

2425/201

**CROP PRODUCTION II, SOIL FERTILITY
AND PLANT NUTRITION**

June/July 2018

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AGRICULTURE

MODULE II

CROP PRODUCTION II, SOIL FERTILITY AND PLANT NUTRITION

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Non-programmable scientific calculator;

Answer booklet.

This paper consists of TWO sections; A and B.

Answer any THREE questions from section A and any 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 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 PRODUCTION II (60 marks)

Answer any **THREE** questions from this section.

1. (a) Describe late blight disease in Irish potatoes with respect to:
- (i) cause;
 - (ii) symptoms;
 - (iii) control. (8 marks)
- (b) Describe sweet potato production with respect to:
- (i) land preparation;
 - (ii) crop establishment;
 - (iii) harvesting;
 - (iv) curing. (12 marks)
2. (a) Explain the ways of handling the following problems in wheat production:
- (i) soil acidity;
 - (ii) copper deficiency;
 - (iii) weed control;
 - (iv) seed rate. (12 marks)
- (b) Describe weed control in paddy rice. (8 marks)
3. (a) Give any five uses of coconut. (5 marks)
- (b) Describe coconut production with respect to:
- (i) ecological requirements;
 - (ii) propagation;
 - (iii) field management practices;
 - (iv) harvesting. (15 marks)
4. (a) Describe the following practices in coffee:
- (i) harvesting;
 - (ii) handling and desuckering. (14 marks)
- (b) Outline the delinting process in cotton. (6 marks)
5. (a) Explain factors that influence quality in wattles. (10 marks)
- (b) Outline the stages involved in sisal processing. (10 marks)

SECTION B: SOIL FERTILITY AND PLANT NUTRITION (40 marks)

Answer any TWO questions from this section.

6. (a) The fertilizer recommendation for a given crop is given as 100 kg P_2O_5 / ha. Determine:
- (i) amount of D.A.P (18:46:0) fertilizer required in kilograms per hectare;
 - (ii) amount of nitrogen contained in the D.A.P fertilizer. (5 marks)
- (b) Explain the effects of C:N ratio on decomposition of organic matter. (15 marks)
7. (a) State the characteristics of a suitable urea inhibitor. (4 marks)
- (b) Highlight the objectives of soil testing. (6 marks)
- (c) Explain factors influencing volatilization of nitrogenous fertilizers. (10 marks)
8. (a) Explain **four** methods of evaluating plant nutrient levels. (8 marks)
- (b) Outline the steps involved in soil testing. (8 marks)
- (c) Using chemical equations, explain the reaction of calcium carbonate in acidic soil. (4 marks)

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