

2910/103
CROP ENTERPRISE MANAGEMENT I AND
FOUNDATIONS OF SUSTAINABLE AGRICULTURE
June/July 2023
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN SUSTAINABLE AGRICULTURE
AND RURAL DEVELOPMENT

MODULE I

CROP ENTERPRISE MANAGEMENT I AND FOUNDATIONS OF
SUSTAINABLE AGRICULTURE

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Non-programmable scientific calculator;

Answer booklet.

This paper consists of EIGHT questions in TWO sections; A and B.

Answer a total of FIVE questions taking at least TWO questions from section A and at least TWO questions from section B, in the answer booklet provided.

All questions carry equal marks.

Maximum marks for each part of a question are indicated.

Candidates should answer the questions in English.

This question paper consists of 3 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A: CROP ENTERPRISE MANAGEMENT I

Answer at least **TWO** questions from this section.

1. (a) (i) Define the term 'photoperiodism' in plants.
(ii) Explain **three** categories of plants in relation to photoperiodism. (8 marks)
- (b) Highlight the problems affecting crop production in Kenya. (12 marks)
2. (a) Describe amphimixis under the following:
(i) meaning;
(ii) types;
(iii) consequences. (10 marks)
- (b) Explain soil acidity under the following:
(i) meaning;
(ii) types;
(iii) effects. (10 marks)
3. (a) Pineapples are planted in double rows at a spacing of 0.5 m between the double rows and 1.5 m from the centre of one double row to another. Given that the inter-plant spacing is 30 cm, determine the plant population in 1.5 hectares of land. (6 marks)
- (b) Highlight **six** post-harvesting losses in cereals. (6 marks)
- (c) Differentiate between direct and indirect sowing. (4 marks)
- (d) Outline the procedure of pricking out. (4 marks)
4. (a) Explain **five** practices involved in conservation tillage. (10 marks)
- (b) (i) Define the term 'push and pull technique'.
(ii) Highlight **eight** benefits of push and pull technique. (10 marks)

SECTION B: FOUNDATIONS OF SUSTAINABLE AGRICULTURE

Answer at least **TWO** questions from this section.

5. (a) (i) Distinguish monitoring from evaluation.
(ii) Highlight **six** goals of monitoring. (10 marks)
- (b) Explain **five** benefits of integration of enterprises in entomoforestry. (10 marks)
6. (a) Highlight **eight** key features of appropriate technology. (8 marks)
- (b) Describe sandy soils with respect to:
(i) properties;
(ii) measures used to improve sandy soils. (12 marks)
7. (a) Explain hard water under the following:
(i) meaning;
(ii) advantages;
(iii) disadvantages. (8 marks)
- (b) Explain the principles of crop rotation. (5 marks)
- (c) Highlight **seven** measures that can be used to improve food security. (7 marks)
8. (a) Describe **three** measures that are used in conservation of environment. (6 marks)
- (b) Explain **four** characteristics of organic farming. (8 marks)
- (c) Explain each of the following terms:
(i) household food security;
(ii) food insecurity;
(iii) nutrition insecurity. (6 marks)

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