



# MACHAKOS UNIVERSITY

University Examinations for 2016/2017

**SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT**

**DEPARTMENT OF ENVIRONMENTAL STUDIES**

**SECOND SEMESTER EXAMINATION FOR THE DIPLOMA IN AGRICULTURAL  
EDUCATION AND EXTENSION**

**KRM 0309: PERENNIAL CROPS**

**TIME: 16/12/2016**

**2:00 – 4:00 PM**

---

---

**INSTRUCTION TO CANDIDATES:**

**Answer ALL questions from Section A and any other TWO from Section B:**

**SECTION A: COMPULSORY: (30 MARKS)**

1. a) Explain five importance of perennial crops in environmental management and sustainability (5 marks)
- b) i) Explain two reasons why shade should be included in some perennial crops plantations (2 marks)  
ii) With two examples, explain two reasons why windbreaks are important in perennial plantations (2 marks)
- c) Explain how a farmer can establish the following crops  
i) Coconut (2 marks)  
ii) Sugarcane (2 marks)  
iii) Coffee (2 marks)
- d) i) Explain why farmers practice tipping in tea production and when should it be done (2 marks)  
ii) Distinguish between fine and coarse plucking in tea production (2 marks)

- e) Explain two reasons why you would encourage farmers to plant the following crops
  - i) Macadamia (2 marks)
  - ii) Cashew nut (2 marks)
  - iii) Sisal (2 marks)
- f) Explain two differences between Arabica and Robusta coffee (2 marks)
- h) Explain three methods a farmer can use in extracting his/her own sisal (3 marks)

**SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)**

- 2. Explain the propagation of tea under the following headings
  - a) Planting (5 marks)
  - b) Pruning (5 marks)
  - c) Diseases and their control (5 marks)
  - d) Harvesting (5 marks)
- 3. Explain Coffee production under the following headings
  - a) Pruning (5 marks)
  - b) Uses (5 marks)
  - c) Fertilizer application (5 marks)
  - d) i) Coffee Berry disease management
  - ii) Coffee Wilt disease symptoms (5 marks)
- 4. a) With relevant examples, explain how a farmer can management pests and diseases in a coconut farm (10 marks)
- b) Explain 10 challenges facing perennial production in Kenya (10 marks)
- 5. a) Explain macadamia production in Kenya under the following
  - i) canopy management (9 marks)
  - ii) Training (3 marks)
- b) Explain four management practices you would advice the farmer to carry out for maximum production of pyrethrum (8 marks)