

2425/201  
CROP PRODUCTION II, SOIL FERTILITY  
AND PLANT NUTRITION  
June/July 2010  
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:*

*Answer booklet  
Scientific calculator*

*This paper consists of TWO sections; A and B.  
Answer any THREE questions from section A and any TWO questions from section B.*

**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.**

CP June/July 2010

**SECTION A :***Answer any THREE questions from this section.*

1. Explain the following:
  - (a) harvesting and drying of pyrethrum; (10 marks)
  - (b) growth cycles in rice; (10 marks)
2. (a) Write the botanical name of the following crops:
  - (i) simsim;
  - (ii) oil palm;
  - (iii) common bean;
  - (iv) groundnut;
  - (v) sisal. (5 marks)

(b) Explain the procedure of bringing Tea into bearing. (15 marks)
3. Explain:
  - (a) damage caused and control of striga weed in cereals; (12 marks)
  - (b) damage caused by Jassids in cotton. (8 marks)
4. In reference to Arabica coffee, describe:
  - (a) plant characteristics; (6 marks)
  - (b) wet processing. (14 marks)
5. Describe the following in sugar-cane production:
  - (a) propagation; (8 marks)
  - (b) harvesting; (7 marks)
  - (c) leaf smut. (5 marks)

## SECTION B : EXTENSION

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

6. (a) Explain the processes taking place in the following equation: (12 marks)



- (b) Describe the deficiency and toxicity symptoms of nitrogen in plants. (8 marks)

7. (a) Explain the influence of organic matter on soil properties. (8 marks)

- (b) Explain the reactions that take place when organic tissues are added to the soil. (6 marks)

- (c) (i) State **four** factors that determine the amount of liming material to bring a desired pH change. (4 marks)

- (ii) Name any **two** liming materials that can be used to decrease soil acidity. (2 marks)

8. (a) Write the chemical formula for the following:

- (i) ammonium sulphate;  
 (ii) diammonium phosphate;  
 (iii) calcium nitrate;  
 (iv) potassium sulphate;  
 (v) urea. (5 marks)

- (b) (i) Define fertigation. (2 marks)

- (ii) State advantages of fertigation. (5 marks)

- (c) (i) Using the following fertilizer materials; Ammonium Nitrate (33% N), Superphosphate (20%  $P_2O_5$ ) and Muriate of potash (60%  $K_2O$ ), calculate the amount of each that can be used to prepare 50kg of 6-12-12 (NPK) mixed fertilizer. (7 marks)

- (ii) What other material used in 8c(i) would be added to the mixture to make 50kg weight? (1 marks)