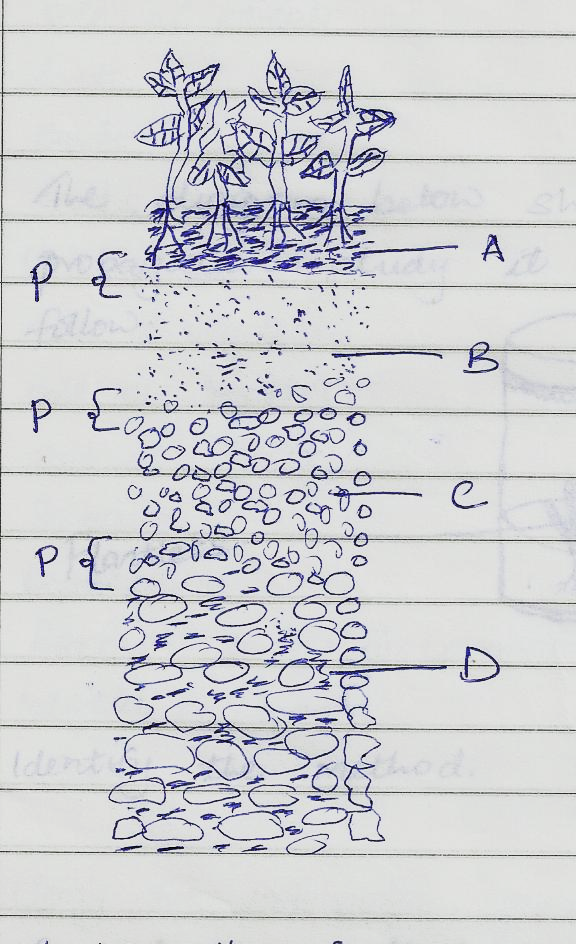
C

1. Name any **two** crops propagated by method C. (2mks)
2. Give any **two** tools or materials used in propagation method C. (2mks)

d) Give **four** advantages of using grafting method as a method of improving avocado fruits. (2mks)

18. Calculate the plant population in a 5.4 hectare plot of a bean crop planted at the spacing 45cmx 20cm. Assume one plant per hole. (3 mks)

19. The diagram below illustrates a feature observed after digging the soil several metres deep Study the diagram carefully and answer the question that follow.



1. Identify the feature that the diagram above represents in the study of soil. (1mk)
2. What is the name given to part labeled P (1mk)
3. Give a reason why part B is also referred to as layer of accumulation. (1mk)

**SECTION C**

**Answer any TWO questions from this section**

20. a) Explain **ten** ways in which the Kenyan government can improve maize production to ensure food security in the country. (10mks)

b) Explain **six** ways in which soil fertility can be maintained. (6mks)

c) Highlight **four** reasons for pruning coffee. (4mks)

21. a) Explain **eight** cultural methods of soil and water conservation. (8mks)

b) Explain **four** ways in which:

1. HIV/AIDS limits agricultural production (4mks)
2. Government policy improves agricultural production. (4mks)

c) Explain the factors considered when choosing an irrigation method in crop production. (4mks)

22. a) Describe **six** factors that determine the stage of harvesting crops. (6mks)

b) Describe the production of carrots under the following subheadings:

1. Planting (3mks)
2. Field management (6mks)
3. Harvesting (2mks)

c) Describe **three** importance of agroforestry. (3mks)