



MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION KRM

309: PERENNIAL CROPS PRODUCTION

DATE:

TIME:

INSTRUCTIONS:

Answer question one and two other questions

QUESTION ONE COMPULSORY: (30 MARKS)

- a) Explain how a farmer can propagate the following crops
- i) Sisal (2 marks)
 - ii) Coconut (2 marks)
 - iii) Coffee (2 marks)
- b) Explain five roles of perennial crops towards maintaining the environmental (5 marks)
- c) i) Explain two reasons why shade should be included in crop production, giving two specific examples of crop that can be used as shade (2 marks)
- ii) Explain two reasons why windbreaks are important in perennial plantations (2 marks)
- d) i) Explain two reasons why farmers practice tipping in tea production (2 marks)
- ii) Distinguish between fine and coarse plucking in tea production (2 marks)
- e) Explain two uses of the following crops to the farmers
- i. Macadamia (2 marks)
 - ii. Pyrethrum (2 marks)
 - iii. Sugarcane (2 marks)
 - iv. Cashew nut (2 marks)

- f) Explain two differences between *Arabica* and *Robusta* coffee (2 marks)
- g) Explain three methods a farmer can use in extracting his/her own sisal twines (3 marks)
- i) Explain the importance of following practices in perennial crops
 - i. Training (2 marks)
 - ii. Overbearing dieback (2 marks)
- j) Describe the symptoms of the following diseases in perennial crops
 - i. Bud disease (2 marks)
 - ii. Internode borer (2 marks)

SECTION B: Answer any TWO Questions (40 Marks)

QUESTION TWO

- a) Explain the propagation of tea under the following headings
 - i. Ecological conditions (5 marks)
 - ii. Pruning (5 marks)
- b) Describe pyrethrum production under the following headings
 - i. Climatic requirements (5 marks)
 - ii. Planting (5 marks)

QUESTION THREE

Explain Coffee production under the following headings

- a) Pruning (5 marks)
- b) Uses (4 marks)
- c) Fertilizer application (5 marks)
- d) i) Coffee Berry disease management (3 marks)
- ii) Coffee wilt disease symptoms (3 marks)

QUESTION FOUR

- a) Explain how a farmer can manage pests and diseases in a pyrethrum farm, citing relevant pests/diseases (10 marks)
- b) Explain five solutions to challenges facing perennial crop production in Kenya (10 marks)

QUESTION FIVE

- a) Describe the following practices in macadamia production in Kenya
 - i. Canopy management (9 marks)
 - ii. Training (3 marks)
- b) Explain four management practices you would advice the farmer to carry out in production of pyrethrum for maximum quality and quality of pyrethrin content (8 marks)